

**Counterproductive Work Behavior in Teams and Hierarchical  
Relationships:  
Organizational and Individual Factors**

Von der Fakultät für Wirtschaftswissenschaften der  
Rheinisch-Westfälischen Technischen Hochschule Aachen  
zur Erlangung des akademischen Grades einer Doktorin der  
Wirtschafts- und Sozialwissenschaften genehmigte Dissertation

vorgelegt von

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# **Part 1. Introductory Overview of the Dissertation Project**

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# **1. Introduction**

The dissertation deals with the influencing factors on counterproductive work behavior (CWB), particularly sabotage behavior among employees. A distinction is made between organizational and individual factors. Chapter 1 constitutes the relevance of this topic from a theoretical as well as a practical perspective. Therefore, a short introduction to the current state of research is given, and relevant problems in the research field are exposed. Furthermore, the research questions and the research model are presented. Chapter 2 defines the key terms and objectives of the dissertation: workplace sabotage, misconduct, and justice. Chapter 3 presents the current state of research and the arising research gaps. It includes research concerning workplace sabotage from different research areas, such as tournaments, promotion, and misconduct. After that, in chapter 4 the theoretical background for the research questions is presented. Chapter 5 presents the methodical procedure which was chosen to answer the research questions. The dissertation is based on laboratory experiments; thus the experimental design is presented. Based on the theoretical background, the main hypotheses are derived and the findings of the research papers are presented in chapter 6. Finally, in chapter 7 the contributions of these findings and their implications for theory and practice are discussed.

## **1.1 Motivation for the Research Questions**

### **Counterproductive Work Behavior**

Motivation Theory considers how to influence the work behavior of employees in a positive way in order to reach organizational goals and to increase job satisfaction. Work behavior literature distinguishes between task performance, organizational citizenship behavior (OCB), and counterproductive work behavior (CWB) (Dalal, 2005). Task performance refers to the effectiveness with which job incumbents perform activities. Beyond that, CWB and OCB are classified as extra-role behaviors. Empirical studies have shown that there is a negative correlation between these two constructs (e.g., Sackett and DeVore, 2001; Spector and Fox, 2002). CWB can be generally defined as voluntary behavior that violates organizational norms and threatens the organization, its members, or both

(Robinson and Bennett, 1995). While CWB is a harmful behavior, OCB is defined as a helpful behavior that goes beyond expected performance, is voluntary, and is non-rewarded (Organ, 1988). CWB poses a challenge for organizations due to the incurred costs in the form of bad job performance, theft, and destruction of property (Sackett, 2002). Concerning this problem, the dissertation discusses how such CWB by employees occurs and what implications it has for organizations when arranging the work environment. The dissertation concentrates especially on workplace sabotage as a form of CWB. Chowdhury and Gürtler (2015) state that sabotage behavior is unproductive and wasteful because it destroys valuable output in a system. Further, the anticipation of being sabotaged could prevent the players from exerting productive effort. Moreover workplace sabotage is often a covert behavior, and hence difficult to observe and hard to manage (Harbring and Irlenbusch 2011). Therefore, laboratory experiments are chosen as a methodology to create a controlled setting where it is possible to observe sabotage behavior and its causes in order to create a work environment that helps to avoid destructive behavior.

Employees operate in a context with relationships to other employees, where not only formal but also social aspects determine behavior at work. Because employees act in a social context, individual behavior depends on social norms which provide patterns for normative behavior and which guide interactions (Fehr and Fischbacher, 2004). Fehr and Gächter (2000a) state that a social norm is a sort of behavioral public good, to which everybody should make a positive contribution by following the norm as well as being willing to enforce the social norm by social sanctions (see also Falk and Fischbacher, 2004). On the one hand, the dissertation captures cooperative norms which have been introduced by the organization through a code of conduct and should give incentives to increase team output. On the other hand, fairness norms are considered which could determine the distribution of payoffs in hierarchical relationships. The dissertation contributes to the existing literature by analyzing how the violation of such norms on the level of the organization influences the relationships and counterproductive behavior between employees. Especially, the dissertation considers sabotage behavior in dyads where interactions between individuals take place. The group members in such dyads are either on the same level or in a hierarchical relationship (supervisor and subordinate). In a competitive environment with hierarchical relationships, the

focus is on the status of an individual and the material advantage of that status (Congleton, 1989). Sabotage by the person in the lower hierarchical position can occur in order to reduce the gap between her/him and the superior (Charness et al., 2014). In teams collaboration, especially in the form of knowledge sharing, is a crucial element of firm success (Davenport and Prusak 1998). It is positively related to reduction of production costs, to team performance, and to innovation capabilities (Wang and Noe, 2010). Harbring and Irlenbusch (2011) show that employees utilize sabotage practices, such as not sharing knowledge (passive sabotage) or even supplying destructive information, when employees are rewarded on the basis of tournament schemes. Balakrishnan and Letmathe (2017) reveal that (active) sabotage behavior is even relevant when economic incentives favor the sharing of performance-increasing knowledge.

In the next section the organizational and individual factors which have an influence on CWB are presented.

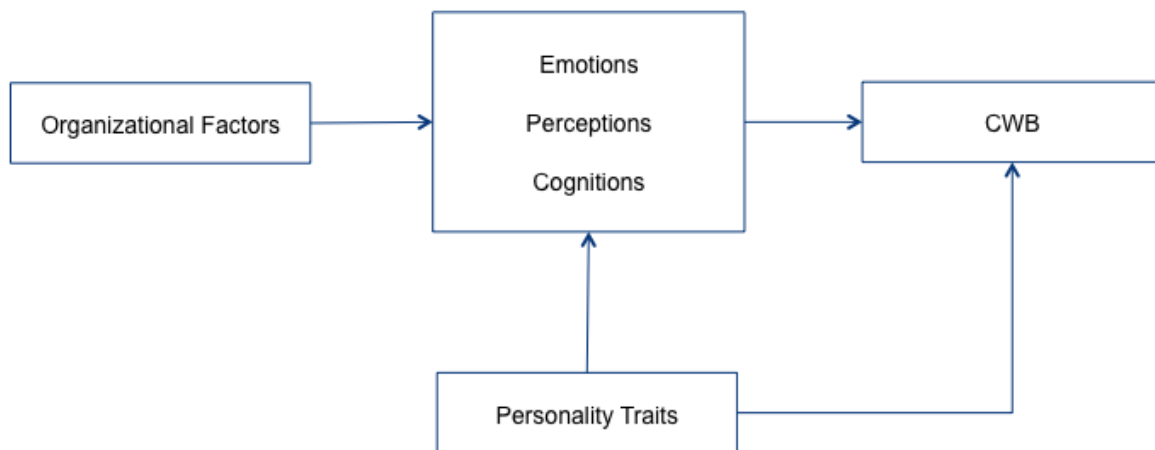
### **Influencing Factors on Counterproductive Work Behavior**

Empirical studies and theoretical models have identified a wide range of factors that influence CWB (e.g., Lau et al., 2003; Spector, 2011). Based on the research on work motivation, a set of individual factors and a set of organizational factors are identified that initiate work-related behavior (Ambrose and Kulik, 1999, Martinko et al., 2002, Lau et al., 2003). Both of these factors work in conjunction and reciprocally (Fleeson and Noffle, 2008). Mostly, individual and organizational factors are analyzed separately, but rarely have the interaction of these factors and the mechanisms behind CWB considered. It is important to understand how individual factors moderate the reactions to organizational conditions in order to create a constructive work environment and to improve personnel selection and development.

The antecedents of CWB can be divided into three situational variables: organizational factors, work factors, and contextual factors. Organizational factors are: organizational physical conditions, organizational climate, and employment conditions. Work factors are: job characteristics as well as supervisory and peer (Lau et al., 2003). Contextual factors are for example: employment rate and economic prosperity. Several studies emphasize the importance of organizational

justice and organizational climate and leadership as predictors of CWB (Ambrose and Kulik, 1999; Colquitt et al., 2001; Cohen-Charash and Spector, 2001). Because of their importance for predicting CWB this dissertation analyzes them more deeply and operationalizes these factors experimentally, as will be described later.

On the side of the individual factors a distinction can be made between personality traits, perceptions, cognitions, and affective responses (Spector, 2011). Personality traits could have a direct causal influence on CWB and an indirect one by affecting people's perceptions and cognitions, people's attributions to causes of events as well as an individual's emotional or affective responses, and the ability of a person to inhibit aggressive and impulsive behavior (Cullen and Sackett, 2003; Spector, 2011). The following Figure 1.1 illustrates the main influencing factors on CWB and their relationships.



**Figure 1.1: Influencing Factors on CWB**

Before the relevant individual factors for the dissertation are explained, the organizational factors which influence CWB and especially sabotage are specified.

### ***Organizational Factors***

On the side of the organizational factors of sabotage this dissertation focuses on the organizational culture as expressed by words (code of conduct) and by actions (firm behavior). In a laboratory experiment, the effectiveness of a code of conduct was analyzed by observing how the congruence or the dissonance of firm behavior with such a code influences collaboration and sabotage in teams. Such codes are an important element of modern business organizations (Cowton and Thompson, 2000). Overall, they should improve the work climate (Manley, 1991) and increase

organizational efficiency (Mezher et al., 2002). Research into the effectiveness of business codes has produced conflicting results because there are varying definitions of key terms of a code and deficiencies in the empirical data and methodologies used to analyze the effectiveness (Kaptein and Schwartz, 2008). Thus, there exists a theoretical and an empirical gap in this area. Especially, this dissertation considers the psychological forces, particularly need satisfaction, that enhance or diminish the integration of expressed norms in order to achieve a deeper understanding of misconduct by individuals (Deci and Ryan, 2000).

As a second organizational predictor of sabotage the dissertation considers organizational justice in two research papers. Thus, its relevance will be explained in more detail. Organizational justice, consisting of distributive, procedural, and interactional justice, is an often-quoted factor for predicting CWB. Studies have shown that justice perceptions result in variance of key attitudes and behaviors, including organizational commitment, trust in management, citizenship behavior, CWB, and task performance (see, for a meta-analytical review, Cohen-Charash and Spector, 2001; Colquitt et al., 2001). Individuals evaluate the fairness of distributions with respect to some distributive rules, the most common one being equity (Cohen, 1987). In laboratory experiments in the dissertation competitive environments in the form of a job promotion tournament were generated and it was analyzed how fairness in promotion procedures affects CWB in hierarchical relationships between supervisor and subordinate. This is of interest not only for research, which has not yet dedicated enough analysis to this issue in the context of promotion at work (Truxillo et al., 2004), but also for practitioners, who need to organize successful promotions in order to ensure that candidates selected for promotion will be capable of the required adaptation. The majority of research on fairness and personnel allocation has been conducted with regard to entry-level selection (e.g., Anderson et al., 2001; Bauer et al., 2001; Ispas et al., 2010; Moscoso and Salgado, 2004). Promotion is an important organizational procedure for employees too, as they manage their professional career depending on their perceived chances of moving upward within an organization (Kaplan and Ferris, 2001). Most of the research in this area considers how promotion characteristics, such as the criteria used for promotion, influence perceived fairness (e.g., Beehr et al., 2004). Further studies analyze how the perceived promotion fairness influences job satisfaction (e.g., García-izquierdo et al., 2012), performance and OCB (Gilliland, 1993, 1994),



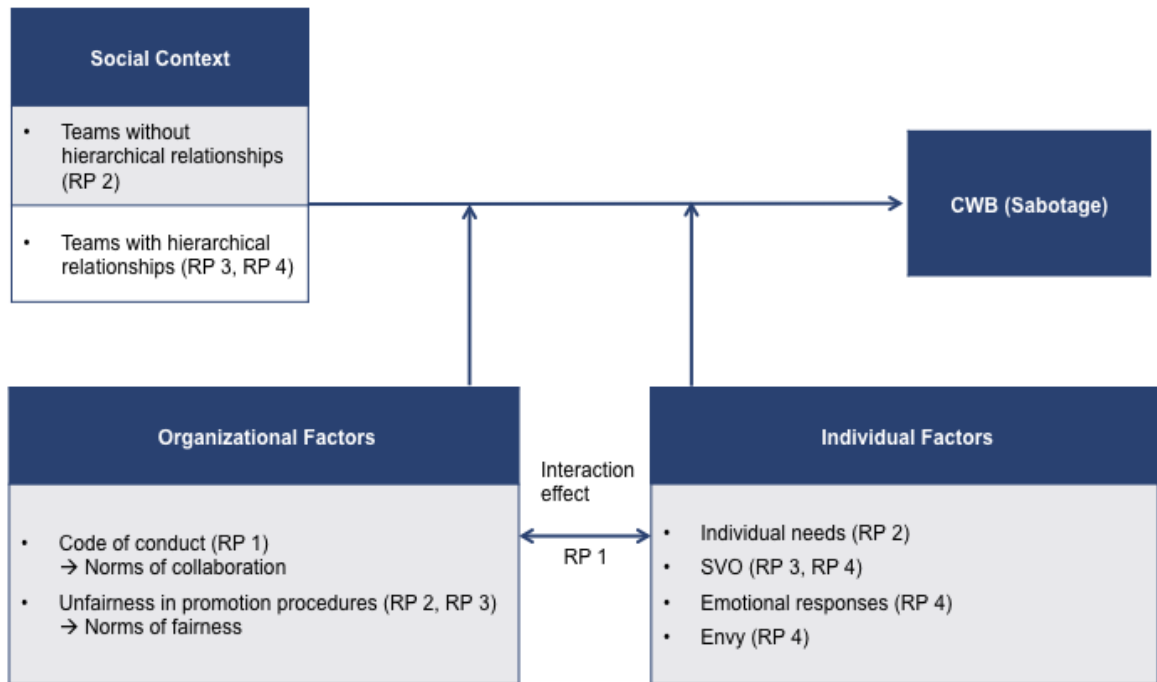
feelings of envy (Schaubroeck and Lam, 2004), discouragement (Johnson and Salmon, 2016) organizational commitment (Lemons and Jones, 2001) and other outcomes from fairness perceptions, which can be categorized as “soft” and “hard” outcomes (for a review, see Truxillo et al., 2004). Little research has studied the role of fairness in the context of promotion procedures and the individual differences in reactions to unfairness after the promotion decision.

### ***Individual Factors***

This dissertation captures individual factors which influence the tolerance for unfairness and which arise in unfair situations. One individual factor in this dissertation is social value orientation (SVO) as a measure for other-regarding behavior. Empirical findings indicate that SVO differentially affects the judgment regarding the evaluation of the fairness of outcome distributions (Anderson and Patterson, 2008). The dissertation differentiates between prosocial individuals (concerned with outcomes for both themselves and others) and proself individuals (concerned with their own outcome only). Further, envy and negative emotions as important factors influencing behavior in job promotions are analyzed. Conceptual work (e.g., Levine, 2010; Spector, 2011; Spector and Fox, 2002) as well as empirical studies (e.g., Fida et al., 2015; Greenidge and Coyne, 2014; Matta et al., 2014; Samnani et al., 2014) emphasizes the importance of emotions as moderator or mediator in CWB reactions. In this sense, CWB can be seen as an emotion-regulation mechanism (Matta et al., 2014). Envy especially arises in competitive situations (Fehr and Schmidt, 1999) and could motivate individuals to put more effort into their work as well as exhibiting harmful behavior toward the superior (Cohen-Charash and Mueller, 2007; Khan et al., 2014; Schaubroeck and Lam, 2004). Further, unfairness causes negative emotions in the form of people feeling distressed, frustrated, or angry (Tzafrir and Hareli, 2009). These negative emotions could result in negative behaviors toward the supervisor in the form of revenge (Skarlicki et al., 1999).

## 1.2 Research Model

The research model of the dissertation considers organizational and individual factors that are relevant for predicting CWB in the form of sabotage. The starting point for the research model is the social exchange between employees who work in teams without hierarchy and in teams with hierarchical relationships (a subordinate and a supervisor). Research paper 1 (RP 1) deepens the analysis of the interactional effect of organizational and individual factors on different types of CWB by reviewing experimental work in this area. In research paper 2 (RP 2) the focus is on organizational culture expressed by words and by actions. This factor is operationalized through a code of conduct as reminder of belief systems in an organization and the congruence of firm behavior with such a code. Especially, corporate norms are considered which are communicated to organizational members and should foster collaboration between team partners. Sabotage in this context is seen as work-related misbehavior in the form of misconduct. It is operationalized by not behaving collaboratively toward the team member in the form of not sharing information (omission) or by sharing destructive information (commission). Additionally, individual needs are captured that influence the integration of external regulations (autonomy and relatedness). In research paper 3 (RP 3) and research paper 4 (RP 4) organizational justice, as another factor that causes CWB, is analyzed. This factor is operationalized by job promotion procedures where fairness norms are violated. Sabotage as a reaction to unfair promotion is operationalized by punishment as a reciprocal act (negative reciprocity) on the side of the unpromoted person (subordinate) toward compensations offered by the promoted person (supervisor). Additionally, RP 4 considers individual factors that influence reactions to unfairness. These individual factors can be separated into individual characteristics, such as SVO and emotional responses. Sabotage as a reaction to unfair promotion is operationalized in the form of removing outcome of the supervisor in order to increase equity. The following Figure 1.2 illustrates the research model of the dissertation project.



**Figure 1.2: Research Model**

The overarching research model can be divided into four research questions. These are presented below.

### **Research Question 1**

Research question 1 (RQ 1) contributes to the understanding of how individual differences influence reactions to organizational factors. The question leans on the relevance of individual factors for predicting CWB and gives an integrated literature review of the main experimental results regarding the interactional effect of organizational and individual factors on CWB. Personality traits, emotions, and perceptions as relevant factors are considered. Further, the main organizational factors that are related to CWB are examined, differentiating between hard factors, such as payment schemes, and soft factors, such as leadership. Further, it is distinguished between different types of CWB that vary regarding the severity and the target. The first research question is:

*RQ 1: What are the key organizational and individual drivers of different types of CWB?*

## **Research Question 2**

Research question 2 (RQ 2) deals with ethical climate as an organizational factor which influences CWB. Collaboration and sabotage on a team level with two team members who work on the same hierarchical level is observed. The main aspect of teams is to share information in order to increase individual and team output. When analyzing teams the social context is relevant for predicting work behavior, and such a context is defined by the norms and values of the organization and the subgroups. An organization could enforce these norms and values by communicating them through a code of conduct and by practicing them. Therefore, RP 2 experimentally treats the effect of congruence (dissonance) of introduced norms and values, expressed through a code of conduct, and actual firm behavior on (non-) collaboration between team members. Based on Self-Determination Theory (Deci and Ryan, 1985, 1991), it is analyzed whether the sender of information wants to collaborate by sharing information that enhances the receiver's expected output or wants to compete by sharing output-decreasing information. The second research question is:

*RQ 2: How does the congruence or dissonance between norms expressed by a code of conduct and firm behavior influence collaboration in teams?*

## **Research Question 3**

Research question 3 (RQ 3) deals with organizational justice as an influencing factor of CWB and analyzes sabotage in the context of teams where the team members are in a hierarchical relationship (a supervisor and a subordinate). A promotion process creates this hierarchical relationship, where every individual is evaluated by his or her individual performance. As mentioned before, promotion tournaments are a way to motivate employees to exert a desired level of effort. Promotion characteristics, such as the fairness of the promotion process and the outcome, could have an influence on the relationship between the supervisor and the subordinate after the promotion tournament. It is analyzed how the violation of fairness norms in promotion procedures influences the behavior of the unpromoted person (the subordinate) and the promoted person (the supervisor). Based on Equity Theory (Adams, 1963,1965), it is observed whether the supervisor offsets

the unfairness through higher compensation to the subordinate. Further, it is explored how the subordinate reacts to the unfair promotion and the offered compensation, especially whether the subordinate punishes the supervisor in order to enforce the fairness norm and to procure a more fair distribution. This leads to the third research question:

*RQ 3: How does the violation of fairness norms in a job promotion decision influence collaborative behavior and punishment between supervisor and subordinate?*

#### **Research Question 4**

While in RQ 3 the behavior of both the subordinate and the supervisor is analyzed, in Research question 4 (RQ 4) the focus is on the behavior of the subordinate. Especially, this paper focuses on the individual traits and emotional responses that lead to higher performance or sabotage in order to decrease inequity. In this setting the supervisor does not have the opportunity to offset unfairness by offering higher compensation. Based on Equity Theory, it is analyzed whether unfairness in promotion procedures motivates subordinates to enhance performance or to sabotage the performance of the superior person. The fourth research question is:

*RQ 4: How do individual traits and emotional responses influence the reaction of employees who have to deal with the violation of fairness norms in a job promotion decision?*

Based on the research questions, the following Table 1.1 summarizes the constituent parts of the cumulative dissertation.

**Table 1.1. Overview of Research Papers**

Research Paper (RP)	Research Question (RQ)	Title	Authors
Introduction		Introductory overview of the dissertation project	Swetlana Dregert
RP 1	What are the key organizational and individual drivers of different types of CWB?	Counterproductive work behavior as a function of individual differences and organizational factors – A review of experimental findings	Swetlana Dregert
RP 2	How does the congruence or dissonance between norms expressed by a code of conduct and firm behavior influence collaboration in teams?	Collaboration in organizations: Do as I say or do as I do?	Ramji Balakrishnan, Swetlana Dregert, Peter Letmathe
RP 3	How does the violation of fairness norms in a job promotion decision influence collaborative behavior and punishment between supervisor and subordinate?	Consequences of unfair job promotions in organizations	Peter Bußwolder, Swetlana Dregert, Peter Letmathe
RP 4	How do individual traits and emotional responses influence the reaction of employees who have to deal with the violation of fairness norms in a job promotion decision?	The role of Individual traits and emotional responses in (unfair) promotion decisions – Results of a real-effort experiment	Swetlana Dregert, Peter Letmathe

## **2. Definition of Theoretical Constructs**

This chapter defines the main theoretical constructs on which the dissertation is based. Workplace sabotage as a form of CWB is defined in the context of tournaments and misconduct. Furthermore, justice and the related constructs of fairness and equity, as the main influencing factors on CWB, are explained. In particular, the different types of justice are presented. Next, the meaning of a code of conduct as another organizational factor is defined in the context of organizational misbehavior.

### **2.1 Workplace Sabotage**

Sabotage can be conceptualized as a rational behavior that stems from an individual's reaction to his or her environment (Analoui, 1995; DiBattista, 1996; Jermier, 1988). The sabotage literature suggests five possible motives: powerlessness, frustration, facilitation of work, boredom/fun, and injustice (see Ambrose et al., 2002). Based on the definition by Crino (1994), workplace sabotage can be seen as behavior intended to “damage, disrupt, or subvert the organization's operations for the personal purposes of the saboteur by creating unfavorable publicity, embarrassment, delays in production, damage to property, the destruction of working relationships, or the harming of employees or customers” (Crino, 1994, p. 312). Sabotage varies in terms of goal, target, and severity (Ambrose et al., 2002). Further, it can have two forms: active (commission) and passive (omission). Active sabotage (commission) is related to actions that directly harm co-workers or the organization; thus it has more malicious intentions than passive sabotage (omission), the latter stemming from ignorance of the effects of not acting.

From the experimental perspective, in tournament games and contests Harbring and Irlenbusch (2011) perceive the motives of sabotage behavior to be the increasing of the individual's ranking in order to win the contest. This can be done by increasing the individual's own performance or by diminishing the competitor's by negatively influencing the effectiveness of the competitor's efforts, or by increasing the competitor's cost of effort, or by denying the competitor access to resources (Chowdhury and Gürtler, 2015). It includes refusing to cooperate, hiding information, transferring false or misleading information, or destroying work tools needed by others (Harbring and Irlenbusch, 2011). Sabotage can seriously harm

an organization by not only destroying output but also by deterring agents from exerting productive effort. The anticipation of being sabotaged entails a discouragement effect on the players to apply productive effort (Harbring and Irlenbusch, 2011). In extreme cases, it may lead to an adverse selection of contestants, because talented players may not want to participate in the contest if they anticipate sabotage (Münster, 2007). In RP 3 and RP 4 consider sabotage in promotion situations in the form of harming behavior by influencing a competitor's effort and output in a negative way through punishing her/him or through destroying earned output.

Sabotage can also be seen in the context of organizational misbehavior (OMB) or misconduct when shared norms are violated. The dissertation project considers sabotage in this context as a form of work-related misbehavior, such as not sharing knowledge or supplying destructive information. According to Vardi and Wiener (1996), OMB is defined as intentional action that violates shared norms and expectations in the organization and/or core societal values, mores, and standards of proper conduct. It has to be separated from other constructs such as unethical behavior. Unethical behaviors are defined as acts that have harmful effects on others and are "either illegal or morally unacceptable to the larger community" (Jones, 1991, p. 367). RP 2 considers sabotage in the context of organizational misbehavior in the form that shared norms of a code of conduct are violated. This results in non-collaborative behavior, such as sharing no information (omission) or destructive information (commission).

## **2.2 Justice, Fairness and Equity**

This section reveals the relationship between fairness, justice, and equity, which constitute the basis of RP 3 and RP 4. Justice follows a code of standard and is related to conformity and righteousness (Cropanzano and Greenberg, 1997). Justice in organizational settings can be described as "focusing on the antecedents and consequences of two types of subjective perceptions: fairness of outcome distributions and fairness of procedures used to determine outcome distributions or allocations" (Colquitt et al., 2001, p. 425). The equity rule is the main criterion for defining fairness. The equity rule as an allocation rule has to be distinguished from the equality rule. Equality determines that each person gets equitable outcomes



regardless of the inputs (Leventhal, 1976). With the equity rule, fairness is judged in terms of whether reward and resources are distributed in accordance with recipients' contributions (Greenberg, 1990b; Leventhal, 1976). There are different theories which have been derived to test principles of justice in social interactions. One of these theories is the Equity Theory of Adams (1963,1965). Adams (1965) uses a social exchange framework to evaluate fairness and states that one way to determine whether an outcome is fair is to calculate the ratio of inputs and outputs compared to those of another relevant person. Fehr and Schmidt (1999) support this perspective by predicting that fairness judgments are based on social comparison and relative material payoffs.

In the early years of justice literature, scholars focused on the fairness of decision outcomes, defined as **distributive justice** (for historical reviews, see Byrne and Cropanzano, 2001; Greenberg, 1990b). The literature deals with the perceived fairness of outcomes e.g., pay selection, and promotion decisions (Cohen-Charash and Spector, 2001). Thibaut and Walker (1975) put forward the **procedural justice** hypothesis that disputants care as much about how their disputes are resolved as they do about the outcomes they receive. Research provides strong and widespread support for this hypothesis (see Folger and Cropanzano, 1998; Lind and Tyler, 1988; Tyler et al., 1997; Tyler and Blader, 2000, for reviews). Leventhal (1980) specified six formal criteria of fair procedures: consistency, bias suppression, accuracy, correctability, representativeness, and ethicality. In the context of promotion procedures, Arvey and Renz (1992) state that such procedures are perceived as fair when they are objective in the form that quantitative methods and formalized decision rules are used. Further, the amount of employee voice is an important structural feature of the decision-making process (Folger and Lewis, 1993; Nathan et al., 1991). The social aspects in procedural justice lead to the differentiation between procedural and **interactional justice** and can be explained by Social Exchange Theory (Blau, 1964). This theory suggests that supportive behaviors by leadership lead to positive reciprocity and can then be expressed through positive behaviors. This is endorsed by findings such as the positive relationship between justice perceptions and citizenship behavior (Masterson et al., 2000; Organ, 1990).

## **2.3 Code of Conduct**

RP 2 analyzes the effect of social norms, expressed by a code of conduct, on non-collaborative behavior. Firms try to establish social norms which promote knowledge sharing (Festré, 2010). Such norm systems can be seen as reminders of a firm's belief system (Simons, 1995) and are often operationalized as codes of conduct (e.g., Somers, 2001), which work as non-monetary regulations. Belief systems are defined as "the explicit set of organizational definitions that senior managers communicate formally and reinforce systematically to provide basic values, purpose, and direction for the organization" (Simons, 1995, p. 34). Codes are a part of modern business organizations (Cowton and Thompson, 2000). They pursue, for example, the goal to improve the company's reputation (Bowie, 1990), increase organizational efficiency (Mezher et al., 2002), and improve the work climate (Manley, 1991). Codes share similar characteristics, as they are a written and formal document and consist of ethical guidelines and principles to be followed by employees (Yallop, 2012). The behavioral regulations of a code can have different objects and levels. The object can be internal (i.e. behavior towards other co-workers) or external (i.e., behavior towards stakeholders and society in general). Summarized by Kaptein and Schwartz (2008), the level of behavioral regulations can range from general to specific (i.e. credo, beliefs, principles, values, responsibilities, guidelines, procedures, standards and rules).

## **3. Current State of Research and Research Gaps**

The following section integrates the research questions of the dissertation into the existing research area. Based on the research questions sabotage is considered in three areas: (1) tournaments, (2) misconduct and (3) justice and promotion. First, the predictors of sabotage in the workplace within the context of tournaments, such as monetary incentive schemes and tournament design, are described. The next section responds to factors considering the organizational climate, particularly the existence of a code of conduct and its influence on misconduct. Further, justice in promotion decisions is considered as an influencing factor of CWB. Finally, the existing research gaps are summarized.

### 3.1 Sabotage in Contests and Tournaments

This section considers sabotage research in the context of contests and tournaments. This field is relevant for this dissertation, because in RP 3 and RP 4 also a tournament setting in the promotion context is used, where the participants have to perform a task and, based on the performance relative to the team members, one of them will be promoted. In general, empirical findings show that sabotage as the opposite of help increases if the compensation depends on relative performance (e.g., Carpenter et al., 2010; Drago and Garvey, 1998; Falk et al., 2008b; Garicano and Palacios-Huerta, 2005; Gürtler et al., 2013; Harbring and Irlenbusch, 2005, 2008, 2011; Harbring et al., 2007; Lazear, 1989; Vandegrift and Yavas, 2010). Similar results have been shown in a real-effort experiment by Carpenter et al. (2010). Charness et al. (2014) also show that rank feedback increases sabotage and seems to encourage competitive individuals to invest in status-seeking activities.

Chowdhury and Gürtler (2015) give an overview of studies examining sabotage in the context of contests, where players have the opportunity to increase effort and expend resources to improve their own probability of winning the prize, or they have the opportunity to sabotage and expend resources to reduce the probability of another contestant winning the same prize. The targets of sabotage in a contest with heterogeneous players are those with the better performance and the more talented players (Münster, 2007; Vandegrift and Yavas, 2010). So players may decide to avoid a leading position (Gürtler and Münster, 2010; Chen, 2003), underreport performances (Carpenter et al., 2010), or even engage in self-sabotage (Gürtler and Münster, 2013) only to avoid being the victim of sabotage. Similar results also hold for competition in promotion tournaments, where more able members are subject to more attacks (Chen, 2003).

Harbring and Irlenbusch and their co-authors (2005, 2007, 2008, 2011) have provided a large share of the findings in this area. The experiments give important hints on how to develop the work environment to reduce or avoid sabotage. The authors concentrate on factors of tournament design, such as the fraction of winner and loser prizes, heterogeneity of players, compensation schemes (piece rates), tournament size, communication, and framing, as possible factors which influence

sabotage in the workplace. The experiments show that sabotage significantly depends on tournament design and occurs when it is easily feasible.

In line with the Theory of Inequity Aversion (Fehr and Schmidt, 1999) several studies show that sabotage activities increase when the spread between winner and loser prizes widens in order to reduce payoff differences (see Falk et al., 2008b; Harbring and Irlenbusch, 2008; Harbring and Irlenbusch, 2011; Vandegrift and Yavas, 2010). In contrast it was found that a balanced fraction of winner and loser prizes fosters productive activities (Harbring and Irlenbusch, 2008).

Harbring et al. (2007) further test sabotage behavior in corporate contests with heterogeneous players (underdogs and favorites). The findings show that the frequency of sabotage increases because of the existence of asymmetries. So not only is the own type of player relevant for the level of sabotage but also the composition of different types of players in a contest.

Additionally, Harbring and Irlenbusch (2011) tested sabotage in a more realistic work setting. To generate a realistic setting, the authors choose repeated tournaments between the same agents. Further, they frame the setting by using the words “employee“, “effort“ and “sabotage“. Moreover, the participants have the choice of communicating or not. Results indicate that framing the situation as an employment context and explicitly using the term “sabotage“ reduce sabotage. Further, the possibility to chat enhances cooperation but only in repeated interaction.

Organizations can restrict sabotage by choosing the right policies. These policies should reduce the marginal benefit from sabotaging the opponents or increase the marginal cost of sabotage (Chowdhury and Gürtler, 2015). This is possible by reducing prize spreads (see Harbring and Irlenbusch, 2005, 2008, 2011; Vandegrift and Yavas, 2010), by increasing the number of contestants (Konrad, 2000), or by increasing threat of retaliation (Harbring et al., 2007; Vandegrift and Yavas, 2010). Further, there are psychological costs of sabotaging others. These are higher if the contestants have been treated well by the contest organizer than if they have not (Harbring and Irlenbusch, 2005).

### **3.2 Misconduct: Effectiveness of a Code of Conduct**

This section considers the effectiveness of a code of conduct for preventing sabotage behavior as a form of misconduct. In the existing literature there is a broad discussion of whether a code of conduct produces (more) ethical and consistent behavior (Cowton and Thompson, 2000; Farrell et al. 2002; Kaptein and Schwartz 2008; Kaptein, 2011; Somers, 2001; Weaver, 2001). A review of existing literature by Kaptein (2011) identifies at least 79 empirical studies that examine the effectiveness of business codes. The results of these studies are mixed and show that a majority present weak or no significant effects. Also laboratory experiments show mixed results regarding the effectiveness of a code of conduct. Lauer et al. (2008) demonstrate a positive influence of normative codes of conduct on the efficiency of team production. Hegarty and Sims (1979) as well as Clark and Leonard (1998) support the assumption that formal codes of ethics will inhibit unethical decision making behavior. Furthermore, Weaver (1995) shows that the design of a code of conduct increases perceptions of procedural justice when reasons for the chosen code content are given. Also Ariely (2012) emphasizes that when people are reminded of ethical standards they behave more honorably in situations where they are tempted to be dishonest. Other experiments show no significant effects of a code of conduct on ethical behavior such as lying and stealing (Umphress et al., 2009), unethical behavior (Laczniak and Inderrieden, 1987), and fraud in financial reporting (Brief et al., 1996).

The effectiveness of a code mainly depends on its objective and its content (see, for a review, Schwartz, 2004). The objectives differ regarding their complexity and their possibility of being influenced. The more difficult it is to realize the objectives of a code, the greater the chance that it will be ineffective (Schwartz, 2004). Another important aspect is that codes are presumably ineffective unless distributed to employees (Weaver et al., 1999). Therefore, Sims (1991) argues that employees must be familiar with the content of the code before the code can impact their behavior. Several authors have suggested that enforcement of the code by the senior management is essential for the effectiveness of a code (e.g., Gibbs, 2003, Messmer, 2003; Sweeney and Siers, 1990). Authors capture how management's support for ethical behavior influences employees' behavior in the context of Cognitive Dissonance Theory. There is a link between ethical culture supported by

the management and job satisfaction and commitment (Koh and Boo, 2001; Viswesvaran and Deshpande, 1996). Adam and Rachman-Moore (2004) suggest that informal methods to implement codes have the highest effect on employee attitude toward codes and commitment. For instance, managers should set an example by behaving in line with the norms of an organization.

### **3.3 Fairness in Promotion Decisions**

In the next section a broad overview concerning the reactions of employees to (perceived) unfairness is given. Based on that, the findings concerning unfairness in promotion outcomes and procedures are summarized.

#### **3.3.1 Fairness Perceptions and Outcomes**

The sabotage literature in the context of different tournament designs and misconduct having been reviewed, the next section will give a literature overview regarding the influence of justice in promotion procedures on sabotage, which is the topic of RP 3 and RP 4. The major interest of justice research has primarily been in the outcomes of fairness. Perceived fairness in organizations has been associated with job satisfaction, organizational commitment, performance, citizenship behavior, and turnover (Colquitt et al., 2001). There has been a shift in research towards focusing on destructive reactions to injustice. A number of scholars have theorized about how different types and combinations of injustice lead to dysfunctional consequences such as aggression (Folger and Skarlicki, 1997, 1998; Greenberg and Alge, 1998), violence (Folger and Baron, 1996; Neuman and Baron, 1998), theft and stealing (Greenberg, 1990a, 1993b), as well as antisocial behavior (Giacalone and Greenberg, 1997). Injustice is also a frequently cited cause of sabotage (Crino, 1994; Crino and Leap, 1989; DiBattista, 1989, 1996; Neuman and Baron, 1998; Robinson and Bennett, 1997; Sieh, 1987; Folger and Skarlicki, 1997; Tucker, 1993). Drawing on research into workplace deviance, Ambrose et al. (2002) examine the relationship between the type of injustice (distributive, procedural, or interaction) and the goal, target, and severity of sabotage. The results generally show that injustice was the most common cause of sabotage. Further, when the source of injustice was interactional, individuals were more likely to engage in retaliation, and when the source of injustice was distributive, individuals were more likely to engage

in equity restoration. Also, Ambrose et al. (2002) found an additive effect of distributive, procedural, and interactional justice on the severity of sabotage.

Besides the effects of justice on CWB it is important to understand which factors influence justice perceptions. Justice research clarifies that there are both structural and social elements that affect justice perceptions (Brockner et al., 2001; Cropanzano and Greenberg, 1997; Folger and Skarlicki, 1998; Greenberg, 1993a). Early distributive justice research has been focused on the outcomes of perceived equity (Greenberg, 1988; Mowday, 1983). But the focus of research has shifted toward procedural justice (for a historical review, see Cropanzano and Randall, 1993). Thibaut and Walker (1975) demonstrated that fair procedures increased individuals' satisfaction with unfavorable outcomes. A number of studies indicate that people accept even negative outcomes if the procedure behind outcome distribution is fair (e.g., Folger, 1977; Thibaut and Walker, 1975; Tyler and Caine, 1981; Walker et al., 1974). Evidence for the fair process effect has also been found in laboratory experiments (e.g., Folger et al., 1979, 1983; Greenberg, 1987, 1993a; Lind et al., 1980, 1990; Van den Bos et al., 1998). Moreover, individuals respond not only to outcomes and procedures, but also to interpersonal interactions. The third type of justice, interactional justice, refers to the quality of the interpersonal interaction between individuals. When compared to distributive justice, and perhaps procedural justice, interactional justice is an especially efficacious predictor of reactions to supervisors and to the immediate work environment (Malatesta and Byrne, 1997; Masterson et al., 2000).

Experimental studies also show that fair intentions play a major role in the perception of kindness (Brandts and Solà, 2001; Falk et al., 2008a; Offerman, 2002). People are willing to reward friendly actions and to punish hostile actions. There are several experimental studies that support the perspective that such reciprocal behavior motivates the action of individuals in experimental Game Theory, such as the public goods game, the ultimatum game, as well as the trust and gift exchange game (see, for a review, Camerer and Fehr, 2004; Charness and Rabin, 2002; Falk and Fischbacher, 2006; Fehr and Gächter, 2000b).

### 3.3.2 Fairness in Promotion Systems

The following section connects sabotage and fairness in promotion decisions. Summarized by García-Izquierdo et al. (2012) research in the area of fairness in promotion decisions indicates that perceptions of fairness are influenced by the type of criteria used to make promotion decisions and the promotion characteristics (e.g., Allen, 1997; Beehr and Juntunen, 1990; Kaplan and Ferris, 2001). There is, however, less research which examines potential antecedents of perceptions of justice regarding promotion decisions. These antecedents include, for example, process characteristics, leader-member exchange, and organizational climate. Gilliland (1993) presented an organizational justice-based model of applicant reactions based on Organizational Justice Theory (e.g., Deutsch, 1975; Leventhal, 1980), proposing that perceptions of the fairness of selection procedures would lead to important organizational and individual outcomes. In the context of promotions, procedural justice refers to perceived fairness of the promotion system and rules, whereas distributive justice refers to perceived fairness of the distribution of promotions themselves (Gilliland, 1993). According to the model, perceptions of process and outcome fairness affect reactions and behaviors during and after hiring (e.g., job acceptance, self-efficacy, litigation). Gilliland (1993) states that perceptions of procedural justice (process fairness) of selection procedures derive from formal characteristics of the procedures (e.g., job-relatedness), explanations for procedures (e.g., timely feedback), and interpersonal treatment of applicants (e.g., two-way communication). Perceptions of distributive justice (outcome fairness) derive from equity of outcomes, equality of outcomes, and perceived need for outcomes (Deutsch, 1975). Studies capture the effect of promotion characteristics on job satisfaction (García-Izquierdo et al., 2012) and perception of fairness (Kaplan and Ferris, 2001, Kataoka et al., 2006, Ferris et al., 1992, Beehr et al., 2004). The results show that participants who perceived organizational promotion methods to be transparent and based on performance reported a high level of perceived procedural justice. Non-performance promotion criteria are, for example, luck or favoritism (Ferris et al., 1992).

Several studies analyze the effect of perceived fairness in promotion decisions on behavior, such as retaliation (Brebels et al., 2008), turnover intention (Nawaz and Pangil, 2016), absence (Patchen, 1960), perceptions of discriminations



(Harris et al., 2004), and organizational commitment (Lemons and Jones, 2001). For example, Lemons and Jones (2001) found in a survey-based study with working students that perceived fairness of promotion decisions increases organizational commitment, which refers to acceptance of goals and values of the organization, the willingness to exert effort, and the desire to remain a member of the organization. Various other studies on procedural justice show that the perceived fairness of personnel procedures in organizational decisions influences the satisfaction with the results of the decision (e.g., Deutsch, 1975; Thibaut and Walker, 1975) and various other organizational outcomes (see meta-analysis by Colquitt et al., 2001). Bell et al. (2006) also found in a survey-based study that individuals' perceptions of justice may result from expected, not just experienced, justice (see also, e.g., Shapiro and Kirkman, 2001; Gilliland, 1994). Thus, justice perceptions have a greater influence on applicants' affective and cognitive states when expectations of justice are high.

Some studies also consider personal factors in the perception of fairness in promotion. Ambrose and Cropanzano (2003) analyze in a survey-based study with untenured management professors how individual attitudes influence perceived fairness over time. Other authors identify gender as a relevant individual difference for fairness perceptions (Bobocel and Farrell, 1996; Saal and Moore, 1993) as well as self-identity and regulatory focus (Johnson et al., 2010). Further Burnett et al. (2009) test in a field study how personality determines employees' response to perceptions of justice and organizational rewards. They looked at conscientiousness and extraversion and found positive work reactions for highly conscientious and extravert individuals. In the meta-analysis Cohen-Charash and Spector (2001) analyze the influence of individual factors, such as negative affectivity and self-esteem, on the reaction to injustice. For example, they found that negative affectivity is negatively related to perceptions of procedural and interactional justice. Cohen-Charash and Muller (2007) as well as Khan et al. (2014) found that in unfair situations emotional responses, such as envy, influence CWB and especially the target of CWB. For example, based on Social Exchange Theory, unfairness and envy lead to interpersonal harming behavior. Further studies emphasize that negative emotions arise in unfair situations, and CWB then works as a mechanism to regulate emotions (Bechtoldt et al., 2007; Khan et al., 2013; Krischer et al., 2010; Matta et al., 2014).

### **3.4 Summary and Identification of Research Gaps**

The next section summarizes the main relevant findings from the literature and exposes areas of further research.

#### **Sabotage in Tournaments**

- A competitive environment (e.g., rank feedback) could create incentives to sabotage.
- The more talented subjects and subjects with better performance are the target of sabotage.
- A higher spread in winner and loser prizes enhances destructive activities in the form of sabotage.

#### **Sabotage in the Context of Justice and Promotion**

- The source of injustice determines the target of sabotage.
- Transparent promotion based on performance is perceived to be fairer.
- Fair procedures increase an individual's satisfaction with unfavorable outcomes (fair process effect).
- Individual traits and emotional responses influence perceived fairness.

#### **Effectiveness of a Code of Conduct**

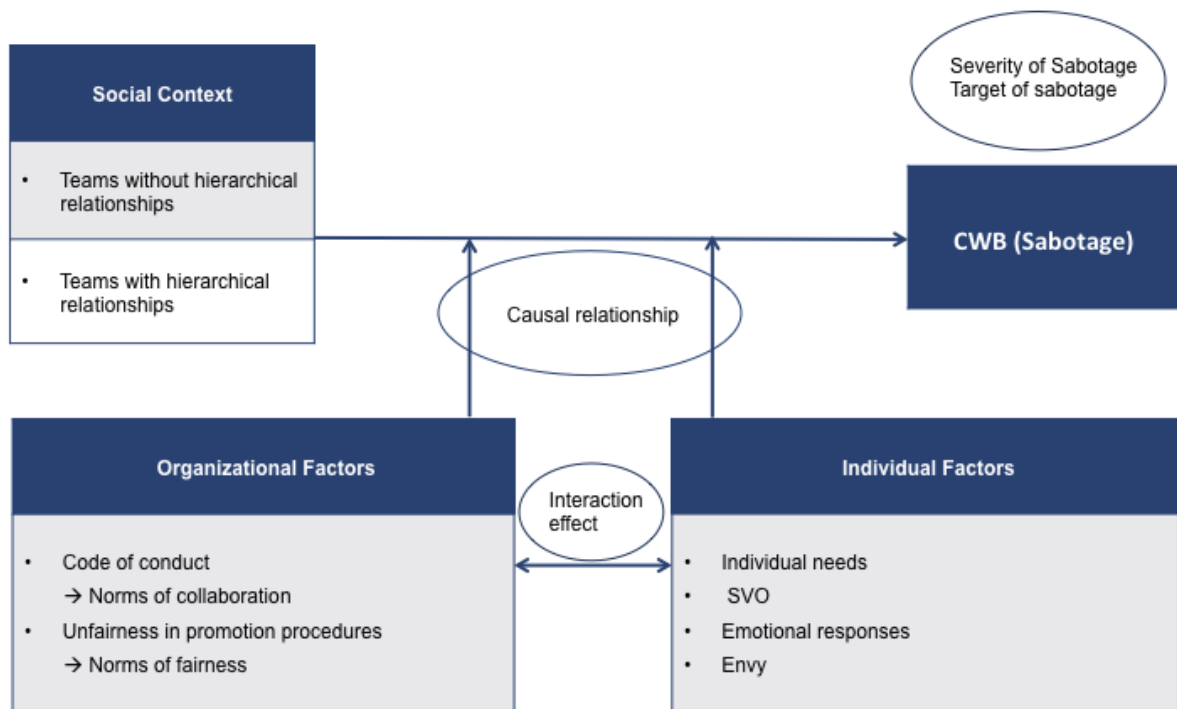
- The enforcement of the code of conduct by the management increases its effectiveness.
- A clear definition of the object and the content of a code of conduct enhance the code's effectiveness.

The literature review shows that from the experimental side, sabotage has been mainly analyzed in the context of tournaments and contests. Research especially considers monetary incentives and tournament design. In the context of promotion tournaments the focus lies on studies which analyze the effect of promotion characteristics on the perceived fairness. Thus, there is a need for a deeper understanding of the causal link between fairness perceptions in a promotion setting and actual behavior after promotion decisions. Further studies analyze how the

perceived fairness influences the satisfaction with the promotion decision, performance, and OCB. Also fairness in combination with CWB was analyzed but justice literature is mostly based on surveys and is focused on relatively few dysfunctional behaviors. This is because dysfunctional behavior is often difficult to observe in the workplace; thus, the analysis of the darker side of behavior is more conceptual. This emphasizes the importance of experimental work in this area to make such behavior and its causes more observable. Especially it is important to deepen the understanding of why people sabotage and thus, which psychological mechanisms underlie such behavior.

Moreover, only few studies have considered individual factors and emotional responses in the context of CWB. Several studies analyze the influence of individual factors on perceptions of fairness but not on the consequences of perceived unfairness. Further, few authors differentiate between the targets of CWB. Negative reactions from promotion can be directed against the organization or can be interpersonally related to the winner of the promotion (Ambrose et al., 2002), which could depend on the attribution of the unfairness.

Also, sabotage behavior in the context of misconduct reveals some potential research gaps. Existing studies in this research field analyze under which conditions a code of conduct is effective, but not the consequences of ineffective codes in the form of sabotage. For example, Kaptein (2011) found that a code of conduct significantly suppresses unethical behavior when the code is well communicated and enforced by senior management and superiors. The question is: what are the consequences of a dissonance between a code and firm behavior? Further, as in the case of unfairness, a deeper analysis of the individual factors and especially the psychological mechanisms behind the willingness to follow norms expressed in a code is necessary in order to understand and influence individual behavior. The areas of further research are summarized in Figure 1.3.



**Figure 1.3: Research Gaps**

## 4. Theoretical Background

Such as mentioned in the introduction, individual behavior depends on organizational and personality-related factors. Moreover, the social context and the role of social norms guide an individual's behavior. In this chapter the role of collaboration norms in teams and fairness norms in promotion procedures is explained. Furthermore, the main related theories are captured, which help to understand how individuals react to organizational factors, such as ethical climate and justice, and how such reaction is influenced by individual differences, such as emotions (section 4.4).

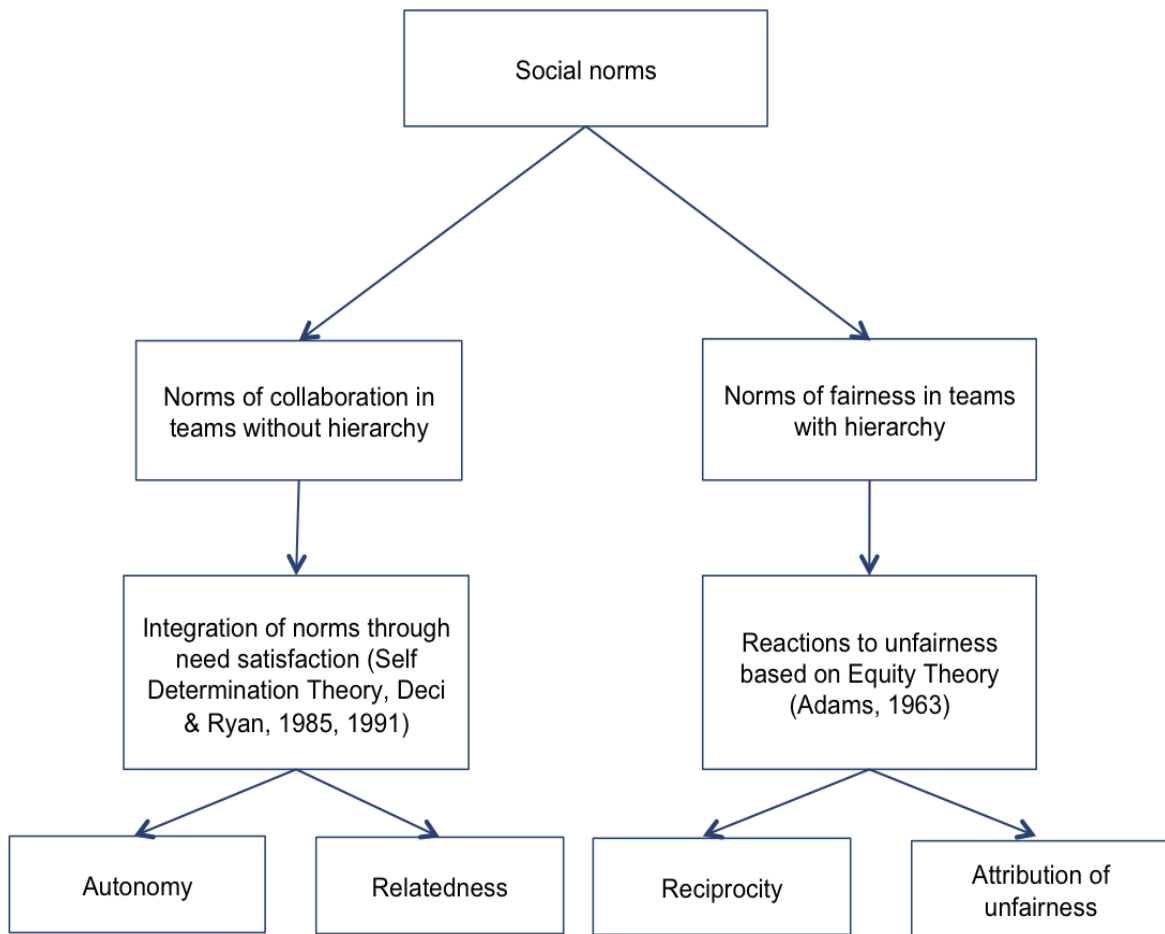
### 4.1 Social Norms and Social Context

Sherif (1936) defines norms as jointly negotiated rules for social behavior. Social norms are shared understandings about actions that are obligatory, permitted, or forbidden (Crawford and Ostrom, 1995; Cummins, 1998). Norms are a part of a complex set of factors that help to produce choices (Sunstein, 1996). Thus, a preference for an action is partly a function of social norms as well as the agent's attitude toward those norms (Sunstein, 1996). Consequently, individual factors influence norm-conformance. To enforce a social norm (e.g., fair distributions)

people are willing to punish those who do not obey the norm at a cost to themselves (Fehr and Gächter, 2000a). People in exchange relationships are, based on distributive justice norm, sensitive to the balance of inputs and outcomes in the relationship (Clark, 1984, Clark and Pataki, 1995). Fair treatment from a manager or the organization creates a closer social exchange relationship in which the employee repays the manager or the organization with OCB or a higher performance (Colquitt et al., 2001; Cropanzano et al., 2001; Greenberg, 1988).

Norms are activated in different situations (Berkowitz, 1972; McKirnan, 1980, Schwartz, 1977). Whether a norm guides behavior of individuals depends on which norm is activated in a certain setting. Thus, norms direct behavior when they are made salient in the situation (Cialdini et al., 1990, 1991), for example, through norm violation (Krupka and Weber, 2009). Every situation has a multiplicity of general norms and situational cues that can trigger the appropriate behavior for that situation (Staub, 1972). Norms help a person to act effectively to reach her or his goals and to build and maintain relationships with others as well as to maintain self-image. Individuals conform to norms based on the informational influence and the normative influence. Norms can derive from what others do (descriptive norms); thus, watching others provides information about what is normal (Gilbert, 1989; Stiff, 1994). Other norms are based on the moral rules of a group, such as socially responsible behavior and reciprocity. They are perceptions of what most people approve or disapprove of (Cialdini et al., 1991). In accordance with the informational influence, individuals are motivated to conform because they want to make accurate and valid judgments, while in the case of normative influence conformity fulfills the goal of maintaining social relationships (Deutsch and Gerard, 1955). Norms are considered from two perspectives: The effect of norms of collaboration expressed in a code of conduct based on Self-Determination Theory (SDT) (Deci and Ryan, 1985, 1991) and fairness norms in hierarchical relationships based on Equity Theory (Adams, 1963). Based on SDT, in order to follow social norms the satisfaction of needs, such as autonomy and relatedness, is relevant to enhance self-determination and finally to reach a higher integration of norms (Deci et al., 1994; Deci and Ryan, 2000). On the side of fairness norms Equity Theory (Adams, 1963) helps to understand an individual's reaction. To analyze the effect of violation of fairness norms by the organization in a promotion setting, reciprocity and harmful behavior as a norm enforcement device is considered. Additionally, an individual's

reaction to unfairness depends on the attribution of such toward the organization or toward a person. Thus, also Attribution Theory (Weiner, 1995) is explained. Figure 1.4 illustrates the captured theoretical constructs.



**Figure 1.4: Theoretical Framework**

## 4.2 Norms of Collaboration in Teams and Self-Determination Theory

In RP 2 the effect of corporate norms, expressed by a code of conduct, on the willingness to share and to accept information is analyzed. Firms try to establish social norms which promote collaboration. Such norm systems can be interpreted as reminders of a firm's belief system (Simons, 1995) and are often operationalized as codes of conduct (e.g., Somers, 2001). Based on SDT it is analyzed when a code of conduct and the congruence or dissonance between a firm's behavior and such a code leads to (non-) collaborative behavior. SDT assumes that individuals naturally tend to internalize the values and norms of their social groups (Deci and Ryan, 2000). The theory considers the quality of motivation by distinguishing between different types of motivation, particularly autonomous motivation and

controlled motivation, which could enhance the prediction of knowledge-sharing behavior (Gagné, 2009). The type and the strength of motivation mainly depend on the satisfaction of needs, such as the need for autonomy and the need for relatedness. Need satisfaction enhances intrinsically motivated behavior and the integration of extrinsic regulations (Deci and Ryan, 2000). Autonomy refers to the desire to have control over one's own choices and to perform activities that are concordant with one's own sense of self. Relatedness is based on the desire to feel connected to a social group and refers to other-regarding behavior (Deci and Ryan, 2000).

The theory also addresses the social context that enhances or diminishes the different types of motivation. When internalization occurs in a social context that supports self-determination, the external regulations are more likely to be integrated. Self-determined activities have been referred to as an internally perceived locus of causality (Deci et al., 1994). Based on Attribution Theory (Weiner, 1995), providing choice can enhance the feeling of internal locus of control and thus satisfies the need for autonomy. Further, intrinsic motivation will be more likely to occur in contexts characterized by a sense of secure relatedness (Ryan and La Guardia, 2000) and by coherence or consistency between one's behavior and one's feelings about the activity (Deci et al., 1994). In consequence, people who follow intrinsic motives are more likely to show collaborative behavior and to help others (Gagné, 2009). As a consequence for the hypotheses in RP 2, it can be argued that shared norms through codes of conduct could provide a general relatedness that is strengthened through concordant firm behavior. In contrast, dissonance between code and firm behavior could incur uncertainty and distrust, which negatively influence relatedness and the motivation to follow the code.

### **4.3 Norms of Fairness and Equity Theory**

The dissertation responds to Equity Theory (Adams, 1963,1965) in order to explain the reactions of individuals to unfair promotion decisions (RP 3, RP 4). Adams (1965) used the Social Exchange Theory by Blau (1964) to evaluate fairness of outcomes by looking at the input-output ratio of an individual compared to a comparative other. Equity Theory is the basis for exchange relationships, where equity is one of the most common distributive norms by which individuals evaluate distributions of outcomes.

Other models concerning distributional preferences that are related to Equity Theory are exemplified by Loewenstein et al. (1989), Bolton and Ockenfels (2000), and Fehr and Schmidt (1999). These models assume that people prefer to minimize the difference between their own monetary payoffs and those of other people (inequity aversion). Generally, individuals are willing to share payoffs to make results more equal. Liebe and Tutic (2010) argue that actors in a more favorable position act in a socially responsible way towards others in a less favorable position. For example, the authors found in a dictator game that the higher the status of the dictator, the more she or he donates. Beyond that, Equity Theory (Adams, 1963) assumes that subjects are concerned not only about the absolute amount of money they receive but also about their relative standing compared to others and also the input (e.g., effort), which individuals invest to gain the outcome compared to another person. Based on that, in order to perceive fairness, people should receive rewards that are consistent with inputs which they contribute to a distribution situation, relative to a referent person. Inputs in a selection situation can be self-perceptions of ability or qualifications for the job. Adams (1963) states that when there exists (perceived) unfairness people try to reduce it by either trying to inhibit the performance of others or by increasing their own effort in order to enhance their own performance (see also Erber and Tesser, 1994). This could explain behavior in a promotion setting, where the supervisor earns the status in an unfair manner in the sense that worse performance (input) leads to a higher position (output). Injustice could be a main common cause of sabotage behavior as a reaction to unfair promotion decisions. The goal of sabotage is an attempt to restore equity, that is, to compensate for an outcome that was deserved but not received (Ambrose et al., 2002).

#### **4.3.1 Reciprocity**

RP 3 observes a hierarchical relationship between subordinate and supervisor where the subordinate can react reciprocally to the compensation offered by the supervisor in an extended dictator game. It can be predicted that the subordinate will behave reciprocally to foster fairness in the sense of Equity Theory. Such reciprocity models assume that the desire to raise or lower others' payoffs depends on how fairly those others are behaving (Falk and Fischbacher, 2006). Reciprocity



is a form of social preferences. Social preferences refer to how people rank different allocations of material payoffs to themselves and others (Camerer and Fehr, 2004). According to the Theory of Reciprocity of Falk and Fischbacher (2006), a reciprocal action is modeled as the behavioral response to an action that is perceived as either kind or unkind. The central part of the theory deals with the question of how people evaluate the kindness of an action. Ackermann et al. (2016) emphasize that social preferences are not unconditional and change when individuals get information about the intentions of their interaction partner. Experimental studies support the perspective that fair intentions play a major role for the perception of kindness (Brandts and Solà, 2001; Falk et al., 2008a; Offerman, 2002). Such social preferences can have large effects on the regularities of social life and, in particular, on the enforcement of social norms (Camerer and Fehr, 2004; Fehr and Gächter, 2000a). Thus, people are willing to reward friendly actions and to punish hostile actions although the reward or punishment causes a net reduction in the material payoff of those who reward or punish. For example, people who dislike inequality are willing to take costly actions to reduce it (Falk and Fischbacher, 2006). However, Falk and Fischbacher (2006) also argue that positive feelings toward another subject can lead people to be unwilling to harm that subject in pursuit of difference aversion.

#### **4.3.2 Attribution of Unfairness**

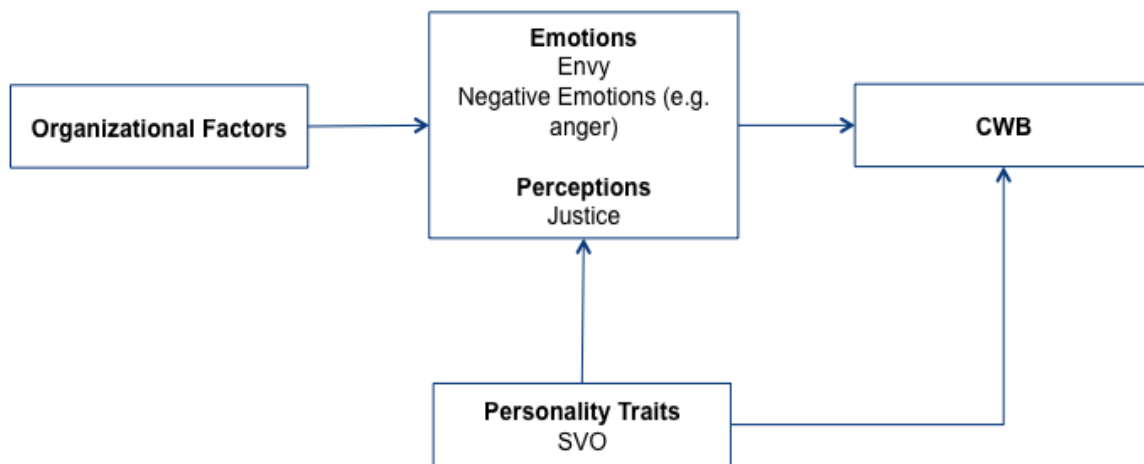
This dissertation uses the Organizational Justice and Attribution Theory frameworks to understand the processes by which applicants perceive and react to selection procedures and decisions. In this context, Heider's Attribution Theory (Heider, 1958) could help to explain whether unfairness in the promotion will be attributed to the organization or rather to the individual who is unfairly promoted. Theoretical models consider the role of fairness intentions behind behavior (e.g., Dufwenberg and Kirchsteiger, 2004; Falk and Fischbacher, 2006; Rabin, 1993). Falk et al. (2008a) experimentally endorse that the attribution of fairness intentions is important both in the domain of negatively reciprocal behavior and in the domain of positively reciprocal behavior. Attributions are likely to be very important in selection contexts (e.g., Gilliland, 1993; Lounsbury et al., 1989). According to the Theory of Social Preferences, humans prefer a fair distribution of payoffs. But not only the outcome

itself is relevant but also the cause of the outcome. The causal search for outcomes arises when the outcome is unexpected, has a high importance, or is negatively evaluated. The causal search leads then to casual attribution.

Attributional information is the basis for justice-related judgment (Weiner, 2006). The causes of outcomes can be characterized according to locus (internal vs. external), controllability (controllable vs. uncontrollable), and stability (stable vs. unstable). Attribution Theory predicts that when the justice rules are satisfied, individuals are more likely to attribute the cause of their events to internal, stable, and controllable dimensions. In contrast, when justice rules are violated, individuals are more likely to search for external sources or attribute the cause of events to a person (Ployhart and Harold, 2004). To attribute outcomes to a person, it is crucial whether a person thinks that the other is responsible for the outcomes. Controllability influences the allocation of responsibility. It causes emotions such as guilt, shame, pity, anger, and gratitude. If the non-promoted employee thinks that the organization was unjust in promoting others, she or he is more likely to react negatively (Tzafir and Hareli, 2009).

#### **4.4 Interaction of Organizational and Individual Factors**

Such as mentioned in chapter 1, research on work motivation identified a set of individual and organizational factors that initiate work-related behavior (Ambrose and Kulik, 1999, Lau et al., 2003; Martinko et al., 2002). On the side of the individual factors it can be distinguished between personality traits, perceptions, cognitions, and emotional responses (Spector, 2011). RP 3 and RP 4 are interested in the effect of unfair job promotion on the motivation of the subordinate to sabotage the performance of the supervisor after the promotion tournament in order to repay unfairness and come to a more fair distribution of outcomes. Individual traits such as SVO which could motivate sabotage behavior are analyzed. In RP 4 further captures constructs that consider the emotional state of individuals. Additionally, justice perceptions and the attribution of unfairness (locus of control) are considered. Figure 1.5 shows the relationships between organizational and individual factors and their influence on CWB, which is explained in more detail in the next section.



**Figure 1.5: Role of Individual Factors in CWB**

People try to make sense of the events that happen and to see a cause and effect relationship. People believe that there is a relationship between the effort, the performance, and the achieved reward (Vroom, 1964). **Negative emotions** can arise due to the perception that the outcome is undeserved and that the supervisor is responsible for it (Tzafir and Hareli, 2009). In an emotion-centered model of CWB Spector and Fox (2002) state that distributive and procedural justice is named as an environmental factor, which causes CWB through emotional state. Negative feelings, such as anger or frustration, can on the one hand lead to direct actions to change the environment or on the other hand to behavior that affects emotions, without addressing the situational cause. This could be action that eliminates the immediate cause of negative emotion in a destructive way.

Additionally, in a competitive environment **envy** arises (Fehr and Schmidt, 1999). Envy is defined as the desire for something that another person has. Hence, a person lacks another's superior quality, achievement, or possession and either desires it or wishes that the other lacked it (Parrott and Smith, 1993). It occurs when there is a discrepancy between the desired and the obtained outcome, and another person who is relevant for comparison purposes has obtained a better outcome (Schaubroek and Lam, 2004). Envy stems from an upward (social) comparison and can be reduced through decreasing the gap between oneself and the other by improving oneself or by pulling the other down (Van de Ven et al., 2009). From the perspective of Equity Theory several authors emphasize that envy occurs in situations of perceived inequity and can lead to harmful behavior (e.g., Bolton, 1991; Fehr and Schmidt, 1999; Parrott and Smith, 1993; Rabin, 1993; Smith, 1991; Smith

et al., 1999). It is distinguished between benign and malicious envy (see, for a review, also Smith and Kim, 2007). Benign envy is a form of admiration toward the superior person without the component of hostility, while malicious envy has the intention to harm the superior (Van de Ven et al., 2009). Envy-eliciting situations mostly result in malicious envy if the envied person's advantage is evaluated as subjectively undeserved and the envier experiences less control over personal outcomes (Van de Ven et al., 2011).

Besides the emotional component of perceived unfairness also individual traits influence the perception of unfairness and reactions to it. An individual factor that is relevant in the context of unfairness is the **SVO** of a person. This factor is measured by using the SVO slider designed by (Murphy et al., 2011). SVO is the preference for particular distributions of outcomes for self and others (Messick and McClintock, 1968). Research distinguishes mainly between prosocial and proself individuals. And it also indicates that fairness norm-sensitivity is correlated with the magnitude of prosocial behavior and prosocials show positive weight to their own and others' outcome. Therefore, prosocial orientation, relative to a proself orientation, is more strongly linked to social responsibility and reciprocity (De Cremer and Van Lange, 2001). The SVO literature also suggests that prosocials have a higher tolerance for unfairness than proselfs. (Karagonlar and Kuhlman, 2013) summarized that harm aversion and increased self-control are associated with prosocial behavior. Contrasting literature argues that prosocials have a higher tendency to reward or punish their interaction partner according to what the latter deserves, so they behave non-cooperatively when the partner fails to behave cooperatively in order to enforce fairness norms (De Cremer and Van Lange, 2001).

## **5. Methodical Procedure**

The dissertation is based on three laboratory experiments (RP 2, RP 3, RP 4) in order to analyze CWB in different social contexts and organizational conditions. The experiments were programmed in z-Tree (Fischbacher, 2007) and were conducted in the experimental laboratory AIXperiment at RWTH Aachen University. The participants stemmed from the ORSEE subject pool and were primarily students from various degree programs. ORSEE is a web-based online recruitment system, specifically designed for organizing economic experiments. The next section elucidates why laboratory experiments were chosen to answer the research questions from chapter 1. The designs of the laboratory experiments and the manipulated variables are also explained.

### **5.1 Methodical Choice**

The primary advantage of experiments is that they use standardized procedures which enable a replication of the findings. Further, there is a greater degree of control over extraneous and independent variables. This additional control can be used to construct laboratory conditions that test theories and hypothesis. Further experiments investigate causal relationships among variables and uncover cause and effect relationships (Croson, 2003).

Concerning the research model of the dissertation, laboratory experiments provide the opportunity to operationalize the research problems, especially the social context and the organizational factors which predict CWB. Particularly, they enable the creation of a controlled work setting where team members have to collaborate (RP 2) or work in a hierarchical relationship with an unfair role assignment (RP 3 and RP 4).

Further, laboratory experiments provide the possibility to manipulate variables of interest, such as organizational justice and climate. In RP 2 ethical climate is induced by a code of conduct and in RP 3 and RP 4 procedural justice in promotions was manipulated. Additionally, individual factors that are involved in reactions to certain organizational factors (e.g., emotions) can be measured. Such individual traits are normally difficult to identify and quantify in the work setting.

Moreover, covert behavior like sabotage can be observed in a laboratory rather than in real work settings. Laboratory experiments enable the measuring of

severity and type of sabotage as well as the causal relationship between the manipulated organizational factors and the decision to sabotage. RP 3 concentrates on (non-) collaborative behavior and exploits an information-sharing task to analyze whether and which kind of information (constructive or destructive) team members will share. RP 3 measured sabotage in the form of negative reciprocity (punishment) by the subordinate. RP 4 uses the slider task as a real effort-task to measure the performance and the amount of sabotage on the side of the subordinate after the promotion.

## **5.2 Experimental Design**

Overall, the experiments are composed of the following parts: The experiment began with an information phase in which the participants were educated about the task and the business setting. In the learning phase, participants learned about the payment contract and their task. They then answered several manipulation questions that they had to answer correctly in order to proceed. This was followed by the decision-making phase, where participants had to solve a task or make decisions that influence their payoffs. At the end, the participants answered follow-up questions regarding individual characteristics, perceptions of manipulation, and demographical data. Finally, based on the outcome of the experimental task and the decisions, participants were paid. Table 1.2 gives an overview of the manipulated variables in the three experiments, which are explained in the next sections.

**Table 1.2: Overview of Laboratory Experiments**

Experiment	Participants	Task	Manipulation	Dependent Variables
1 (RP 2)	238	Information sharing task	Code of conduct (Yes/No)  Reported firm behavior (Concordant/Discordant)	Information sharing: Type of information (Constructive/Destructive)  Acceptance of information (Yes/No)
2 (RP 3)	272	Dictator game	Promotion procedure (Fair/Unfair)	Supervisor: Amount of compensation  Subordinate: Punishment
3 (RP 4)	228	Slider task	Promotion procedure (Fair/Unfair)	Performance (Solved slider)  Sabotage (Removed slider)

### 5.2.1 Research Paper 2

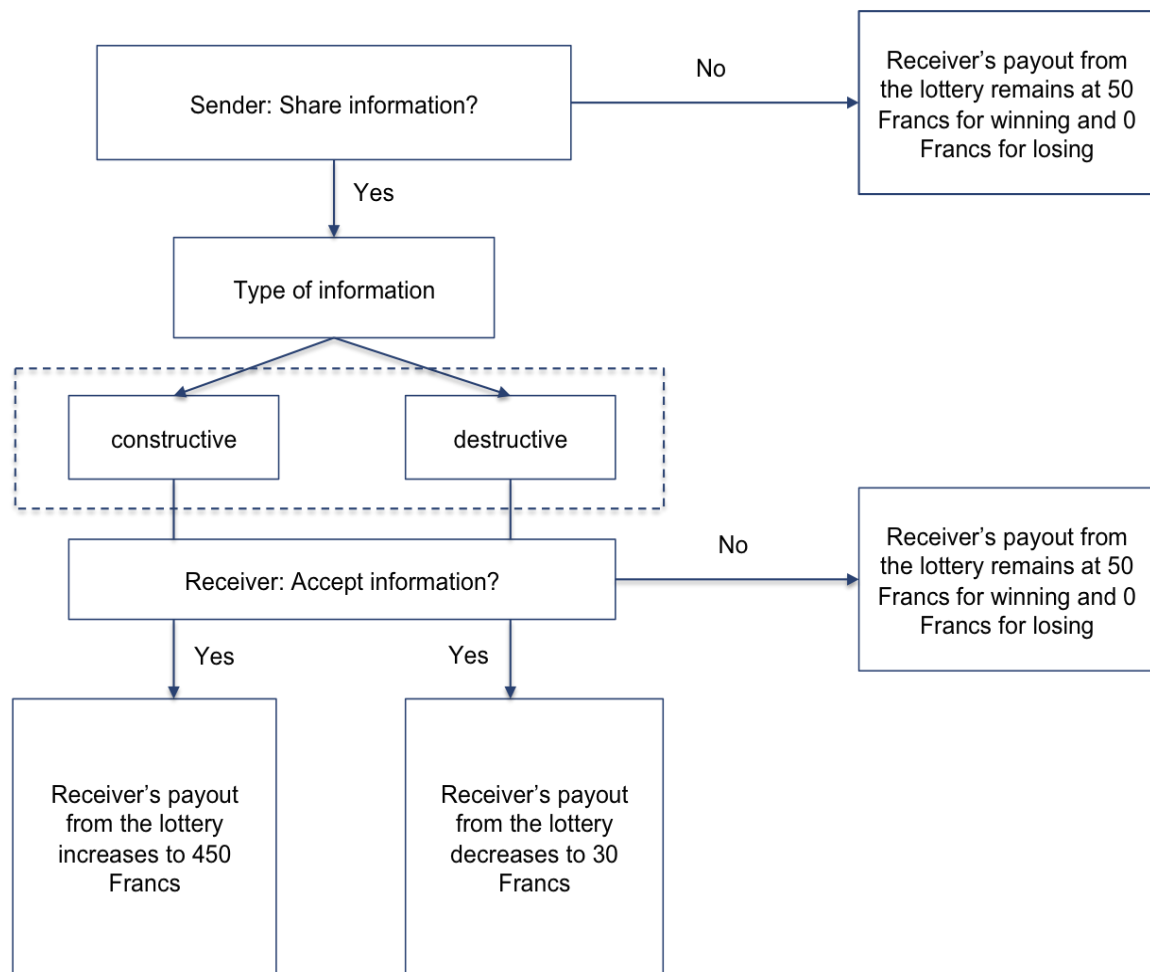
RP 2 analyzed the effect of the congruence or dissonance between a code of conduct and the actual firm behavior on (non-) collaborative behavior. Such behavior was tested in the setting of information sharing. Information sharing is related to collaboration between individuals who work toward a common goal (Boland and Tenkasi, 1995) and to prosocial behaviors such as helping others (Frey, 1993). The behavior of the sender of information and the receiver of information was analyzed. The sender of information had the choice to send

constructive information or destructive information but also not to share information. Sabotage was operationalized by not sharing information or productivity-decreasing information. Information sharing was associated with cost. The cost of information transfer was a within-subjects factor manipulated at 11 levels (0 to 100 Francs, in steps of 10 Francs). Three conditions were manipulated:

- 1) First, one treatment with a code of conduct, which participants had to sign, and one without code of conduct was manipulated. This code emphasizes norms of cooperation, such as integrity and teamwork.
- 2) Second, a treatment, where participants learned about actual firm behavior through the summary of press articles, was manipulated. The press coverage can be either positive in the way that management practices are in line with the firm's code of conduct or negative (management practices violating the firm's code of conduct).
- 3) Third, the congruence between individual- and firm-level goals was manipulated by varying the sender's cost of information transfer.

On the one hand, individual earnings were a function of the individual and the firm output, which created incentives to cooperate. On the other hand, the individual with the higher output earned a bonus, which created incentives to compete. Each participant's individual output was the result of an independent lottery with two equally likely outcomes – win (50 Francs for winning the lottery) or lose (0 Francs for losing the lottery). The sender transmitted information that affects the outcome values for the receiver's lottery. The receiver then chose to accept or reject the offered information. Collaboration in the form of sharing constructive information and accepting it increased a receiver's value from winning. Parameters were chosen such that sharing of positive information was always beneficial to the firm. Further, from an economic viewpoint it was always better to share positive information than negative information and to accept information. Figure 1.6 summarizes the economic solution of the experiment.





**Figure 1.6: Decision-Making Process and Economic Solution of RP 2**

### 5.2.2 Research Paper 3 and Research Paper 4

The experiments in RP 3 and RP 4 have a similar structure and setting. The main difference lies in the task used to measure the behavior of the subordinate after the promotion decision. The next section describes the common setting of the two experiments, and then the differences in the design of each experiment will be presented.

**RP 3 and RP 4** ask how the violation of fairness norms by the organization in a job promotion decision influences collaborative and sabotage behavior between supervisor and subordinate. Based on the criteria for procedural justice, the standard that the promotion process is transparent and related to the performance, skills and abilities was violated. An experimental design was chosen that triggers the expectation that the high performer would be promoted. The participants were only informed that, based on their performance, they would be promoted to the role

of the subordinate or the supervisor. However, it was not revealed whether a high or a low performance would lead to the promotion. In all treatments, framing (“supervisor”, “subordinate”) was used in order to emphasize the status difference between the roles in the hierarchical relationship. Additionally, the participants received information about the performance of their partner, which demonstrates the unfairness of the promotion decision.

In both experiments a 2 x 2 factorial design was chosen, with the factors: (1) type of promotion (fair vs. unfair) and (2) possibility of punishing the supervisor (yes vs. no). The subjects were randomly assigned to one of the four treatments. All participants were assigned to teams of two members and asked to perform math calculations (addition, subtraction, multiplication, and division), competing against the other team member. The roles of the participants in the decision task within their team depended on their performance in the real effort-task. In the fair treatment, the team member with the higher (lower) performance was given the role of the supervisor (subordinate). In contrast, in the unfair treatment, high performance within the team led to the role of the subordinate and low performance led to the role of the supervisor. Additionally, the SVO of an individual was measured by using the SVO slider designed by (Murphy et al., 2011). It considers how people vary in their motivation or goals when evaluating different source allocations between themselves and others. The SVO is a continuous construct that is measured with a continuous scale, and results are expressed through the SVO angle. The higher the SVO angle, the more a person has social preferences and minimizes the difference between her or his own payoffs and the payoffs of others. After that the experiment concludes with a questionnaire about perceived other personal traits and demographic data.

In **RP 3** the relevant dependent variables are the compensation payment of the supervisor to her or his subordinate and the punishment of the supervisor by her or his subordinate. Thus sabotage was operationalized by punishment as a form of negative reciprocity. In the decision task, the subjects participated in a modified dictator game. The dictator game was chosen in order to analyze the compensation offered by the supervisor and the punishment by the subordinate. The dictator game gives us the possibility to measure social preferences, such as reciprocity (punishment) and other-regarding behavior (compensation), in unfair situations.

Each member of a team received 30 Francs. Additionally, the supervisor was asked to divide these 100 Francs between her-or himself and the partner. In the treatments with punishment, the subordinate was allowed to punish the supervisor. The strategy method was used in order to request how much the subordinate will punish the supervisor for a given compensation. For each possible compensation level offered by the supervisor (0,10,20...100), the subordinate had to specify an amount by which the payment of the supervisor should be reduced. Punishment was associated with costs for the subordinate. In work settings the subordinate can punish the supervisor, for example, by delivering low quality in work performance.

The focus of the experimental design of **RP 4** is to investigate subordinates' behavior after a job promotion tournament. Especially, the interest lies in whether the subordinate will increase sabotage or performance in order to reduce inequity. Further, the individual factors leading to higher performance or the decision to sabotage were analyzed. Similarly to RP 3, the mathematical calculation task for the role assignment of supervisor and subordinate was used. But differently from RP 3 the slider task (see Gill and Prowse, 2011) was used to measure performance of and sabotage by the subordinate after the promotion decision. The decision to choose a performance task other than the mathematical calculation task after the promotion was because in practice a new role assignment often leads to other fields of activity, for example when supervisor and subordinate have to work together on a new project. The slider task is a real-effort task and should measure the performance of the participants. Subjects had to position each slider at any integer location between 0 and 100. The object of the task is to position as many sliders as possible at 50 during the given time. The total performance was calculated by the sum of all correctly positioned slider in all rounds of play. The supervisor had, because of her or his higher position, an advance of 10 sliders and earns double that of the subordinate per slider (2 Francs or 0,2 Euros). Additionally, a treatment was manipulated which gave the subordinate the possibility to sabotage the performance of the supervisor. In this treatment the subordinate had to decide which percent (0-100%) of her or his own correctly positioned sliders she or he wanted to subtract from the sliders of the supervisor. By doing this, the part of the subordinate's effort which is negatively motivated to reduce the performance of the supervisor can be determined. In a real- work setting the subordinate can sabotage

the performance of the supervisor via low job quality or by hiding important information which the supervisor needs for a good job performance.

Additionally to the SVO, the following constructs were built in order to measure individual differences that lead to sabotage: benign and malicious envy (Lange and Crusius, 2015), and negative emotions. The items for the emotional state of a person are derived from the literature of Spector and Fox (2002) and Tzafir and Hareli (2009). Based on this, the main emotional reactions to unfairness are frustration, anger, sadness, and hopelessness.

## **6. Hypotheses and Key Findings**

The next chapter summarizes the main hypotheses and related findings of the research papers. First, the findings from the literature review in RP 1 regarding the interactional effect of organizational and individual factors on CWB are summarized. Second, findings from RP 2 concerning the effectiveness of a code of conduct are summarized. The findings are based on the SDT (Deci and Ryan, 2000) explained in chapter 4. Next, the effect of unfair job promotion from RP 3 and RP 4 on the reaction of the subordinate and the supervisor is presented. The hypotheses are based on the Equity Theory (Adams, 1963,1965).

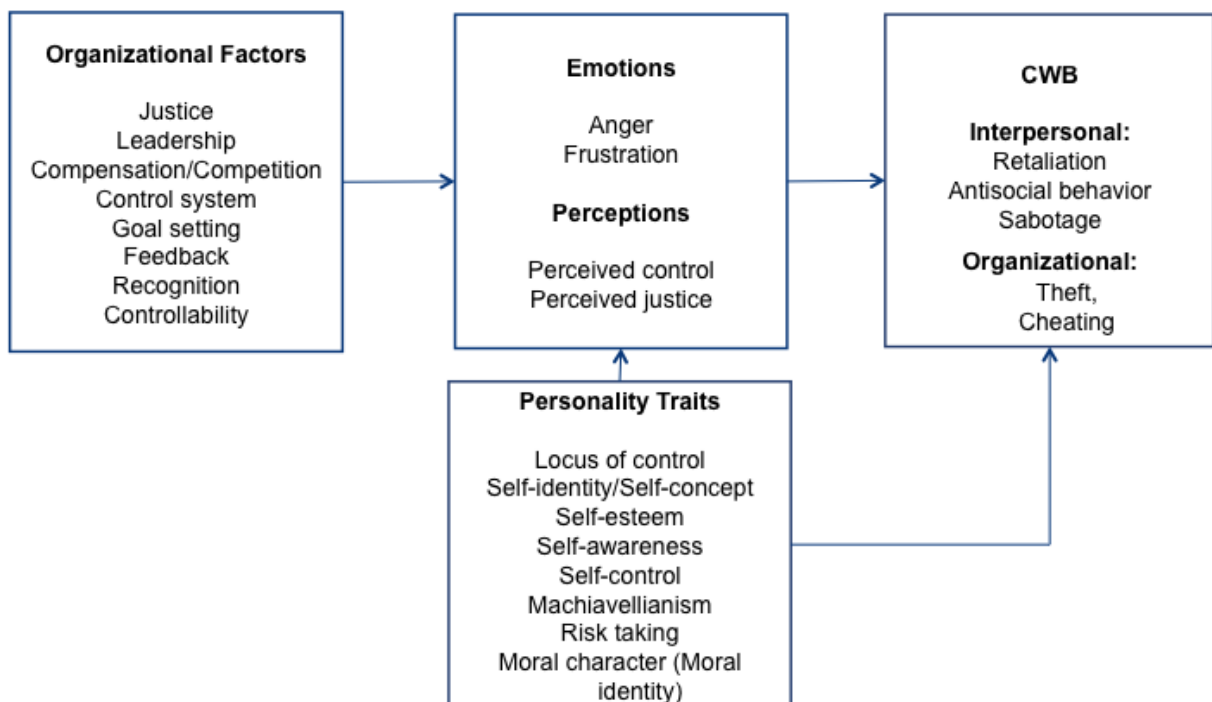
### **6.1 Research Paper 1**

RP 1 builds on the argumentation that the work behavior of an employee is a function of individual and organizational or situational factors, which interact with each other and lead to counterproductive outcomes. Via a literature review of over 50 experimental studies it is summarized which organizational and individual factors influence CWB. The analysis was clustered into different organizational factors which, together with individual factors, influence different types of CWB. These factors are derived from theoretical and empirical findings. Especially, soft factors, such as justice and leadership, as well as hard factors, such as a compensation scheme, were observed.

The purpose of this literature review was to analyze and give hints on how organizations can regulate employees' behavior through designing the right

environment and by understanding and handling individual traits and differences. The focus is on personality traits (e.g., self-identity, self-esteem), perceptions (e.g., justice and control), and emotions (affectivity) as personality-based variables, which predict individual differences in CWB. It was hypothesized that differences in traits, perceptions, cognitions, and emotional responses influence the reactions of employees to organizational conditions in terms of different types of CWB towards the organization or other employees.

A key finding is that supervisor-targeted CWB (e.g., retaliation, antisocial deviance, and unethical behavior) is driven by mistreatment on the side of the leadership. CWB is also driven by individual factors, such as emotions and perceptions regarding justice and control. From the personality traits especially the locus of control is an important factor for predicting CWB and particularly the target of CWB. The review especially indicates that the experimental results mainly depend on the type of CWB that is measured, the target of CWB, and the way in which CWB is measured (by intentions or by behavior). Figure 1.7 shows the main personal and organizational factors as well as the relevant CWB types and their relationships, which were analyzed in the presented experimental studies:



**Figure 1.7: Summary of Organizational and Individual Factors of CWB**

The next sections summarize the findings from the experimental studies in RP 2, RP 3, and RP 4.

## **6.2 Research Paper 2**

RP2 analyzed how non-monetary regulations in the form of belief systems and the concordant or discordant firm behavior as contextual factors influence collaboration. Collaborative behavior in the form of information sharing and acceptance of information was tested for the case that collaboration is individually rational and collectively beneficial. It was distinguished between low cost values for information sharing (cost = 0-50) and high cost levels (cost = 60-100), and individual behavior and behavior on a group level was analyzed. The baseline condition was the absence of a code and concordant firm behavior. The findings from RP 2 are summarized in Table 1.3 and elucidated below:

**Table 1.3: Hypotheses of RP 2**

Hypotheses	Evidence
<p><b>H1:</b> When cooperation is individually rational and collectively beneficial, the use of belief systems (in the form of the presence and reminders of the code of conduct)</p> <ul style="list-style-type: none"> <li>a) increases the propensity of the sender to collaborate,</li> <li>b) increases the propensity of the receiver to collaborate,</li> <li>c) increases the realized gains from cooperation.</li> </ul>	✓
<p><b>H2:</b> When cooperation is individually rational and collectively beneficial, compared to reported ethical firm behavior, reported firm behavior that reflects unethical behavior</p> <ul style="list-style-type: none"> <li>a) increases the propensity of the sender to collaborate,</li> <li>b) increases the propensity of the receiver to collaborate,</li> <li>c) increases the realized gains from cooperation.</li> </ul>	✓
<p><b>H3:</b> When cooperation is individually rational and collectively beneficial when an additional belief system that emphasizes collaboration is implemented, compared to reported ethical firm behavior, reported firm behavior that reflects unethical behavior</p> <ul style="list-style-type: none"> <li>a) decreases the propensity of the sender to collaborate,</li> <li>b) decreases the propensity of the receiver to collaborate,</li> <li>c) decreases the realized gains from cooperation.</li> </ul>	✓
<p><b>H4:</b> When cooperation is individually rational and collectively beneficial, compared to reported unethical firm behavior, the combination of reported firm behavior that reflects ethical behavior and a belief system that emphasizes collaboration</p> <ul style="list-style-type: none"> <li>a) increases the propensity of the sender to collaborate,</li> <li>b) increases the propensity of the receiver to collaborate,</li> <li>c) increases the realized gains from cooperation.</li> </ul>	✓

It was found that only a low percental amount of possible gains from collaboration are realized. Adding a code of conduct increases gains significantly independent of firm behavior. In contrast, discordant behavior lowers gains when a code of conduct is implemented, and increases gains when such a code is absent. Further, non-monetary controls have a low impact when economic incentives are not aligned with individual outcomes.

Based on the SDT, the results support the assumption that the integration of norms expressed by a code of conduct depends on need satisfaction, such as the need for autonomy and the need for relatedness (Deci and Ryan, 2000). It can be hypothesized that the presence of a code of conduct increases the propensity to collaborate because it makes socially accepted norms more salient. By collaborating, the organizational members benefit others, which complies with the need of relatedness. The results clearly point out that a code of conduct enhances collaboration between organizational members on individual and on group level (H1a, H1b, H1c).

Nevertheless, a significant interaction was found between the presence of a code of conduct and the firm behavior. Such codes have a reliably stronger effect on group and on individual level when actions are concordant with stated beliefs (H4a, H4b, H4c). In this case, the code provides a general relatedness and trust between organizational members that is strengthened through concordant firm behavior (Simons, 1995). Overall, a code of conduct has a highly significant effect on collaboration in the form that senders share more positive and less negative information, and receivers are more willing to accept information.

Further, the findings show that unethical (discordant) firm behavior does not automatically trigger non-collaborative behavior. The results support the assumption that unethical reported firm behavior increases collaboration on a group level compared to ethical firm behavior when a code of conduct is absent (H2c). Thus, based on SDT it can be argued that reflecting on unethical (discordant) firm behavior motivates employees to counteract such negative behavior and expose higher levels of collaboration. They act autonomously according to their own (intrinsic) motives because such behavior can be attributed to an internal locus of control, which increases the feeling of autonomy.

In the case of dissonance between the code of conduct and firm behavior it can be argued that dissonance increases uncertainty about how to behave (Festinger, 1957) and decreases trust and relatedness (H3). The results do support the negative interaction between discordant firm actions and a code of conduct concerning sharing less positive information and sharing more negative information (H3a, H3b) as well as for the gains on group level (H3c). Overall, it can be summarized that unethical firm behavior has two effects: (1) a positive effect on



collaboration when a code of conduct is absent (satisfaction of autonomy) and (2) a negative effect when a code is implemented (cognitive dissonance).

### 6.3 Research Paper 3

RP 3 was interested in the reaction of the supervisors and the subordinates on unfair job promotion based on Equity Theory (Adams, 1963,1965). The supervisor as the dictator in the modified dictator game has the opportunity to react to unfairness by offering higher compensation while the subordinate can react to the compensation with punishment. The following Table 1.4 summarizes the hypotheses and the results:

**Table 1.4: Hypotheses of RP 3**

Hypotheses	Evidence
<b>H1:</b> Compensation payments to subordinates in the unfair treatments are higher than in the fair treatments.	✓
<b>H2:</b> Higher compensation payments by supervisors lead to lower punishment by subordinates.	✓
<b>H3:</b> Compensation payments in the treatments with punishment are higher than in the treatments without punishment.	✗
<b>H4a:</b> For low levels of compensation, the punishment by subordinates is higher in the unfair treatment than in the fair treatment.	✗
<b>H4b:</b> For high levels of compensation, the punishment by subordinates is lower in the unfair treatment than in the fair treatment.	✓
<b>H5:</b> Supervisors with a higher SVO provide higher compensation to their subordinates.	✓
<b>H6a:</b> Subordinates with a higher value of SVO punish unfairly promoted supervisors more than subordinates with a lower value of SVO when compensation payments are not perceived to offset procedural injustice (compensation levels $\leq 40$ ).	✗
<b>H6b:</b> Subordinates with a higher SVO punish unfairly promoted supervisors less than subordinates with lower values of SVO when compensation payments are perceived to offset procedural injustice (compensation levels $> 40$ ).	✗

## **Results for the Behavior of the Supervisor**

In RP 3 it was analyzed how the supervisor reacts to her/his unfairly earned status due to the compensation that she or he offered to the subordinate. It can be hypothesized, based on Equity Theory (Adams, 1963), that because of inequity aversion the supervisor tries to offset her or his unfairly earned status by higher compensation (H1). The results support the hypothesis that compensation by the supervisor is significantly higher in the unfair treatments; thus, unfairly promoted supervisors are willing to reduce the unfairness in the distribution of outcomes. It can be argued that they use their (unfairly earned) position to help others. Additionally, it can be assumed that compensation depends on the willingness of the subordinates to punish the supervisor for low compensations offered. Therefore, supervisors will share more when subordinates have the opportunity to punish their supervisors (H3). Results indicate that the supervisor is intrinsically motivated to compensate the unfairness from unfair promotion and does not see any risk of being punished. In conclusion, H3 is not supported.

Additionally, it can be hypothesized that the results will be influenced by the SVO, in the sense that more prosocial individuals will offer higher compensation (H5). Prosocial individuals show higher cooperative and helping behavior and overall more concern for others and organizational goals. Therefore, prosocial orientation, relative to a proself orientation, is more strongly linked to social responsibility and reciprocity (De Cremer and Van Lange, 2001). Results show that especially supervisors with higher SVO provide higher compensation to their subordinates, because they feel higher concern for the outcomes of others. Further, it was found that higher compensation is intrinsically motivated, because the possibility of punishment by the subordinate has no significant influence on compensation offers.

## **Results for the Behavior of the Subordinate**

It was tested how the subordinate reacts to the compensation by her/his supervisor in fair and unfair promotion procedures. The argumentation is based on Reciprocity Theory (Falk and Fischbacher, 2006) and Attribution Theory (Weiner, 1995). As a reaction to higher compensation it was in general assumed that the subordinate acts reciprocally to the supervisor's kind behavior and punishes her or him less for

higher compensation (H2). In line with Reciprocity Theory, the degree of punishment decreases with the amount of compensation. Additionally, the analysis was split into high and low compensation. From ultimatum games it is known that offers greater than 40 % are considered to be fair and are usually accepted (Camerer and Thaler, 1995; Roth et al., 1991;). H4b argues that for high compensation (>40) the subordinate more likely attributes the unfairness to exogenous factors (promotion procedure), while for low compensation (<=40) the unfairness of the promotion process will be more likely attributed to the supervisor, which leads to higher punishment than in the fair treatment (H4a). This fits to Attribution Theory (Weiner, 1995), where a person attributes outcome to another person when someone suffers damage from the action of the other person and believes that the other person can control that action. Results support the hypothesis that in line with Reciprocity Theory punishment is higher in the fair compared to the unfair treatment for compensation above 40. This leads to the paradox situation where an unfairly promoted supervisor can even profit from injustice if she or he acts fairly in an unfair situation. The results show that subordinates are willing to invest in order to enforce fairness norms and to punish the supervisor in an unfair situation much less than in the fair treatment, where the supervisor offsets unfairness.

Further, it is hypothesized that SVO will influence this effect (H6). Based on the SVO literature, it is argued that for low compensation a higher value of SVO (prosocial preferences) for the subordinate leads to higher punishment because compensations are not perceived to offset unfairness while high compensation will be punished less by subordinates with high SVO. This hypothesis cannot be supported. Thus, it seems that on the side of the subordinate, in contrast to the supervisor, other-regarding preferences are not predicting behavior.

#### **6.4 Research Paper 4**

RP 4 primarily analyzed the behavior of the subordinate. Based on Equity Theory (Adams, 1963), she or he gets the opportunity to react to the unfair job promotion in two different ways: to improve her or his own performance or to sabotage the performance of the supervisor in order to decrease inequity. It was asked how individual characteristics influence the response of employees who had to deal with

the violation of fairness norms in a job promotion decision. The focus was on emotional responses, such as envy and negative emotions, as well as on individual traits, such as SVO. Table 1.5 summarizes the findings:

**Table 1.5: Hypotheses of RP 4**

Hypotheses	Evidence
<b>H1a:</b> Malicious envy increases the performance of the subordinate in the unfair job promotion decision.	✓
<b>H1b:</b> Benign envy increases the performance of the subordinate in the fair job promotion decision.	✗
<b>H2a:</b> Malicious envy will lead to higher sabotage by the subordinate in the unfair job promotion decision than in the fair job promotion decision in retaliation to unfairness.	✗
<b>H2b:</b> Negative emotions will lead to higher sabotage by the subordinate regardless of fairness in the job promotion decision.	✓
<b>H2c:</b> Negative emotions will lead to higher sabotage by the subordinate in the unfair job promotion than in the fair job promotion decision in retaliation to unfairness.	✗
<b>H3a:</b> Prosocials are less likely to punish their supervisor for the (unfair) promotion decision than proselves are, because prosocials have a higher harm aversion.	✓
<b>H3b:</b> Negative emotions lead to lower sabotage by prosocials than by proselves, because prosocials have a higher self-regulation of negative emotions.	✓

It is distinguished between benign and malicious envy because both have different motivational effects. While benign envy is more likely to be related to constructive consequences, such as higher effort, malicious envy is related to destructive consequences, such as harmful behavior toward the superior person (Van de Ven et al., 2009). Malicious envy occurs in unfair situations where the envied person's advantage is evaluated as subjectively undeserved (Van de Ven et al., 2011). It is discussed how such envy leads to sabotage in order to reduce the feeling of inferiority on the side of the subordinate. On the side of performance it was found that malicious envy has a motivational effect in the unfair treatment by increasing performance (H1a). Benign envy shows no effects in the fair treatment (H1b). Thus, it seems that rather destructive emotions work as a motivator especially in unfair situations.

On the side of sabotage it is assumed that malicious envy (H2a) and other negative emotions, such as anger and frustration, stimulate destructive responses in general (H2b) and especially in unfair situations (H2c), and lead to higher sabotage in order to retaliate to unfairness. Further, the SVO is assumed to have an influence on sabotage in the form that prosocials will be less likely to punish unfairness because of the higher harm aversion (H3a). Additionally, they have a higher self-regulation of emotions (H3b), and therefore negative emotions will lead to lower sabotage for prosocials than for proselfs (Karagonlar and Kuhlman, 2013). The results support the hypothesis that emotional responses and SVO drive the decision to sabotage the supervisor for (unfair) job promotion of the subordinate. Whereas in general, negative emotions overall increase the willingness to sabotage, it has been shown that, as assumed, negative emotions lead to a lower willingness to sabotage for prosocial individuals.

## **7. Conclusions**

The next section closes the introduction to the research project with a discussion of the main findings and the implications for the practical use of the results. Moreover, the limitations of the research paper are presented and the resulting research gaps are exposed.

### **7.1 Summary of Key Findings**

The aim of this dissertation is to analyze which factors influence CWB in the form of sabotage. It is distinguished between two kinds of factors: organizational and individual. The influence of these factors on CWB in two different work relationships is analyzed. On the one hand, teams without hierarchy are considered and on the other hand, hierarchical relationships between subordinate and supervisor. These work relationships create different social settings. RP 1 gives an overview of the main influencing factors of CWB which were explored in more detail in RP 2, RP 3, and RP 4. On the side of the organizational factors, the focus is on organizational climate and organizational justice. The organizational climate in RP 2 was operationalized by the congruence or dissonance between a code of conduct and

firm behavior. Here, the focus is on the influence of corporate norms regarding (non-) collaborative behavior in the form of sharing constructive information or not sharing information (passive sabotage) or even sharing destructive information (active sabotage). In RP 3 and RP 4 organizational justice was operationalized by the (un) fairness of promotion procedures. The fairness norm is considered in order to analyze the reactions to unfair promotion. In both papers the reaction of the subordinate was analyzed in different forms: punishment, sabotaging supervisor's performance, and increasing or decreasing own performance. On the side of the individual factors, the focus is on individual traits, such as SVO and emotional responses.

Table 1.6 summarizes the research questions and the key findings from the research papers before the contributions in section 7.2 are amplified.

**Table 1.6: Summary of Key Findings**

RP	RQ	Key Findings
1	What are the key organizational and individual drivers for different types of CWB?	<ul style="list-style-type: none"> <li>• Individual factors which drive CWB can be distinguished as personality traits, perceptions, and emotional responses.</li> <li>• The interaction of organizational factors with individual differences determines the type, target, and severity of CWB.</li> <li>• The main drivers of interpersonal CWB are “ soft“ factors, such as perceived justice and leadership as well as emotional responses.</li> </ul>
2	How does the congruence or dissonance between norms expressed by a code of conduct and firm behavior influence collaboration in teams?	<ul style="list-style-type: none"> <li>• A code has a reliably stronger effect when actions are concordant than when they are discordant with stated beliefs.</li> <li>• Autonomy and relatedness play a role for the integration of norms. Especially, discordant firm actions could trigger the feeling of autonomy in the absence of a code of conduct.</li> <li>• Non-monetary controls have less impact when economic incentives are not aligned with the individual outcomes.</li> </ul>

RP	RQ	Key Findings
3	How does the violation of fairness norms in a job promotion decision influence collaborative behavior and punishment between supervisor and subordinate?	<ul style="list-style-type: none"> <li>• The supervisor as well as the subordinate is motivated to offset unfairness by higher compensation or by sabotage.</li> <li>• Based on reciprocity, the supervisor benefits from unfair promotion when she or he acts fairly in an unfair situation.</li> <li>• Prosocial supervisors show more other-regarding behavior in the form of higher compensation.</li> </ul>
4	How do individual traits and emotional responses influence the reaction of employees who have to deal with the violation of fairness norms in a job promotion decision?	<ul style="list-style-type: none"> <li>• The willingness to sabotage the supervisor for unfair promotion is driven by negative emotions and the SVO of a person.</li> <li>• Negative emotions lead to lower willingness to sabotage for prosocial individuals.</li> <li>• The performance of the subordinate after unfair promotion is driven by malicious envy.</li> </ul>

## 7.2 Contributions and Implications

The findings from section 7.1 overall contribute to closing some of the identified research gaps identified in chapter 3. The literature review in **RP 1** considers the interactional effect of organizational and individual factors and it was distinguished between different types of individual factors and different types of CWB. The distinction between CWB types aids an understanding of the severity of consequences resulting from individuals' reaction to organizational factors. A deeper understanding of individual reaction to organizational factors can help with the designing of more effective human resource management activities, for example, concerning job designs or organizational culture.

The findings from **RP2** give a deeper understanding of the effectiveness of a code of conduct in dependence of the firm behavior, showing the consequences of

a dissonance between the expressed norms and firm behavior. Thus, it is not only analyzed whether a code of conduct is effective but also which consequences an ineffective code has for the (non-) collaborative behavior of the team members. The findings contribute to explaining why the literature on the effects of codes of conducts is mixed. Whereas some studies have found more ethical behavior, others conclude that codes of conduct can even be harmful. The results indicate that a code of conduct is especially helpful if cognitive dissonances between two dimensions (what a firm says and what a firm does) can be eliminated. For practitioners, the results in RP 2 indicate that a code of conduct should only be established when (past and future) management practices comply with the ethical code on a firm-wide level. SDT also offers practical implications regarding how to develop and design human resource management practices that will promote autonomous motivation to follow a code of conduct. It has been shown that psychological mechanisms are relevant for the integration of norms by the organizational members. The focus is on need satisfaction, such as autonomy and relatedness. Thus, organizations, for example, have to distinguish between people who have a high need for autonomy in order to create a social context which fosters integration of external regulations by exerting less control. Additionally, the study shows that employees' concordant behavior is influenced by the behavior of the leadership. Thus, senior managers must be perceived to support the norms expressed in a code in order to enhance awareness for the code and to reinforce it.

**RP 3 and RP 4** contribute to CWB of individuals in unfair situations. Especially, the case of unfair promotion procedures which lead to unfair distribution of status is analyzed. Rather than analyzing the influence of promotion characteristics on the perception of fairness (as do several other studies in this area) the focus is on the consequences of perceived unfairness for the relationship between supervisor and subordinate. The laboratory setting enabled sabotage between team members to be made observable. A deeper understanding of the activation of social preferences, such as reciprocity and inequity aversion, in unfair situations is generated. Taking RP 3 and RP 4 into account it transpires that social preferences seem to be activated in situations where social norms, such as fairness, are violated by the organization. The violation of fairness norms on a higher organizational level does not lead to the violation of such norms in hierarchical relationships. Rather, it depends on how the supervisor behaves in the unfair



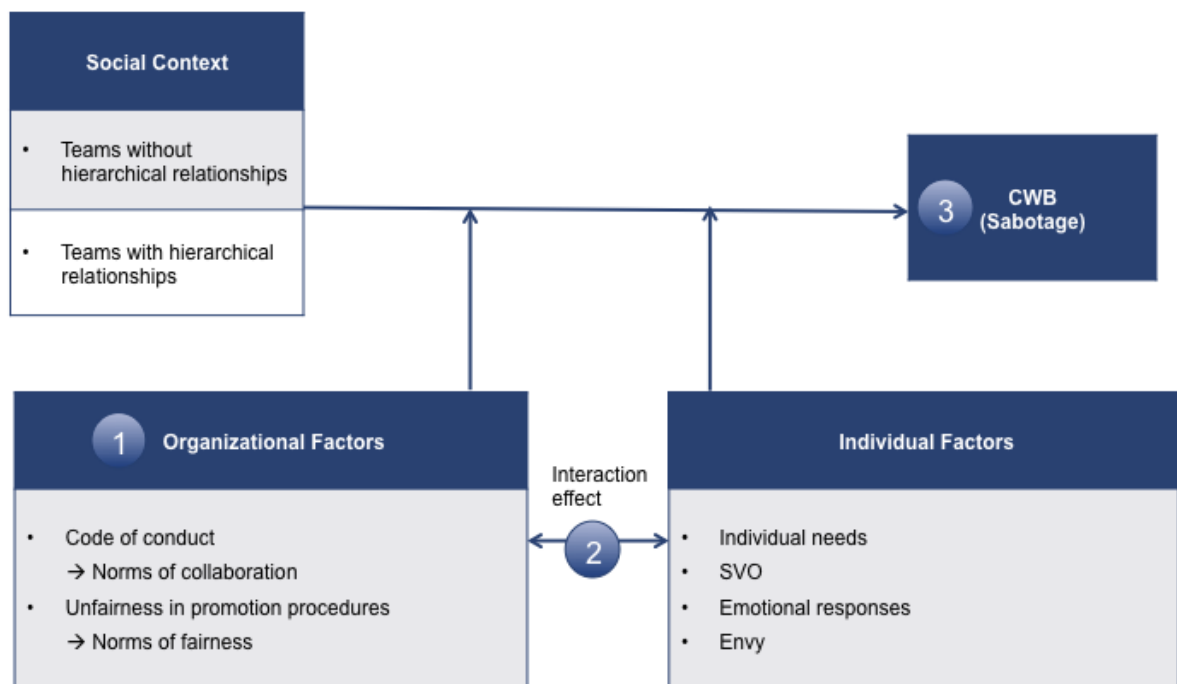
situation and on the source of unfairness. In sum, the unfairly promoted supervisor can profit from procedural promotion unfairness if willing to offset unfairness. The findings contribute to understanding the more social elements of fairness. This also supports the argumentation by Ackermann et al. (2016), who state that social preferences are not unconditional and, for example, depend on the intentions of the exchange partner. The findings also make a contribution to Social Exchange Theory by showing that acting fairly in an unfair situation may create a closer social exchange relationship and may influence collaboration positively. The findings implicate that promotion not only leads to a change on the factual level (status and responsibility) but also on the relationship level between supervisor and subordinate. In practice, promotion decisions can lead to personal conflicts between people who worked on the same hierarchical level earlier. They have to deal with the situation where one of the team members receives a higher social and material status. This can induce envy and lead to sabotage behavior. Therefore, it is necessary to analyze how this role assignment changes the relationship between supervisor and subordinate, especially when this role assignment is not based on performance but occurs in an unfair manner.

**RP 4** additionally identifies that individual traits and emotions in unfair promotion influence sabotage behavior. Managers can often do more to ensure that processes are fair and that this fairness is communicated credibly to all employees who are competing for organizational outcomes. Nevertheless, it is important to select and manage employees in a manner where they can handle (perceived) unfairness. The results show, for example, that prosocials have a higher harm aversion and higher control over their emotions. Further, the consideration of such individual differences can help to differentiate between affective and strategic sabotage. The results show that sabotage can result from negative emotions. Therefore, CWB can be an impulsive act when emotions are involved and it can be short-term rather than long-term orientated (Gino et al., 2011). For example, emotional responses to social comparison in a promotion setting might be only a change in mood and therefore not have much explanatory power. Thus, it is unclear how long the psychological effects of promotion decisions linger on (Schaubroek and Lam, 2004).

In the next section the limitations of the dissertation and the related further research are discussed.

### 7.3 Limitations and Further Research

The work of this dissertation is also subject to some limitations. Based on the research model of this dissertation, the limitations and further research in the different areas are discussed in the following section. The following Figure 1.8 gives an overview of these areas.



**Figure 1.8: Implications for Further Research**

#### (1) Organizational Factors

The experimental findings from RP 3 and RP 4 show that it is necessary to understand when inequity aversion meets its limitations. For example, the results of RP 3 and RP 4 demonstrate that subordinates punish supervisors less when the latter act fairly in an unfair situation. Hence, subordinates forgo a more equal outcome to reward fair behavior or fair intentions behind a certain behavior. The standard Utility Theory assumes that the utility of an action is mainly driven by consequences of the action rather than by the intention behind the action. In contrast, Falk and Fischbacher (2006) argue that people evaluate the kindness of an action by its related intention. As Falk et al. (2008a) state, at the practical level

this issue is important because many fairness attributions are likely to influence decision-making in organizations. If the attribution of intentions turns out to be behaviorally important, the standard utility models show limitations. In this sense, Equity Theory should be connected with the Theory of Attribution, because the (perceived) source of unfairness and the involved emotions are important for understanding how people react to unfairness.

In this dissertation, the focus is on the effect of procedural and distributive justice as relevant justice types. As justice-related literature demonstrates, there is an interactional effect between these types. It could be interesting to analyze how process fairness can balance out distributive justice. Particularly, it is questionable whether a procedure for outcome justice can be substituted and whether selection systems which are procedurally fair also result in desired outcomes (Arvey and Renz, 1992).

Further, it has to be considered which justice criteria have an influence on the perception of justice. As demonstrated in chapter 3, there is a wide range of justice rules that could potentially affect perceptions of justice (e.g., job relatedness, feedback, interpersonal treatment). Future research also has to consider when the violation of different justice rules is considered to be most unfair and leads to which kind and which severity of CWB.

Also interactions in the job promotion process could influence perceived fairness of the subordinate, especially the quality of the interpersonal treatment that people receive when procedures are implemented (interactional justice, Bies and Moag, 1986). The experimental setting in RP 3 and RP 4 was designed in a way where the interaction between subjects was not possible, which is not the case in a workplace setting. This design has the advantage that the behavior of participants could be attributed to the manipulation in the experiment rather than to interpersonal relationships, which could distort behavior. But interaction processes might question the results. In this context it would be interesting to analyze how unfairness influences the relationship between supervisor and subordinate when both know each other or have established a closer relationship because they have worked for a long time in a team on the same hierarchical level.

Another aspect for further research stemming from RP 3 and RP 4 could also be to identify the conditions under which justice expectations have an impact on justice perceptions. For example, expectations become more important in situations

where cognitive resources or time is limited or information that would facilitate central processing is not available (Bell et al., 2006). Lind (2001) argues that fairness judgments can be changed when new information is received that falls outside of expectations. Thus, further research could capture when information should be provided early on in a promotion process in order to generate realistic expectations.

Concerning the influence of ethical climate on employee behavior, the results from RP 2 indicate that employees not only deduce norms from the document itself but also from the practices of their managers. Thus, ethical climate cannot be implemented only by the formulation of ethical guidelines but also consists of the way in which organizational members act. RP 1 supports the view that leadership is one of the key drivers of CWB and that destructive leadership has negative consequences for the relationship between leaders and employees (Schyns and Schilling, 2013). Thus, further research is needed regarding the role of leader-member relationships and interpersonal treatment, which may influence the identification with the norms of a firm. For example, managers could set a good example concerning the integration of norms. Further, in RP 2 a situation was created where compliance with a code of conduct is not monitored and sanctioned. Such as discussed by Schwartz (2004) communicating code violations could be a way to enhance code effectiveness. It could prevent active sabotage especially for risk-averse individuals. Thus, further research concerning whether and how sanctions could prevent misconduct would be helpful for understanding the effectiveness of a code.

## **(2) Interaction Effect of Individual and Organizational Factors**

The dissertation focuses on individual factors which occur in competitive environments and might influence justice perceptions and reactions to unfairness. Moreover, there are other factors that could be relevant in competitive and unfair situations. For example, less attention has been given to individual factors that are related to attribution (Spector, 2011). The causal locus does not only influence emotion (Folger and Skarlicki, 1997) but also perceptions of justice (Beehr et al., 2004). Thus, a clear measurement of locus of control and the causal effect on CWB has to be strengthened. Besides, also positive emotion in the form of being proud

of being promoted or performing better in a task could have a motivational effect on performance and the intention to sabotage others (Tzafrir and Hareli, 2009).

Also, such as identified in RP 1, the results mainly depend on the way in which individual factors are measured. For example, in RP 4 emotions were measured by a questionnaire, but Johnson and Saboe (2011) state that many values, attitudes, and goals operate at implicit levels, so they occur outside of people's awareness, intention, and control. Thus, they operate in parts at implicit levels because they include values and goals that are in memory. In this case it would be more effective to use indirect measures of traits.

One further important point stated by Spector (2011) is that the role of personality in CWB is more complex than described in theoretical models and analyzed in empirical studies. In this dissertation project the effect of individual differences on sabotage was analyzed as a moderator effect, in the sense that, for example, emotions regulate the way in which individuals react to unfairness. Beyond that, there is a complex interaction between individuals and their environment. For example, the situational strength (situational demands) influences the relationship between personality and CWB (Smithikrai, 2008). Further, there is less contribution in the literature as to how personality influences CWB. Particularly, psychological mechanisms behind the regulation of emotions and certain behavior are mostly unexplored. For example, relationships of personality and CWB do not directly establish the proposed mechanism, and various traits could play a role in different steps in the CWB process. As a consequence, it could be more deeply analyzed as to why negative emotions occurred and the way in which way sabotage helps to regulate such emotions.

### **(3) CWB**

The studies in this dissertation focus on different forms of sabotage. RP2 analyzed non-collaborative behavior, such as destructive knowledge-sharing behavior, and in RP 3 and RP 4 harmful behavior, such as punishment and destroying output of the supervisor, was explored. Moreover, an analysis including other types of antisocial behavior, such as misreporting of financial results and corporate fraud, would yield further insight into the real effects of unfairness and the effectiveness of corporate norms.

Further research is also needed concerning the target of sabotage. It would be interesting to give the participants the opportunity to harm the organization directly rather than only the supervisor as in RP 3 and RP 4. For example, it is imaginable that some people harm the supervisor because this is the only option to regulate their negative emotions of unfairness and the only way to enforce fairness norms.

Further, the focus of the dissertation is on the negative intentions of sabotage in order to analyze destructive behavior. But such kind of behavior could be also positively motivated. Positive deviance is a prosocial behavior that departs from the norms of a referent group in honorable ways (see Morrison, 2006; Cadsby et al., 2016; Wiltermuth, 2011). Thus, sabotage could be motivated to enforce a fairness norm in an organization. Therefore, further research should also analyze the motives and psychological needs behind sabotage to understand the real intentions.

Scholars also have relatively less knowledge about the unfolding effects of justice and injustice over time. For example, Ambrose and Cropanzano (2003) found that it appears that the impact of procedural justice is established shortly after a decision, but that distributive justice continues to have an impact on attitudes much longer. It is critical to observe this in experiments which only look at behavior at one point in time. In this context Dalal (2005) states that it is important to observe the behavior of an employee in the long-term, especially the frequency with which the employee harms coworkers and with which frequency she or he helps them.

Further, the relationship between justice type and deviance severity has received sparse attention in the literature. Moreover, the relevant research focuses on deviance frequency (Folger and Skarlicki, 1997), rather than on severity. Ambrose et al. (2002) suggest that justice type has a direct or an additive effect on sabotage severity (McLean Parks, 1996; McLean Parks and Kidder, 1994). Thus a deeper understanding of the variance of sabotage behavior would be helpful to anticipate its consequences.

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**Part 2. Research Paper 1:**

**Counterproductive Work Behavior as a Function of Individual  
Differences and Organizational Factors – A Review of  
Experimental Findings**

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## **Abstract**

The work behavior of an employee is a function of individual and situational (organizational) factors that interact with each other and lead to productive but also to counterproductive outcomes. It is important to understand how different individuals react in certain situations in order to create a constructive work environment and to improve personnel selection and development. Empirical studies and theoretical models have identified a wide range of factors that influence counterproductive work behavior (CWB). Recent literature has mostly analyzed either individual or organizational factors, but only a few studies have tested the interaction of these factors and the psychological mechanisms behind CWB. As controlled experimental settings are useful to observe such interaction and mechanism, this literature review provides an overview of the main experimental findings in this research area. The examination of corresponding experimental studies shows that there are “hard” organizational factors (e.g., compensation schemes and competitive environment) and “soft” organizational factors (e.g., leadership and justice climate), which predict CWB. On the side of the individual factors personality traits, perceptions (e.g., justice and control) and emotional responses (e.g., anger) lead to individual differences in CWB. Further, the results depend on the observed type of CWB in the form of other individual characteristics becoming relevant for different types of CWB. The experimental findings also highlight that long-term observations of CWB are needed and that it is important to consider the way personality traits are measured.

## 1. Introduction

Scholars discuss how individuals could be motivated in an organizational context in order to increase performance and to manage behavior in the right direction for achieving organizational goals. Employee behavior is a function of individual and organizational factors. These factors work in conjunction and reciprocally (Fleeson and Nettle, 2008). Further, individuals are social creatures, who need to be motivated in a social context, where social norms are relevant. Motivation of employees can go in different directions. The literature distinguishes between job performance, organizational citizenship behavior (OCB), and Counterproductive Work Behavior (CWB) (Dalal, 2005). This article concentrates on CWB because CWB incurs costs for organizations in the form of bad job performance, sabotage, and high personnel turnover intentions. Therefore, it is important to understand and manage this kind of negative motivation.

Literature in the area of Motivation Theory distinguishes between two main influence factors in the range of motivation process: individual and organizational factors (Ambrose and Kulik, 1999). Cullen and Sackett (2003) present the main mechanisms by which personality can affect CWB in certain situations. The reason for this is that personality can influence CWB directly (through internal biological states or psycho-chemical forces) and also indirectly through attitudes, perceptions, cognitions, and emotions. Individual factors are difficult to change, but nevertheless it is important to understand them and their influence on human behavior in the workplace. Beshears and Gino (2015) state that instead of trying to rewire the human brain, organizations have to change the environment in which decisions are made in order to enable people to make wiser choices. Sauter et al. (1996) discussed characteristics of what they call "healthy work organizations". They argue that organizational effectiveness and employee well being depend on employee needs, fairness, cooperation, and reduction of conflict. Spector and Fox (2002) state that organizational scholars are beginning to recognize that employee and organizational health and well-being are not antithetical. A healthy company is one that is effective in the traditional sense (e.g., profitable) but at the same time promoting employee well-being (Jaffee, 1995). Moreover, Fine et al. (2010) criticize that organizations try to select employees with high integrity towards the organization and who fulfill the job's competency requirements but that

organizations do not take into account possible moderators of performance after the employees are hired. Organizations should also structure their (social) environment instead of selecting only for integrity. In a study with employees, the authors found that CWB is consistently low when integrity is high, but when integrity is low the situational variables will influence behavior. Based on the derived relevance of CWB, the underlying research question for this literature review is:

*How do individual differences in traits, perceptions, cognitions, and emotional responses influence the reactions of employees on situational (organizational) conditions in terms of counterproductive behavior towards the organization or other employees?*

It is assumed that the combination of different categories of organizational factors and individual characteristics will affect different types of CWB and the target of such behavior. Due to this the purpose of this literature review is to analyze and to give suggestions on how organizations can regulate employees' behavior through designing the right environment and by understanding and handling individual traits and differences. It is not only important to analyze whether and how organizational factors influence behavior but also which type of factors might affect what kind of individuals. To analyze the motives of employees who engage in CWB, it is useful to test this behavior in a controlled setting. Therefore, this article provides a selected summary of experiments in this research field and identifies the main organizational and individual factors as well as their interaction effects on CWB.

The paper is structured as follows: Chapter 2 explains the structure and the approach of the selection of literature. Section 3.1 defines the term CWB and gives a brief overview of the main (theoretical) concepts. Sections 3.2 and 3.3 summarize gradually the main theoretical and empirical findings regarding the relevant organizational and individual predictors of CWB. Following that, chapter 4 presents selected experimental studies which tested the interaction effects of organizational and individual factors on different types of CWB. Chapter 5 finally identifies several relevant research gaps and practical implications in the field of CWB. Chapter 6 then summarizes the main findings and limitations

## 2. Method

This article gives an integrated overview of the main results regarding the interaction effects of organizational and individual factors on CWB based on conceptual and empirical studies, followed in chapters 3 and 4. The review especially focuses on experimental studies which test the causal effect of these factors on CWB and the psychological mechanism behind this behavior. Many studies measure CWB by self-reports, but the problem is that this kind of behavior (especially sabotage) is hidden and therefore hard to observe. Thus, the focus lies on studies with a controlled setting, such as laboratory experiments, scenario experiments, and field experiments. The laboratory setting in experiments enables measuring and observation of CWB by means of factual actions.

Based on the taxonomy by Cooper (1988), the literature review can be categorized as follows: This review adopts a neutral perspective and does not have the aim to criticize or evaluate the experimental findings. Rather it sums up the key findings and provides suggestions for further research and practical implications. This paper could be attractive for scholars or professionals in the field of CWB who are interested in an overview of the relevant factors that influence different types of CWB. In addition, it could be relevant for individuals in leading positions who have to deal with personnel development and personnel selection or who are responsible for the composition of groups including members with different characters and abilities.

The research field of CWB is very wide and diverse. There are many factors which influence CWB, and a lot of CWB types exist. Therefore, the aim of this article is not to generate a complete model of CWB and its drivers but rather to give an overview of some suitable selected and representative factors. Thus, it is more a qualitative than a quantitative analysis. Following that, this article concentrates on the main CWB types and factors that have been identified in conceptual models and empirical studies. Further, this article is interested in the interaction effects of individual and organizational factors on CWB. Thus, it considers experiments that analyze both factors in combination. Hence, factors like group conflicts are excluded, because the focus lies on individual behavior. Moreover, gender effects have not been considered, since these are traits which cannot be influenced by the person her-or himself or regulated by the organization. By comparing the identified

factors and relationships of the theoretical background with the tested factors in the experiments, existing gaps in research are identified and it is investigated whether the conceptual predictions are confirmed in the experiments.

The following table illustrates the methodical procedure of this paper by highlighting the relevant specifications in italics.

**Table 2.1: Methodical Procedure**

Characteristic	Specification			
<b>Focus</b>	<i>results</i>	<i>methods</i>	theory	application
<b>Goal</b>	<i>integration</i>	criticize	challenge	
<b>Perspective</b>	<i>neutral</i>	position		
<b>Coverage</b>	completely	selectively	<i>representative</i>	central
<b>Organization</b>	historical	conceptual	<i>methodical</i>	
<b>Target</b>	experts	<i>science</i>	<i>practice</i>	public

Source: Adapted from Cooper (1988)

To identify experiments in this research field, this article uses the EBSCOhost Online Research Databases (Business Source Premier), and concentrates on articles that mention “counterproductive work behavior”, “organization” or “organization”, and “personality” in their abstracts. Based on the theoretical foundation and especially according to Berry et al. (2007) and Spector et al. (2006), the following keywords for CWB at work are derived: *counterproductive (work) behavior, counterproductivity, antisocial behavior, dysfunctional (work) behavior, (workplace) deviance, misbehavior, retaliation behavior, revenge, theft, aggression, fraud, withdrawal, abuse, turnover intentions, violence in the workplace, cheating, unethical behavior, norm violation, and sabotage*. Additionally, this article focuses on organizational and individual factors influencing CWB. Based on that, the following keywords were used to conduct the review: *organ\*, environment\*, situation\*, person\*, individ\**. Using an asterisk allowed us to search for all words that



include the letters that precede the asterisk and to accommodate different spellings. This literature review concentrates on experimental and laboratory studies and therefore searches for *experiment\** and *laboratory\**. Further, studies were selected which mentioned these factors and CWB types in their abstracts or subject terms in order to ensure that the studies treat these factors as their main topic. Another criterion is that individual and organizational factors in the experimental studies have both been analyzed to identify the interaction effects. This article also identifies relevant experimental studies through references and literature reviews from other papers. Based on the criteria mentioned above, this article identifies more than 50 experimental studies as relevant for answering the research question (see Appendix 2.A). This article selects these studies to see whether they capture the identified CWB types and individual and organizational factors.

Chapter 3 defines and summarizes the main organizational and individual factors in the context of CWB, which are the basis for the selection of the experimental studies in chapter 4.

### **3. Theoretical Foundation**

#### **3.1 Counterproductive Work Behavior**

To understand CWB it is necessary to range this term in the whole context of individual behavior. Besides job performance, CWB and OCB exist as an extra-role (deviant) behavior. OCB and CWB are not unrelated. Empirical studies have shown that there is a negative correlation between these two constructs (e.g., Sackett and DeVore, 2001; Spector and Fox, 2002). While CWB is a harmful behavior, OCB is defined as helpful behavior that goes beyond expected performance, is voluntary, and is non-rewarded (Organ, 1988). CWB can be generally defined as voluntary behavior that violates organizational norms and threatens the well-being of an organization, its members, or both (Robinson and Bennett, 1995). It includes acts which have the potential for harm and can be directed toward organizations or toward other people (Robinson and Bennett, 1995). Bennett and Robinson (2000) refer to it as organizational and interpersonal deviance. Most definitions can be integrated in the typology of deviant workplace behavior suggested by Robinson and Bennett (1995). The four categories are Production Deviance (e.g., wasting

resources), Property Deviance (e.g., lying and stealing), Political Deviance (e.g., gossiping) and Personal Aggression (verbal abuse). Production Deviance and Property Deviance are directed against the organization, while the target of Political Deviance and personal aggression are individuals.

CWB as behavioral deviance is associated with a wide range of terms, such as unethical behavior (Jones, 1990), deviant behavior (Robinson and Bennett 1995), dysfunctional behavior (Griffin et al., 1998), antisocial behavior (Robinson and O'Leary-Kelly, 1998), and organizational misbehavior (Vardi and Wiener, 1996). Similar terms are delinquency (Hogan and Hogan, 1989), retaliation (Skarlicki and Folger, 1997), and revenge (Bies et al., 1997). It also includes behaviors such as theft, lies, sloppy performance, sabotage, tardiness, or absenteeism (Spector and Fox, 2002). In a study by Koopmans et al. (2014) 695 experts from different professional backgrounds were asked to identify the main indicators for individual work performance, which includes CWB. Four relevant indicators for CWB have been identified: displaying excessive negativity, harming organization, harming co-workers or a supervisor, and purposely making mistakes.

Another form of explaining CWB comes from Cohen and Morse (2014). In an organizing framework they state that CWB is associated with low moral character. "Moral character can be conceptualized as an individual's disposition to think, feel and behave in an ethical vs. unethical manner, or as the subset of individual differences relevant to morality" (Cohen and Morse (2014), p. 43). Therefore, the current article is based on these findings and includes unmoral or unethical behavior in the definition of CWB. Unethical behavior is associated with breaking social norms rather than organizational norms, as in the strong definition of CWB, or organizational deviance (Appelbaum et al., 2006). Some overlaps exist between unethical behavior and CWB (e.g., misreporting work expenses). In this context, misbehavior as a form of norm violation has to be mentioned. According to Vardi and Wiener (1996), organizational misbehavior is defined as intentional action that

violates shared norms and expectations in the organization and/or core societal values, morals, and standards of proper conduct. <sup>1</sup>

The next two sections identify the main individual and organizational factors which predict CWB. It basically reviews meta-analytical and empirical studies as well as conceptual models in the area of CWB.

### **3.2 Organizational Factors**

Motivation research describes work motivation as a set of internal and external forces that initiate work-related behavior (Ambrose and Kulik, 1999). Similarly, Martinko et al. (2002) classified the antecedents of CWB into individual differences and situational variables. Based on this, Lau et al. (2003) present a qualitative and quantitative review of the main antecedents of CWB. They divided the situational variables into three categories:

- Organizational factors,
- Work factors,
- Contextual factors.

Organizational factors are organizational physical conditions, organizational climate, and employment conditions. Work factors are job characteristics as well as supervisory and peer (Lau et al., 2003). Contextual factors are, for example, employment rate and economic prosperity. Motivation research confirms the findings of Lau et al. (2003). Drawing on the review of over 200 studies of work motivation by Ambrose and Kulik (1999), environmental forces capture the organizational reward system, the nature of work, feedback on work performance, justice, organizational culture, and leader-member exchange (quality of relationship). Further, the long-term study by Ng and Feldman (2013) and the meta-analytical review by Schyns and Schilling (2013) emphasize the importance of the relationship between destructive leadership and negative outcomes in the form of CWB.

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<sup>1</sup> The authors show that organizational misbehavior especially depends on the degree to which personal values are consistent with core organizational norms (Person-Organization Value Congruence) and the perceived mistreatment by the organization (Personal Need Satisfaction).

Vardi and Wiener (1996) especially investigated predictors of misbehavior as a form of CWB (see section 3.1) in an integrative framework based on theoretical models. The main organizational factors are built-in opportunity, control systems, organizational culture, organizational cohesiveness, and organizational goals. Further, Kelloway et al. (2010) derived in a theoretical model that CWB can be viewed as a form of protest in which perceived injustice, instrumentality of protest, and identification with a group are motivators for social protest. These factors have been proved in practical studies as well. For example, Chernyak-Hai and Tziner (2014) used the Social Exchange Theory (SET) as a framework for understanding CWB and identified from two empirical studies that organizational distributive justice and climate are the main predictors of CWB and that this relationship is especially moderated by quality of perceived leader-member exchange. Yang et al. (2008) have also shown empirical evidence from a 288-case sample from six organizations that job stressors, such as quality of relationships at work and career advancement, influence well-being, job satisfaction, and turnover intentions. Based on a meta-analysis from 57 empirical studies, Hershcovis et al. (2007) present individual and situational predictors of interpersonal and organizational deviance with the focus on workplace aggression. The most relevant organizational factors in predicting work aggression are distributive injustice, procedural injustice, interpersonal conflict, situational constraints (job stressors, such as availability of resources), and job dissatisfaction. The authors also found that interpersonal injustice and poor leadership are the main predictors of supervisor-targeted aggression. Also Pindek and Spector (2016) emphasize in a meta-analytical review the strong relationship between organizational constraints and CWB.

It can be summarized that organizational justice, consisting of distributive, procedural, and interactional justice, is often quoted to predict CWB. A broad overview of 25 years of organizational justice research is given in the meta-analytical review by Colquitt et al. (2001) as well as in the meta-analysis by Cohen-Charash and Spector (2001). Moreover, it can be observed that leader-member exchange or leadership is an important determinant of employees' CWB and is interpretable as a target of CWB.

### 3.3 Individual Factors

In this section, this article looks more deeply at the main personal factors that are relevant for CWB. Additionally, to the organizational factors, Lau et al. (2003) define several individual factors which predict CWB. Relevant personal factors include: attitudes, personality characteristics (e.g., self-esteem<sup>2</sup> and self-efficacy), perceptions of job (e.g., inequity), and demographic characteristics. Complementarily, Spector (2011) has presented a model which shows how personality has the potential to affect the CWB process at every step. It can affect people's perceptions and cognitions, their attributions for causes of events as well as their emotional or affective responses, and their ability to inhibit aggressive and impulsive behavior. So, he distinguishes between:

- Personality (hostile attribution bias, narcissism, negative affectivity, trait anger, effortful control and locus of control)<sup>3</sup>,
- Cognition (appraisal and attribution),
- Emotion (anger, anxiety)
- Perception (perceived control)

This is conforming to the findings of Cullen and Sackett (2003). Accordingly, personality traits could have a direct causal influence on CWB and an indirect one by affecting attitudes and perceptual variables such as job stress, perceived justice, and dissatisfaction. Further, they can moderate the relationship between cognitive and emotional reactions to perceived organizational conditions and CWB.

#### 3.3.1 Personality Traits

As summarized in an empirical study by Sackett and DeVore (2001), the most relevant personality traits for CWB are the ones from the big five literature as well

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<sup>2</sup> See, for a meta-analytical review concerning the importance of self-esteem for CWB, Whelpley and McDaniel (2016).

<sup>3</sup> Grijalva and Newman (2014) found in a meta-analysis that narcissism is the dominant predictor of CWB among the dark triad personality traits. Narcissism is closely related to self-esteem and therefore **narcissism is** expected to influence how individuals interpret events that have the potential to threaten their self-esteem. **Effortful control** is relevant because it represents the capacity to focus and shift attention and to plan future actions. So, it concerns an individual's ability to inhibit aggressive and counterproductive impulses as well as the ability to plan constructive reactions to situations that cause negative feelings. (see, for a literature review, Spector, 2011).

as integrity related predictors<sup>4</sup>, namely conscientiousness, agreeableness, and emotional stability (see Eschleman et. al., 2015; Salgado, 2002).

In a survey based study, Penney et al. (2011) explained the effects of personality traits especially conscientiousness and emotional stability on CWB. They chose the Conservation of Resources (COR) Theory to describe the relationship and state that conscientiousness and emotional stability serve as personal resources that help employees to meet work demands and reduce psychological strains (see Penney et al. (2011) for a literature review). According to the COR Theory, strain outcomes are most likely when resources are threatened or insufficient to meet demands. The authors argue that the COR Theory makes a contribution to explaining this relationship by describing how traits are associated with resource investment strategies.

Further studies have analyzed special forms of CWB. In a meta-analysis, Hershcovis et al. (2007) identified trait anger, negative affectivity, and biological sex as predictors of work aggression. In an empirical study Hauge et al. (2009) determined target status, hierarchical position, gender, and age as main individual factors for CWB and especially for bullying of others. Williams et al. (2010) concentrated on cheating as a form of CWB and established in three different empirical studies the personality traits that are associated with cheating, namely: Machiavellianism, narcissism, psychopathy as well as low agreeableness and low conscientiousness. Unrestrained achievement and moral inhibition were successful mediators.

As mentioned in section 3.1, another form of explaining CWB comes from Cohen and Morse (2014). Based on the findings of an empirical study by Cohen et al. (2014), they state that CWB is associated with low moral character.<sup>5</sup> According to them, moral character captures three elements: 1) motivation to do good and avoiding bad, 2) ability to do good and avoid bad and 3) identity as a good or a bad person. One important motivational component of character is consideration for others because it motivates people to treat others fairly. The broad personality

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<sup>4</sup> See, for a meta-analytical review, Fine (2010); Harris et al. (2012); Ones et al. (2012); Sackett and Schmitt (2012); Van Iddekinge et al. (2012).

<sup>5</sup> This is also supported by Moore et al. (2012), who state that one important driver for unethical behavior is an individual's propensity to morally disengage. This is the way people cognitively process decisions and behavior with ethical import that allows those who are inclined to morally disengage to behave unethically without feeling distress (Bandura 1990, 1999, 2002).

dimension that is most closely linked to consideration of others is honesty-humility as a part of the HEXACO model of personality. A person who is high in honesty-humility is honest, modest, loyal, and fair and therefore negatively related to CWB (see also Ashton and Lee, 2008; Cohen et al., 2014; Lee et al., 2008; Marcus et al., 2007). Closely related to honesty-humility with a negative correlation is Machiavellianism (Cohen et al., 2014; Lee and Ashton, 2005), which is the tendency to manipulate and deceive others. An ability element of moral character is self-regulation. Conscientiousness, self-control and consideration for future consequences are traits that reflect self-regulation. Low conscientiousness (e.g., low self-discipline) is the strongest predictor of CWB (see, e.g., Berry et al., 2007, 2012; Cohen et al., 2014). Furthermore, people with low self-control are less able to control their impulses and are therefore more likely to engage in CWB. Individuals high in consideration for future consequences are less likely to engage in CWB in the form of aggression toward others when they believe that such behavior could be costly to themselves at a future point in time (Joireman et al., 2003). An identity element of moral character is the centrality of moral identity, which is the extent to which morality is important to an individual's private sense of self. Individuals with high moral identity are also high in honesty-humility and conscientiousness (Cohen et al., 2014) and are therefore less likely to engage in CWB (see, e.g., Aquino et al., 2009; Cohen et al., 2014). Situational factors can increase or decrease the accessibility of morality to one's self-concept, so trait-consistent behaviors only merge when situations afford such behavior.

### **3.3.2 Perceptions, Cognitions, and Emotions**

The next section explains more deeply the role of perceptions, cognitions, and emotions as personal factors in the CWB process. The argumentation is based on the theoretical framework of Fox and Spector (1999). The authors have developed a noted model of work frustration-aggression, with which they investigated the situational, dispositional, and affective antecedents of CWB. This model is suited to analyzing the relationship between situational constraints (events that frustrate the achievement of organizational and personal goals) and personal and organizational aggression. Aggression is a consequence of frustration, and frustration occurs when an instigated goal-response is interrupted or interdicted. Personality, control beliefs,

and estimation of likelihood of punishment were strongly associated with affective and behavioral responses.

The relationship between frustration and aggression is mediated by the affective response to the antecedent situation. Further personality characteristics, such as affective traits and perceptions of control, have an impact on the frustration-affective-behavioral response sequence. Negative affectivity is a dispositional tendency of an individual to experience negative emotions across time and situations.<sup>6</sup> Perception of control influences the relationship between affective response and behavioral response. The locus of control may impact the experience of frustration and the behavioral response to this frustration, because it refers to the extent to which people control reward at work. In the case where individuals believe that they control their own reward, they experience lower job stressors and anxiety (Spector and O'Connell, 1994). Despite that, individuals who believe that others control their rewards respond counterproductively to frustration in the form of sabotage (Storms and Spector, 1987). The model by Fox and Spector (1999) further suggests that the belief that one has the ability to harm the organization without being punished may be a strong predictor of deviance.

Similarly to the model of work-frustration-aggression (Fox and Spector, 1999), Spector and Fox (2002) present an emotion-centered model of CWB that integrates findings from several areas to explain the effect of variety of organizational and job conditions on emotions and CWB or OCB.<sup>7</sup> The findings support the idea that organizational factors, such as interpersonal conflict and injustice, elicit emotional reactions and negative emotions will tend to increase the likelihood of CWB. Further, both control over the situation and individual personality can affect how people perceive situations and finally react to this situation. In another attribution-based model, Spector and Fox (2010) analyzed the relationship between OCB and CWB and especially when OCB is followed by acts of CWB. Their main finding is that when the cause of demand is seen as internal to another

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<sup>6</sup> Negative affectivity is related to trait anxiety and trait anger. Individuals high in trait anxiety are expected to perceive more organizational stressors and to respond to them with more frequent and intense negative affective response. Trait anger is the likelihood that individuals will perceive a wide range of situations to be anger provoking and that they are more likely to feel anger (see, for these definitions, Fox and Spector, 1999).

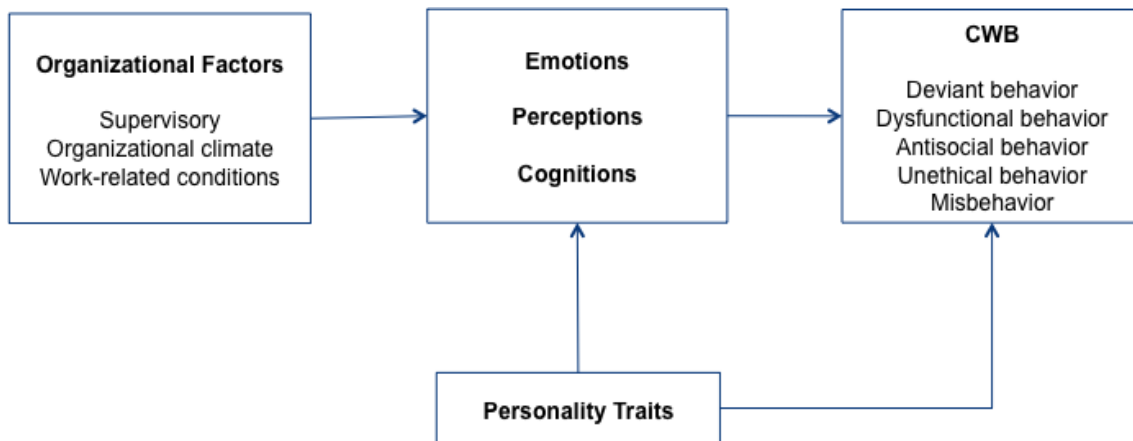
<sup>7</sup> See also Shockley et al. (2012) for a meta-analytic investigation of the relationship between emotions and job performance, OCB, and CWB.



person and controllable, CWB is likely to follow OCB. One main factor that affects interpersonal attributions for demand is hostile attribution bias, which is the individual's own attribution style. Spector and Fox also distinguish between the targets of CWB (organizational or individual). In this context, the relationship of an employee to a specific person is important in determining the target. If the individual has the same or a lower hierarchical level, CWB is likely to be directed toward that person while when the individual is a superior, the CWB is likely to be displaced to the inanimate organization. However, such as mentioned before, this depends on the likelihood of being punished for CWB as well. Berry et al. (2007) support the idea that the target of CWB is important in order to analyze which factors have an influence. Thus, it is useful to separate self-report workplace deviance scales into interpersonal deviance (ID) and organizational deviance (OD) dimensions.

### **3.4 Summary**

To sum up, based on Lau et al. (2003) and Spector (2011), this article concentrates on: (1) personality traits, (2) perceptions (e.g., justice, control), and (3) emotions (affectivity) as personality-based variables which predict individual differences in CWB. This article assumes that personality traits are given for every person and are less influenced by the environment or the organization. They rather function as moderator variables. Therefore, this article does not consider how the environment can change personality. Spector (2011) states that personality has the potential to affect the CWB process at every step. Personality can affect people's perceptions, cognitions, and their emotional responses. Personality traits include integrity variables and the variables from the big five-personality test. Further, personal characteristics, such as self-esteem and self-efficacy, are relevant personal factors for predicting CWB (Lau et al., 2003). Based on Spector (2011) additionally hostile attribution bias and locus of control are relevant personality traits for explaining the CWB process. The following Figure 2.1 summarizes the main constructs and their relationships based on the empirical and theoretical findings.



**Figure 2.1: Influencing Factors of CWB**

#### **4. Current State of Experimental Findings**

This chapter is divided into three main parts. First this article concentrates on experimental studies which test the interaction influence of personality traits and organizational variables on CWB. Based on the empirical findings from chapter 3, the next part summarizes the findings regarding the role of emotions and perceptions as important moderators between organizational factors and CWB. Additionally, in the third part, the experimental results concerning unethical behavior in combination with the moral character and norm violation as a form of CWB are presented. The considered studies can be divided into experimental scenario studies, field experiments, and laboratory experiments with real- effort tasks. It can be seen that the experimental findings mainly support the theoretical derivation of organizational and individual factors from sections 3.2 and 3.3.

## **4.1 Interaction of Organizational Factors and Personality Traits**

### **4.1.1 Justice**

As mentioned in section 3.2, one important organizational factor is justice, because fairness-related experiences involve high emotional reactions. Cohen-Charash and Spector (2001) and also Colquitt et al. (2001) state that fairness perceptions (procedural, distributive, and interactional) of employees relate to different work attitudes and behaviors. The literature review has shown that there are several experiments which test justice effects on CWB.

Colquitt et al. (2006) analyzed the effect of justice and personality on CWB and performance in a laboratory experiment with undergraduates. They identified personality traits from the Fairness Heuristic Theory, the Uncertainty Management Theory and the Fairness Theory, which moderate the effects of procedural, interpersonal, and distributive justice on task performance and CWB. These integrative theories can explain why justice matters to people and through which mechanisms. The identified personality traits from these theories are trust propensity, risk aversion, and morality. These traits are seen as moderators because they influence the individuals' perceptions of their treatment and the reactions triggered by these perceptions. Procedural justice (e.g., accuracy and consistency), distributive justice (meeting/not meeting participants' expectations about receipt), and interactional justice (respectfulness of authority communication) were manipulated by the experimenter via eight possible statements, resulting in a 2 x 2 x 2 between-subjects design. The task was a proofreading and a reading comprehension task. CWB was measured by the number of pens taken from each participant's penholder upon leaving the experiment. Taking a pen represents a form of theft. The results show a significant interaction effect of trust and interpersonal justice on CWB, but opposite to expected. Thus, the effect of interpersonal justice on CWB was stronger for trusting individuals. This result can be explained because individuals who are highly committed to an organization experienced a greater negative reaction as a result of unfair treatment than those who are less committed. Also, a significant interaction effect between procedural justice and risk aversion as well as interpersonal justice and risk aversion was shown. Risk aversion is associated with increased sensitivity for injustice, because risk-averse individuals are more likely to react to uncertainty with more anxiety (Lind

and Van den Bos, 2002). This can lead to withdrawal (Cable and Judge, 1994; Maehr and Videbeck, 1968) and passive retaliation. But risk aversion does not moderate the relationship between distributive justice and CWB, maybe because distributive justice is less relevant to the management of uncertainty. No effect was found for trait morality. This could be because the manipulated justice rules were less morally charged. What is missing in order to fully explain the effects is the analysis of the mechanisms through which personality traits could moderate justice effects.

Also Johnson and Lord (2010) expose that much less is known about the psychological mechanisms behind the relationship of fairness and (counterproductive) work behavior. The authors concentrate on self-identity as one of the main mechanisms (De Cremer et al., 2005). They argue that the way in which people define themselves relatively to others has implications on how they evaluate justice and react to fairness-related situations. So justice does have an effect on self-identity, and self-identity mediates the effect of fairness on attitude and behavior. Johnson and Lord (2010) criticize that researchers concentrate on the interdependent identity, which includes relational and collective identities. However, also individual identity, which is the self-definition based on people's separateness from others, plays an important role. At this individual level, behavior is driven by personal attitudes and welfare. Furthermore, they criticize that self-identity is measured on an explicit level although it operates outside an individual's awareness. Another problem in this context is that surveys and cross-sectional methodologies are often used to describe the effect of self-identity and behavior (Blader and Tyler, 2009; Olkkonen and Lipponen, 2006), but then issues of causality are not addressed and only behavioral intentions and self-reported behavior are measured. Moreover, researchers found an effect of justice on self-identity but how this is translated into behavior and the psychological mechanisms behind it is not analyzed. Thus, the authors present a study to test self-identity as a mediator of justice effect on trust and cooperative and counterproductive behavior. They manipulated fairness in a laboratory setting through unfair feedback about deserved credit points. The laboratory experiment with undergraduate students consists of a computer-based test battery for promoting employees into managerial positions in the emergency medical technician field. Based on this test the undergraduate students can deserve extra credit points. The causal effect of justice on multiple

identity levels and the effect of justice on actual behavior were measured. In particular, the study measures self-identity and justice effects in the way that it captures content at implicit levels.<sup>8</sup> Self-identity at an implicit level reflects the activation of interrelated values, goals, and behavioral scripts. Different levels of a self-concept scale and trust measured self-identity on the explicit level with Mayer and Gavin's (2005) five-item measure. CWB was measured through theft in the form that the participants could remove pencils. The main result is that interdependent identity mediated justice-based effects on trust and cooperation, while individual identity mediated justice-based effects on theft. Further, implicit identity scores fully mediated justice based effects on all three outcomes (trust, cooperation, theft), while explicit identity scores fully mediated effects on trust and theft. This shows that justice has implicit effects on attitudes and behavior and operates through identity activation.

Cohen-Charash and Mueller (2007) also tested the effect of unfairness on CWB with employed students. The authors bring out the importance of analyzing unfairness combined with emotions like envy in combination with personal traits like self-esteem in order to understand CWB. The analysis is based on the social exchange and attribution models of fairness. Envy involves the feeling of inferiority relative to others. Therefore, harming behavior helps the envious person to reduce this feeling of inferiority and to protect his or her self-esteem (see e.g., Heider, 1958, Cohen-Charash, 2009). Based on research, high self-esteem individuals react with violence to their threatened egoism (see Baumeister et al., 1996). Thus, they are more sensitive to unfair treatment and therefore they show a higher harming behavior. The social exchange perspective and the attribution model of fairness, which predicts contrary results, can explain the relationship between unfairness, envy, and CWB. Based on SET, employees show reciprocal behavior toward the organization as a function of fairness (Greenberg and Scott, 1996; Leventhal, 1976). The experience of envy in an unfair situation increases the levels of harming behavior and makes the unfairness and the harming behavior interpersonally focused. An opposite argumentation is based on the Attribution Theory. This theory predicts that envious individuals should experience more threat to their self-esteem

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<sup>8</sup> Word statement completion task (Vargas et al., 2007) and reaction time task (Kühnen and Oyserman, 2002)

in situations in which they attribute their inferior position to an internal cause, which means in a fair situation Mikulincer et al., 1989). Therefore, in a fair situation, more harming behavior occurs. In the first study, employed individuals were taking courses offering course credits. Perceived unfairness was measured in a monistic way and occurs from an unfavorable comparison for an individual's self-concept. Envy was stimulated by asking the participants (employees) to describe a situation of workplace envy that they had personally experienced.<sup>9</sup> The results support the social exchange perspective of fairness in organizations that higher envy and perceived unfairness lead to higher levels of interpersonal CWB, especially among high-esteem individuals. The attribution model of fairness cannot be supported, maybe because of the process of measuring fairness in a monistic way and because of measuring the specific emotion of envy, which results in a threat to one's self-concept and is higher in the unfair than in the fair treatment. The findings suggest that organizations should simultaneously reduce levels of unfairness and envy in order to reduce interpersonal CWB. Also, considering the distribution of rewards among high esteem people can reduce CWB.

Houser et al. (2012) consider fairness in the context of social norms, beliefs, and expectations as individual differences. Results from a laboratory experiment show that individuals are more likely to violate the social norm (no-cheating norm) if they believe that others do not adhere to a different, unrelated norm (the fairness norm). This is called the cross-norm inhabitation effect (Keizer et. al, 2008). De Cremer and Van Hiel (2010) analyzed emotional reactions. In contrast to other papers, the authors analyzed whether someone becomes angry when another person is treated fairly or unfairly. Based on the SET, it follows that another person's experience with procedural justice should influence one's own reactions. Results show that people do seem to care about the justice experiences of others, as they influence their own emotions, so emotions can be used as a diagnostic variable indicating whether people are concerned about the justice enacted.

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<sup>9</sup> Envy was measured by episodic envy (see Cohen-Charash, 2009), interpersonal CWB was measured by harming behavior (see Cohen-Charash, 2009), and perceived unfairness was measured by the objective injustice beliefs scale (see Smith et al., 1994).

In an experimental study with students and employees, Aquino et al. (2006) analyzed the effect of power<sup>10</sup> as an individual difference and the direct and moderating effect of the procedural justice climate on responses to harm or wrongdoing in the workplace (revenge), forgiveness, and reconciliation. The authors argue that when the victim has a lower status than the offender, he or she prefers not to seek revenge because of fear of counter-revenge (Aquino et al., 2001; Bies et al., 1997; Heider, 1958; Kim et al., 1998) and thus relies on the organization to punish the offender. In a laboratory study, the responders in the experiment were asked to read a half-page story about a workplace conflict between two co-workers. By giving different information, the offense type<sup>11</sup> and procedural justice climate were manipulated. Procedural justice includes procedures for giving promotion and pay raises, terminating employees, disciplining employees, and evaluating employee performance. The main result is that when victims have a power advantage over their offenders or when they believe the organization will not punish the offender, then victims will punish the offender themselves. If procedures were unfair, employees would not believe that their interests were protected by the organization, so they would take justice into their own hands by seeking personal revenge. Thus, injustice was theorized as potentially amplifying a conflict between employees into vengeance, but not starting the conflict.

Further experiments in this area were conducted by Umphress et al. (2009), who analyzed the influence of distributive justice and the presence of a code of conduct on lying to and stealing from a supervisor; by Seifert et al. (2010), who treat fairness perceptions in the context of financial statement fraud; by Thornton and Rupp (2015), who analyzed justice climate in combination with group moral identity and prosocial as well as deviant behaviors in groups and also by Lasson and Bass (1997), who state that there is a gray area in which one's behavior is influenced by situational factors, for example, by perceived equity. Honesty, as an individual difference, determines the breadth of this gray area in the context of organizational deviance.

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<sup>10</sup> Power or status can be divided into the status of an individual relative to his or her offender and the victim's absolute hierarchical position within the organization.

<sup>11</sup> Justice related type such as rule violation and not-justice related type such as goal-obstruction.

### 4.1.2 Leadership

As derived from the literature review in section 3.2, the quality of perceived leader-member exchange is another factor when predicting CWB. The literature review on experimental studies yields that leadership in combination with personal factors is an important predictor of (interpersonal) CWB.

Mayer et al. (2012) analyzed in an experiment with junior and senior-level undergraduates how leader mistreatment and self-uncertainty influence deviant behavior and *how* this relationship is mediated by hostility. Regarding the SET, there is a positive relationship between leader mistreatment and harmful behavior (see e.g., Bradfield and Aquino, 1999; Duffy et al., 2002; Greenberg and Scott, 1996; Skarlicki and Folger, 1997). Consequently, positive treatment will be reciprocated in a similarly positive way (Skarlicki and Folger, 1997). The theory is limited in that it cannot explain when and how leader mistreatment becomes more or less salient to employees. According to Mayer et al. (2012), uncertainty and hostility are relevant psychological factors behind this effect. Mistreatment is a signal that an employee is not thought to be competent, valued, and respected. This signal causes negative affective states. Particularly as prior theoretical and empirical work has shown, hostility tends to arise when individuals are confronted with serious or threatening situations that endanger their status (Smith et al., 1993) and self-esteem (Baumeister and Boden, 1998). Thus, Mayer et al. (2012) argue that leader mistreatment should have a higher influence on hostility when people are uncertain about their competence. Hostility itself is related to retaliatory impulses and harmful behavior. Employees with higher uncertainty about their competences will be more likely to react deviantly to leader mistreatment, because their uncertainty causes more intense hostility. In the experiment, virtual teams were built and got the opportunity to communicate personal and task-related information. One leader in the team was chosen and he or she got the opportunity to evaluate the received information in a good and a bad manner (leader mistreatment manipulation). Further, the participant had to report their thoughts and feelings of competence uncertainty (competence uncertainty manipulation) and the feelings of hostility (hostility measure). After the experiment the subjects got the chance to participate in another study conducted by the team leader in order to complete his Master thesis. The participation in this study was interpreted as a signal of support



for the team leader, and deviant behavior in this context was seen as a lack of motivation to conform to normative expectations of the social context. The results show support for the hypothesized relationship between leader mistreatment, competence uncertainty, and hostility and its effect on deviant behavior. So, leader mistreatment is a strong motivator for deviant behavior of employees who are uncertain about their job competences. The psychological mechanism behind this relationship is the higher level of hostility.<sup>12</sup>

Jones and Kavanagh (1996) analyzed the effect of leadership as the organizational factor on the intentions to act unethically. They additionally distinguished between three types: Quality of the work experience, peer influences, and managerial influences. Further, they took two relevant individual variables into account: locus of control and Machiavellianism. With a 2 x 2 x 2 experimental design, the three situational variables “quality of work experience” (good vs. poor), “peer influence” (unethical vs. ethical) and “managerial influence” (unethical vs. ethical) were manipulated. The individual variables were measured by a questionnaire. Subjects (undergraduate students) were asked to read a short scenario which asked them to assume that they were in a situation in which there was an ethical dilemma about depicting an employee who was tempted to pad his or her trip expense report. The results show that individuals who are externally focused are more likely to behave unethically (expense report padding), because they perceive outcomes to be from external forces which are beyond his or her control. Another important personality trait is Machiavellianism. Findings show a high support for the hypothesis that individuals with high Machiavellianism and bad work experience (underpaid or overworked) are likely to behave unethically, because they tend not to be easily swayed by loyalty, and they lack concern for conventional morality. Also, peer influence and managerial influence have a significant effect on unethical behavior. The findings implicate that an organization is able to generate an ethical environment through ethical norms, good quality of work experience, and sanctions against managers for engaging in unethical acts. As Jones and Kavanagh (1996) state, this also implicates that recruiting and

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<sup>12</sup> Results by Guyll and Madon (2004) from an experiment where self-relevance conditions were manipulated by scenarios, support the hypothesis that high hostility leads to higher levels of anger and negative evaluations of others, when individuals experience a self-directed threat.

selecting individuals who are more likely to behave ethically is not enough, but rather an organization should structure the social environment in an ethical sense.

Mitchell and Ambrose (2012) also analyzed the behavior of employees in dependence on the behavior of their supervisor. Especially they looked at the employees' behavioral reactions (constructive or destructive) to supervisor aggression and analyzed the individual factor (locus of control) and situational factors (fear of retaliation and behavioral modeling). Destructive reactions could be aggression against the supervisor and co-workers. Constructive reactions are problem solving in order to address the supervisor aggression. According to the Social Cognitive Theory of Bandura (1986), personal control influences reactions to aggression, and locus of control is such a personal trait which involves the individuals' belief that events are contingent on their own control (e.g., Bennett, 1998; Martinko and Gardner, 1982; Martinko et al., 2002). Externals believe that they do not have the ability to change the environment and therefore they tend to react destructively to threat, while internals are self-determined and motivated to control their environment and therefore act more constructively (e.g., problem solving, see Ng et al. 2006; Perrewe and Spector, 2002 for review). In sum, locus of control serves as a moderator of the supervisor aggression-employee behavior relationship. Situational moderators for this relationship are the fear of retaliation and behavioral modeling. Fear of retaliation influences victims' responses to aggression (Frustration-Aggression Theory, Social Learning Theory). In this context, power of the harm doer influences the reactions. Behavioral modeling is based on the Social Learning Theory (Bandura (1973) and the Social Information Processing Theory (Salancik and Pfeffer (1978)). So, watching others makes others inclined to engage in similar behaviors, because they for example learn about expected work behavior. Thus, the positive relationship between supervisor aggression and retaliation (aggressive reactions against the supervisor) is predicted to be stronger when aggressive modeling is high. In the experimental study<sup>13</sup> with undergraduates, the authors manipulated aggression (high, low) and fear of retaliation (high, low). The participants were asked to help the management department chair by completing an instructor evaluation and a management

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<sup>13</sup> The experimental study is complemented by a cross-sectional field survey (Study 2).

department services survey. Therefore, graded assignments were distributed and the aggression was manipulated with instructor comments written on the graded assignments. Furthermore, participants had to evaluate the instructor. The fear of retaliation was manipulated by having the participants write their name on the instructor evaluation form. Locus of control was measured by an interpersonal (locus of control) subscale (Paulhus, 1983). Results show that fear of retaliation heightened the awareness about the threatening situation and made victims more likely to solve problems. Further results support the hypothesis that internals attribute the cause of outcomes to their self and have a higher self-control and therefore are likely to engage in more proactive independent problem-solving behavior (reconciling with the supervisor and reporting the supervisor to authorities). Aggressive modeling is shown to strengthen the effect of supervisor aggression on retaliation and co-worker displaced aggression.

Grover (2014) brought an interesting aspect into the discussion about the influence of leadership. He states that it is not only important how the leader behaves (honestly or dishonestly) but also how followers perceive the behavior of the leader. He identified in an experimental study that followers' moral identity acts as a perceptual filter of leaders' honesty and heightens the awareness of the situation. In the experimental scenario study, the leader satisfaction of students was measured. A political setting was created and three variables were manipulated: whether the political leader lies or not, the political party, and the politician's gender. The moral identity of the students was measured by Aquino and Reed's (2002) internal moral identity scale. Results show that followers were more satisfied with honest leaders, and this effect was moderated by followers' moral identity. Thus, the more central morality is for followers' identity, the more they are unsatisfied with leaders who lie. As a consequence, it can be concluded that not only the leaders' but also the followers' characteristics are important for behavior, because how followers value dishonest and honest behavior influences the extent of dishonesty.

### **4.1.3 Compensation and Competition**

Section 3.2 derived that organizational reward systems capture environmental forces for CWB (Ambrose and Kulik, 1999; Lau et al., 2003). The literature review shows a wide range of experimental studies which analyzed effects of compensation schemes. But this article only concentrates on those which capture individual factors and predict CWB, especially on cheating and sabotage. In this context, competition is also considered, which is introduced through compensation schemes (e.g., tournaments). Typical tasks for measuring cheating behavior in experiments are, for example, flipping a coin (see e.g., Houser et al., 2012), rolling a dice (Fischbacher and Föllmi-Heusi, 2013), or sender-receiver games with asymmetric information (Gneezy, 2005) as well as finding pairs of numbers that add up to 10 in as many matrices as possible (Mazar et al., 2008).

Charness et al. (2014) looked at the role of status seeking as individual difference and ranking feedback (competition) in sabotage and cheating activities. The experiment with undergraduate students contained a decoding task and consisted of four treatments: baseline treatment, ranking treatment, sabotage treatment, and redemption treatment with and without symbols to demonstrate the ranking in the group. Participants are matched in groups. In the ranking treatment, each participant was informed about her relative performance in the group. In the sabotage and redemption treatment the participants could pay to change their relative performance by reducing performance of the co-worker (sabotage) and by purchasing additional units of output (redemption). Buying redemption and sabotage points showed status-seeking behavior, because the ranks were shown on the screen to the group members. It also affects the social image of the participant, so also the effect of group identity on behavior could be analyzed. Results show that there is an inverted U-shaped relationship between performance and sabotage. Those who are not the best performers are more likely to sabotage but only target the participant who is ranked immediately above them. Further, rank feedback even under flat-wages increases sabotage behavior, especially in the treatment with symbols, which reinforce competitive preferences. So, feedback seems to encourage competitive individuals to invest in status-seeking activities. But making group identity more salient helps to reduce sabotage. Group identity favors rivalry but discourages destructive competition.

Belot and Schröder (2013) studied CWB in a principal-agent setting. Different pay schemes were manipulated: competition, fixed pay, and piece rate. The authors introduced a new experimental design that allows them to study various forms of CWB and test them at the same time. Participants were asked to identify euro coins and report their output. CWB in this task included making mistakes in the identification task, lying in the report, and stealing coins. None of these CWB types were offered explicitly. There existed no monitoring, so that participants were not punished for CWB. The performance was measured by self-reports at the time of payment. Results show that the highest productivity (number of coins identified correctly) is in the competition treatment. Further, the total reporting error and direct inflation of the reports as a form of CWB were the highest under competition and lowest in the piece rate treatment. This could be explained by the preference to shift the inequality in the competition treatment (unequal outcomes) in one's favor (Grund and Sliwka, 2005). Theft as a form of CWB shows no significant differences across treatments. Further, the authors argue that different social norms are associated with different forms of CWB. People who care about social norms would, for example, not choose theft or direct inflation but rather indirect inflation of the report or reporting errors ("honest mistakes"). Significant reports were found for CWB in the form of an incorrect report.

Murphy (2012) states that fraud in the form of misreporting is associated with opportunities for fraud and incentives. Further, a third component is relevant and much more unexplored: attitude and rationalization. In an experiment which provided the opportunity and motivation to misreport and to manipulate different types of rationalization, the author found that predispositions in the form of the attitude to misreport and the personal trait in form of high Machiavellianism lead to higher misreporting, and individuals with the high Machiavellianism experience fewer feelings of guilt when they misreport. Further, individuals use rationalization to reduce negative emotions as a consequence of misreporting. Mayhew and Murphy (2014) support the findings of Murphy (2012), which are based on Badura's Theory of Moral Disengagement. Mayhew and Murphy (2014) examined experimentally the emotional and cognitive processing of individuals facing authority instructions to misreport. They found support for rationalization in the form of displacing responsibility as well as moral justification by stating that misreporting is a way of helping their superior.

Further experimental studies tested individual abilities (see Schwierer and Weichselbaumer, 2010) and productivity (see Gill et al, 2013) as predictors of cheating in a competitive environment. In this context, Rigdon and Esterre (2014) state that the results mainly depend on the nature of cheating. In the experiment by Schwierer and Weichselbaumer, the participants had the chance to cheat by simplifying or speeding up the solution of the maze (inflating own performance) in the online maze game (see Gneezy et al., 2003), while in the experiment by Rigdon and Esterre (2014), the participants cheated by reporting higher scores in the matrix search task (see Mazar et al., 2008).

Yaniv and Siniver (2016) emphasize that the risk of being caught and punished is relevant for the amount of cheating. Contrary to the findings of a laboratory experiment by Ariely (2012), the authors argue that in a perfectly safe environment, many people would cheat to a large extent, and not just a little bit. In the long-term, the incentive to commit a crime (e.g., to cheat) and the incentive to take a risk should be considered. Especially cheating depends on the risk of being caught and punished and thus on the risk attitude of people. Thus, in their laboratory experiment with students based on the one by Ariely, the authors created a safe setting for the participants to cheat in. Finally, they found that when people can cheat in order to receive money which they do not deserve, they cheat just a little bit, but they cheat to a large extent in order to avoid paying money that they owe.

Harbring and her co-authors (2007, 2008, 2011) have contributed to the CWB discussion by experimentally analyzing sabotage as a form of CWB in the context of compensation and competition. The experiments give important hints on how to develop the work environment in order to reduce or avoid sabotage. The authors concentrated on situational variables such as tournament size, fraction of winner and loser prizes, corporate contest, and compensation schemes as possible factors which influence sabotage in the workplace. Because the experiments did not capture individual factors, this article only summarizes briefly the main results. One main result is that in line with the Theory of Inequity Aversion (Fehr and Schmidt, 1999) participants exert too much sabotage in relation to productive effort, because they want to reduce the payoff difference between themselves and the principal by exerting such an inefficiently high amount of sabotage (Harbring and Irlenbusch, 2008). In a laboratory experiment with students, Harbring et al. (2007) analyzed sabotage in corporate contests where heterogeneous employees compete for a

prize and can improve their own ranking position by harming their colleagues. The findings show that not only is the own type of player relevant for the level of sabotage but also the composition of different types of players in a contest. The revelation of the identity of the saboteur seems to strengthen or weaken these effects. Moreover, Harbring and Irlenbusch (2011) tested wage spreads, communication, and framing as possible factors of sabotage in a principal-agent setting, where the principal can choose wage contracts. To generate a realistic setting, the authors chose repeated tournaments between the same agents. Further, they framed the setting by using the words “employee“, “effort“ and “sabotage“. Another aspect that is important in organizations is the communication between the employees. Results indicate that framing the situation as an employment context and explicitly using the term “sabotage” reduce sabotage. Further, the possibility to cheat enhances cooperation but only if the interaction is repeated. A key finding is that in the presence of tournament incentives, harmful activities cannot be reduced by a supervisor’s (principal’s) or employer’s (agent’s) kind actions. So, agents react reciprocally to higher wages by exerting higher effort even in the presence of tournament incentives. However, sabotage is not reduced.

#### **4.1.4 Further Work-Related Factors**

Next, further factors are briefly demonstrated, which are widespread in the literature and have been identified as CWB-predicting factors (see also section 3.2). These are: control systems and goal setting. Because these factors are not linked in an adequate manner to individual factors, the results of the experimental findings are only presented briefly.

First, control systems as an organizational factor for CWB (see Vardi and Wiener, 1996) are analyzed. Experiments have shown counterproductive effects of formal control (see, e.g., Christ, 2013; Kajackaite and Werner, 2015) as well as positive effects, if it is legitimate and averts antisocial behavior (see e.g., Schnedler and Vadovic, 2011). Christ (2013) analyzed in a laboratory experiment with graduate and undergraduate students how formal control as a situational factor contributes to employees’ negative reactions and leads to dysfunctional behavior. The results mainly depend on employees’ beliefs regarding management’s intentions when implementing control and employee’s preferences for reciprocity.

Employees have preferences for social norms (e.g., reciprocity, fairness, trust) and formal controls can crowd out employees preferences for these social norms (Fehr and Gächter, 2000; Frey, 1993), because they perceive distrust (Christ, 2013). Regarding the Theory Of Reciprocity, Christ (2013) argues that employees are likely to make tradeoffs between rewarding the trusting action and retaliating against the control when they receive conflicting trust signals from managers, such as high wages coupled with control. Attribution Theory further predicts that when control is imposed without clear intentions (uncertainty), employees are likely to attribute it to management's lack of trust rather than to various environmental characteristics (Gilbert and Malone, 1995; Ross, 1977). This signal of distrust can result in dysfunctional behavior (diminished effort, theft). In a 3 x 2 x 2 experimental design, the source of control<sup>14</sup>, the existence of control (yes or no), and feedback, indicating the number of points earned in the period (yes or no), were manipulated. The experiment is a variation of the dictator game, where control was induced by requiring a minimum transfer of points between two players (manager and employee). The findings show that when control is imposed, employees transfer the fewest points in the endogenous condition, followed by the uncertain and the exogenous condition. Further, the employees are more likely to attribute the negative action of imposing control to the manager and more positive action to the computer. In a second experiment, managers got the opportunity to entrust employees with resources (in the form of points) and send an explicit trust signal (delegating responsibility) that may be contradicted by the implementation of a formal control. Findings support prior research that employees exhibit positive reciprocity and repay managers who entrust them with more resources.

A lot of studies have explored the role of goal setting for productivity and task performance. Schweitzer et al. (2004) analyzed the role of goal setting in motivating unethical behavior (lying about productivity) in a laboratory experiment with undergraduates. The task was a word creation task and three conditions were manipulated: do-your-best condition, mere goal condition, and reward goal condition. According to SET, goal attainment is associated with psychological

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<sup>14</sup> Endogenous control was manipulated by minimum transfer requirement introduced by the manager, exogenous by the computer, or uncertain with a 50 percent chance that the manager or the computer would impose control.



rewards, while goal failure leads to psychological costs. The results of Schweitzer et al. (2004) show that participants in the goal conditions have a significantly higher level of lying (overstatement of productivity) than people in the do-your-best condition. Participants were more likely to overstate their productivity when they were close to rather than far from reaching their goals. In sum, people balance psychological costs (negative self-perception) and psychological benefits (psychological rewards for attaining goals). Also an analysis can be found in Niven and Healy (2016), who tested goals and unethical behavior as well as Soman and Cheema (2004), who analyzed negative emotional reactions on goals.

## **4.2 Emotions as a Driver of Counterproductive Work Behavior**

So far, experiments have been observed which treated CWB in combination with organizational factors, individuals' perceptions (e.g., control and justice), and personal traits (e.g., locus of control and self-esteem). Besides these factors, Fox and Spector (1999) emphasize the importance of emotions or trait affectivity for behavior. The literature review yields results concerning experimental work that concentrate on emotion as a moderator between organizational factors and work behavior.

Belschak and Den Hartog (2009) analyzed the consequences of positive and negative performance feedback on emotions and extra-role behavior in a scenario experiment. They argue that feedback affects emotions, and this emotional reaction mediates the relationship between feedback and CWB. Based on the Frustration Aggression Theory, frustrating or negative work events lead to emotional reactions such as anger and frustration, and this fosters aggressive reactions in the form of CWB (Chen and Spector, 1992; Fox and Spector, 1999). In a scenario experiment with students and working adults, participants were asked to imagine being a member of a department in a large organization. Positive and negative feedback and the way the feedback was communicated (publicly or privately) were manipulated. CWB was measured on a 7-point-Likert scale. The results show that the relationship between negative feedback and CWB intentions is positively mediated by the discrete negative emotions of frustration and anger. This suggests framing feedback in a positive way to cause positive reactions by employees.

Further research is needed on whether negative feedback or the lack of positive feedback mediates CWB.

Feys et al. (2013) analyzed, through an experimental scenario study with employees of a health care organization, the impact of co-workers receiving recognition at work on emotions (positive and negative) and on behavioral intentions (interpersonal CWB and OCB). Based on the Social Comparison Theory, co-workers' emotional reaction to a given recognition of other colleagues by a superior depends on the relationship quality between co-workers and colleagues. Further, high quality relationships are influenced by the similarity of people (Lockwood and Kunda, 1997). Thus, if one of two colleagues in a high quality relationship is similar to the other and receives positive recognition, the other will feel good because he or she believes that he or she might be able to gain the same recognition as the other person. The authors argue that other-orientated recognition will lead to interpersonal CWB when relationship quality is low. The experiment was a 2 x 2 between-subjects design. Recognition through social comparison information (positive vs. negative) as well as relationship quality (good vs. poor) were manipulated. For every condition, one scenario was created. The scenario method is based on the study by Belschak and Den Hartog (2009) who also induced emotions by means of vignettes, as well as the study by Bui and Pelham (1999), who experimentally offered social comparison information to the participants. Positive and negative emotions were measured via a questionnaire on a Likert scale and interpersonal CWB via CWB items taken from Kelloway et al. (2002). The results support the hypothesis that positive recognition leads to negative emotions (disappointment and frustration) and the highest amount of interpersonal CWB when the relationship quality is low. Thus, it can be concluded that recognition programs as motivational strategies should only be implemented in organizations under well-defined conditions, maybe in a private environment if the quality of the relationship of the employees is low.

Greitemeyer and Rudolph (2003) analyzed in an experiment with eight different scenarios the effect of emotions on prosocial and antisocial behavior (aggression) from an attributional perspective. They look at perceived controllability, sympathy, and emotions such as anger. They argue that emotions provide the bridge between cognition and behavior. In two experiments with students, the type of behavior (prosocial vs. antisocial), level of control in the given scenario

(controllable vs. uncontrollable) and the type of situation (social vs. achievement) were manipulated. The results show that the relationship between control and behavior is mediated by emotions. In general, more control is related to less sympathy and more anger. Further, more sympathy and less anger leads to more helping behavior. Particularly prosocial behavior is mediated only emotionally (presence of sympathy and absence of anger), while antisocial behavior involves both emotional and cognitive mediation through attributional thoughts of responsibility/controllability. This means that responsibility does not only influence emotional reaction to an event but also the behavioral reaction (aggression). So, aggressive behavior might have a colder, more reason-guided cognitive basis.

### **4.3 Unethical Behavior and Norm Violation**

#### **4.3.1 Moral Character**

Cohen and Morse (2014) extended the CWB definition in the form of deviant behavior by looking at the moral character of an individual and unethical behavior. In the context of moral character, self-concept and self-control were identified as the relevant individual factors. The following section presents experiments which explain the influence of these personal characteristics.

Mazar et al. (2008) have shown in six experiments, which involved multiple-question tasks and in which participants (students) were paid according to their performance, that when people have the ability to cheat, they do cheat, but the magnitude of dishonesty per person is relatively low. Awareness of honesty standards, financial incentives (i.e. external benefits), and the possibility to cheat (to report wrong results) were manipulated. The study treats the Self-Concept Maintenance Theory, which describes that people have two competing motivations: gaining from cheating vs. maintaining a self-concept as honest (Aronson, 1969; Harris et al., 1976). Two mechanisms are relevant for self-concept maintenance: categorization and attention to own moral standards of conduct. Categorization means that people categorize their actions into more compatible terms and rationalize their actions, so that they can cheat without affecting their self-concept negatively. Malleable categorizations are those that allow people to reinterpret them in a self-serving manner. Mazar et al. (2008) argue that the more people attend to their own moral standards the more dishonest action is to be reflected in their self-

concept, which will cause them to adhere to stricter delineation of honest and dishonest behavior. Summarizing the results, it can be said that there is a range of acceptable dishonesty that is limited by internal reward considerations. Participants are more sensitive to contextual manipulations related to self-concept than to cost and benefits of dishonesty. The level of dishonesty drops when people pay more attention to honest standards and rises with increased categorization malleability. Further experimental studies support these results. For example, in an experimental study on cheating, Fischbacher and Föllmi-Heusi (2013) as well as Malcolm and Ng (1989) found that subjects only cheat to the limited extent of avoiding an unfavorable comparison with others (self-other comparison). People want to appear as having favorable traits not only in front of others but also when thinking about themselves. Further, Gino and Mogilner (2014) state that organizations should motivate their employees to think about themselves rather than about the rewards they can earn by cheating. They manipulated money and time as factors which influence cheating. The participants (students and staff members at a university) were primed to think about money and time in a scrambled-sentences task. An important result is that cheating behavior does not stem from money but from shifting people's attention to time, which decreases dishonesty because time increases their self-reflection.

Ploner and Regner (2013) found that moral balancing is an important factor in individual decision-making. Moral Balancing Theory (Nisan and Horenczyk, 1990) suggests that people keep account of their self-image over time. In a dictator game, the endowment (low and high), the possibility to cheat, and the moral self-image were manipulated. Self-image was endogenously manipulated in the form that the participants could choose whether they want to act dishonestly or not. The study focused on the dynamic aspects of moral behavior and analyzed whether the decision to act morally is affected by the inter-temporal context. The results of the study support the idea that people engage in moral balancing, so individuals keep account of their self-image over time (moral cleansing and moral licensing, see also Meub et al, 2015; for the time aspect in moral decision making, see also Gneezy et al., 2014). Further experimental studies on moral character treated self-control and moral identity as predictors of CWB. Gino et al. (2011) analyzed how self-control influences "impulsively cheating". In this context, dishonesty, moral awareness, and moral identity influence the results. The authors argue that people with high self-control react less aggressively and display less CWB. Further, the relationship

between self-control and unethical behavior (cheating) is mediated by the ability to recognize moral values (moral awareness) and is moderated by moral identity. Individuals with low self-control do not have the resources to identify moral issues, and are therefore more likely to act unethically. But when the moral identity is high, these resources are not needed and therefore individuals act less dishonestly when their self-control resources are depleted. In the first study, self-control depletion was manipulated by an evaluation task, and with a problem-solving task participants got the opportunity to cheat by reporting higher performance. Results support the hypothesis that depletion of self-regulatory resources increases unethical behavior. In the second study, an additional task (word-completion task) was added to assess ethical saliency and therefore to measure moral awareness. Results support the mediating influence of moral awareness between self-regulatory resources and cheating. In the next study, moral identity was measured additionally and supported the moderating effect. So, depletion increases participants' tendency to cheat but only among participants with low moral identity. Further, a last study analyzed whether refraining from unethical behavior consumes self-control. The authors show that resisting unethical behavior depletes self-control resources. The results are supported by Mead et al. (2009). The authors show that depleted participants are more likely to put themselves in a situation that enables cheating and they also cheat to a greater extent than non-depleted people. This indicates that when self-control has been weakening by depletion of resources, selfish and dishonest behavior increases. For similar results, see also Joosten et al. (2014).

Other experimental studies have also emphasized that moral thinking depends on the status of a person. Demarree et al. (2014) indicate that the status of a subject influences thinking (secondary cognition, Experiment 2). Undergraduates were primed in a word completion task for high and low power. To activate different mental contents, a memory task was induced for prosocial and antisocial behavior. Results show that high power increases reliance on one's current thoughts, so high power produces more antisocial (prosocial) judgments and behavior if thoughts are antisocial (prosocial). Further studies by Anicich et al. (2015) and Fast and Chen, 2009 support the relevance of distinguishing the ranking of individuals in order to predict unethical and aggressive behavior.

### **4.3.2 Social Norms in Groups and Norm Violation**

Related to the understanding of CWB by Cohen and Morse (2014), CWB can be generally defined as voluntary behavior that also violates social norms (Appelbaum et al., 2006) rather than only organizational norms. In the workplace, employees are integrated in a social context, where social norms are relevant. Kelloway et al. (2010) have identified CWB as a form of social protest and identification with a group as a factor that influences CWB. Therefore, it is relevant to consider group effects and norms within the groups in order to predict CWB.

Gino et al. (2009) state that based on the Social-Identity Theory, the influence of social norms triggered by observed unethical behavior will depend on whether the actor is an in-group or an out-group member (Tajfel, 2010; Tajfel and Turner, 1979, 2004). In-group members serve as a standard and trigger unethical behavior. The authors designed two experiments with undergraduates as participants to test how cost-benefit analysis, saliency, and social norms influence unethical behavior (cheating). Participants were asked to solve simple math problems in the presence of others and in some conditions; they got the opportunity to cheat by misreporting their own performance. An important finding is that in the in-group-identity condition (interdependent identity), cheating increased and decreased in the out-group-identity condition. Also, social norms influence cheating in the way that participants imitated the confederate's behavior especially in the in-group-identity condition, because then the identification with others is strong. Further results show that when saliency of dishonesty increases (and social norms are not implied), cheating increases.

Chen and Li (2009) emphasize that based on the Social Identity Theory, people are likely to derive the sense of identity in part from the social group (Tajfel and Turner, 1979). In the laboratory experiment, different ways of creating group identity were varied (for example, the possibility to allocate tokens to the other group member). The experiment measured distribution preferences, reciprocity, and social welfare maximization. Results show that participants are less likely to punish in-group members for misbehavior and allocate more money to them. This implicates that creating a group identity would induce people to be more helpful to each other, especially when monetary incentives to do so are limited.

Sinha and Wherry (1965) analyzed determinants of norm violation behavior and the absence of threat of punishment. In the experiment with juniors and seniors from college, a situation was simulated in which incentive pay and limited time created pressure in order to violate three experimentally introduced norms. The norms differed in their explicitness and seriousness. These norms include guidelines to report every error. Two levels of threat were manipulated (high and low risk) by the presence or absence of punishment. Besides, personality variables were measured. Results show that the violation of norms depends on the explicitness of norms and especially on the introduced risk of being punished. The findings implicate that it is not only important for organizations to identify potential norm violators in the organization but rather to make norms and punishment explicit. Further, greater need for social approval leads to less norm violation than low scores for social approval. Persons with high scores try to achieve acceptance and tend to present a socially desirable picture of themselves. For further experimental studies regarding social norm violation and morality, see Brauer and Chekroun (2005), Stouten and Tripp (2009), and Schram and Charness (2014).

#### **4.4. Summary**

The following section summarizes the essential findings and presents which empirical and theoretical findings are supported by experimental studies and which factors are additionally relevant. Additionally, Appendix 2.A gives an overview of the captured studies from chapter 4. It shows which factors were measured and which CWB types were observed. The experimental studies can be distinguished into laboratory experiments with real-effort tasks, scenario experiments, and field experiments. The participants were predominantly undergraduate students. CWB<sup>15</sup> was mostly illustrated through cheating or fraud in the form of misreporting outcomes as well as theft and sabotage. Further aspects of CWB were antisocial behavior, as well as norm violation and unethical behavior. The review highlights

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<sup>15</sup> CWB is either measured directly by observing behavior or by the intention to engage in CWB with different established scales and items. One of the most common scales is the work deviance behavior scale developed by Bennett and Robinson (2000), which measure interpersonal and organizational deviance. Further, there is the counterproductive work behavior scale created by Fox and Spector (1999). Another possibility is that of the items for interpersonal CWB by Kelloway et al. (2002) adopted from Robinson and Bennetts's (1995) list of workplace deviance behaviors.

that CWB is a wide field with different aspects such as deviant behavior, antisocial behavior, misbehavior, and also unethical behavior. Individual factors of a person are important drivers of CWB in dependence of the type and nature of CWB. Especially in a social context with social norms, factors such as perceptions regarding unfairness and control (see Cohen-Charash and Mueller, 2007; Grover, 2014; Jones and Kavanagh, 1996; Mitchell and Ambrose, 2012) influence interpersonal CWB. The findings of the review also clarify that the decision to engage in CWB depends on cost-benefit analysis (see Yaniv and Siniver, 2016). "Cost" can result from the likelihood of being detected and punished or from loss of self-image. "Benefits" result from deserving a higher rank or monetary benefits. The experimental findings also show that the main underlying theories for predicting CWB are the SET, the Reciprocity Theory, and the Attribution Theory.

### ***Identified Factors and their Influence on CWB***

Within the elaborated review, relevant factors have been identified that influence different types of CWB. The main organizational factors are: justice, leadership, compensation in combination with competition, as well as formal control and goal setting. Justice was tested in consideration of individual variables such as self-identity (Johnson and Lord, 2010), integrity/honesty (Lasson and Bass, 1997), trust propensity, risk aversion, and morality (Colquitt et al., 2006), as well as self-esteem (see Cohen-Charash and Mueller, 2007). Especially self-esteem influences how people interpret and react to injustice events. The relevant CWB types in the context of injustice and injustice perceptions are supervisor- targeted CWB (retaliation) and theft. Perceptions of unfairness in interactions and procedures as well as distributive unfairness lead to higher amount of interpersonal CWB and theft.

Another important organizational factor that has been analyzed in the context of CWB and especially interpersonal or supervisor-targeted CWB is that of leadership. Leadership consists of leader mistreatment, supervisor aggression, quality of work experience, peer influence, and managerial influence. Both SET and Reciprocity Theory state that behaviors in a relationship are reciprocal and a function of fair treatment (Cropanzano and Mitchell, 2005). A key finding is that poor leadership in the form of mistreatment and supervisor's aggression increases supervisor-targeted CWB such as retaliation, antisocial deviance, and unethical



behavior. Relevant individual factors for predicting CWB in the context of leadership are: moral identity, self-uncertainty in combination with hostility (see Mayer et al., 2012), locus of control and Machiavellianism (see, for example, Jones and Kavanagh, 1996). Especially locus of control is an important factor for predicting CWB, which supports the model by Spector and Fox (2002, 2010). Based on the Attribution Theory (Weiner, 1986), attribution of control predicts the target of CWB through emotional responses (organization, co-worker, supervisor, see Spector and Fox, 2010). Internals assign outcomes more to themselves and they are more self-controlled. Therefore, they show more constructive and ethical behavior. CWB depends on the one hand on the perception of the quality of leadership by the employees and on the other hand on leader characteristics such as aggression and honesty (see Grover, 2014; Mitchell and Ambrose, 2012). Further experimental studies look at leader hypocrisy (Greenbaum et al., 2015), authority's fairness reputation (unfair, absent, and fair, Jones and Skarlicki 2005), supervisor's characteristics such as narcissism (Braun et al., 2016), and also the status of deviants and sanctioners (Bowles and Gelfand, 2010; Karellaia and Keck, 2013) as factors which predict CWB in the leadership context.

Further, a great amount of the experimental studies have investigated compensation in combination with competition as an organizational factor. The Economic Theory partially explains deviant behavior in order to maximize the own payoff from manipulation of compensation and competition. Experimental studies manipulated fixed pay, piece rate, and tournament conditions. Preferred CWB types in this context are these of cheating and sabotage. Relevant individual factors which influence cheating and sabotage under competition are, especially, Machiavellianism (see Murphy, 2012) risk attitudes (see Yaniv and Siniver, 2016), and attitudes toward social norms as well as toward misreporting (see Belot and Schröder, 2013). In general, experimental findings show that a competitive environment fosters sabotage and cheating. Thus, competition could have destructive incentives because of inequality aversion.

Further, formal control and goal setting have constructive but also destructive effects under certain conditions. Management's intentions behind formal control and the individual's preferences for reciprocity regulate this effect in the way that formal controls can signal distrust toward the employees and cause a defending reaction (see Christ, 2013).

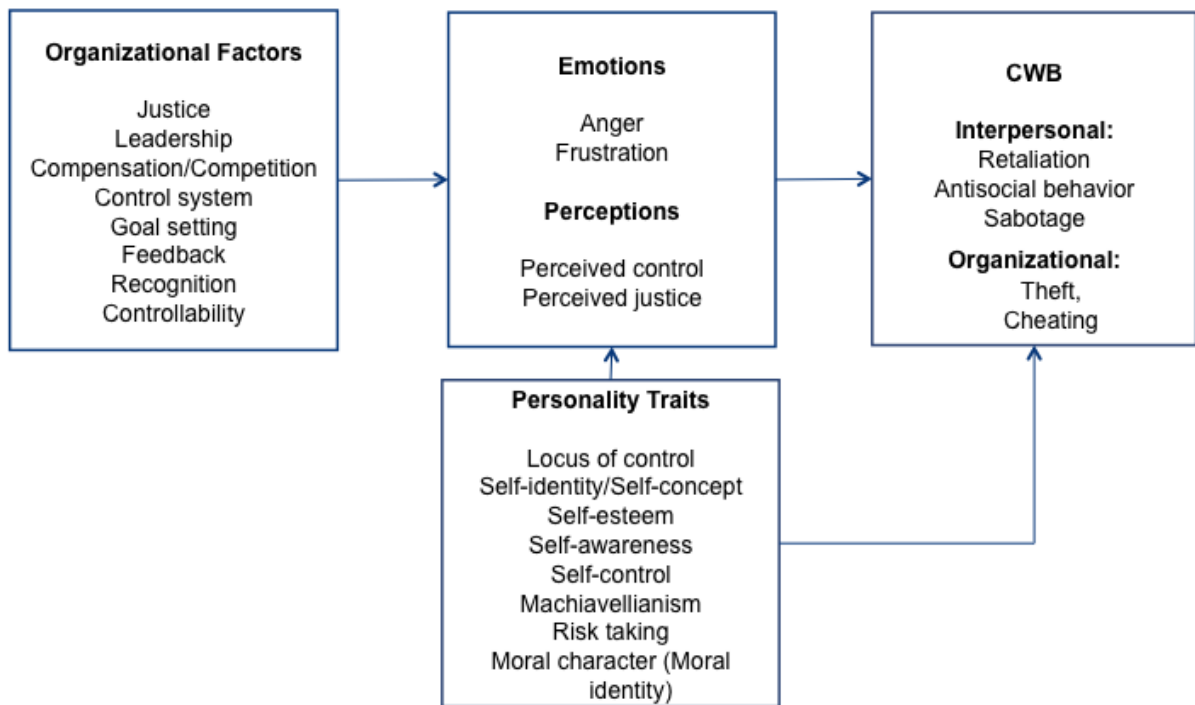
Cohen and Morse (2014) derived that CWB is associated with low moral character. Individuals seem to make decisions on whether to engage in unethical behavior based on their self-concept. The individual wants to be perceived as an honest person and to maintain favorable traits with a good self-image. Another important factor identified by Cohen and Morse (2014) and also supported in the experiments is self-control. Low self-control is responsible for impulsive behavior (see, for example, Mead et al. 2009). In the experiments, low self-control especially predicts cheating behavior. Self-control is influenced by personal traits such as moral identity. Moral identity especially influences the relationship between resource depletion and cheating (see Gino et al., 2011). In the context of moral character, also norm violation as a form of CWB plays a role. Norm violation depends on the risk of being detected and the saliency of norms as well as the identification with a group and group behavior. Group identity on the one hand has the positive effect that it fosters social and helpful behavior inside the group (Chen and Li, 2009), but on the other hand it leads individuals to imitate bad behavior by confederating and to less likely punish such misbehavior (Gino et al, 2009).

Besides the mentioned individual differences, emotional responses are another factor that was tested in experimental studies and has to be considered for CWB. Emotional response to a given situation adds an element of individual differences, which is important for personnel selection (Fine et al., 2010). The experiments show that emotions influence the relationship between a situation (environmental stressors) and CWB, especially interpersonal CWB and antisocial behavior. Based on the experimental studies, anger or frustration is the most powerful emotion to predict CWB (see Belschak and Den Hartog 2009). Moreover, feedback, recognition (see Belschak and Den Hartog, 2009; Feys et al., 2013), and controllability (see Greitemeyer and Rudolph, 2003) over a situation arouse emotions the most. Low perceived controllability is associated with anger, and individuals try to defend themselves against acts that threaten their identity through negative feedback and or low recognition. In this context, Murphy (2012) and Mayhew and Murphy (2014) found that individuals use rationalization by displacing responsibility as well as moral justification in order to reduce negative emotions. Further, experimental studies treat positive emotions, such as pride (Wubben et al., 2012), which influences prosocial, and antisocial behavior, and negative emotions, such as guilt (Ilies et al., 2013), which motivates reparative behavior. Bing et al.

(2007) distinguished between prosocial, latent aggressive, and overcompensating prosocials. Further, they distinguished between implicit aggression (conditional reasoning) and explicit aggression (self-perceived aggression). The authors state that this typology of aggression can help with personnel selection decisions.

### ***Further Relevant Factors***

When the findings of empirical studies from chapter 3 are compared with the experimental findings in chapter 4, it can be seen that the experimental studies emphasize additional factors which have an influence on CWB, namely: risk attitudes, trust propensity, status-seeking and power, self-uncertainty, preferences for rationalization, Machiavellianism, and preferences for reciprocity. Especially risk attitudes were analyzed in the context of theft and cheating (dishonesty and misreporting). Trust propensity is a relevant factor in the context of injustice, leadership, and formal control. Grover (2014) states that trust is an important factor for the relationship between a follower and a leader. In this context, the preferences for reciprocity become relevant. Based on the Reciprocity Theory, individuals reward trusting action. Further experiments show that hierarchical position as an individual difference predict the target of CWB (see Charness et al., 2014 and Aquino et al., 2006) as well as the likelihood of committing CWB and different forms of CWB (see Anicich, 2015; Demarree et al. 2014; Fast and Chen, 2009). The hierarchical position also influences how people perceive and think about situations and therefore individuals' reactions to situational conditions (Demarree et al., 2014). Figure 2.2 illustrates the main personal and organizational factors as well as the relevant CWB types, which were analyzed in the discussed experimental studies:



**Figure 2.2: Experimental Findings for the Influencing Factors of CWB**

Based on these findings, the need for further research is presented with practical implications.

## 5. Further Research

This section deals with the identification of relevant research gaps derived from the experimental findings. The following areas are considered: CWB in the long-term observation, measurement of CWB and personality, mechanisms behind CWB, relationship between CWB and OCB, and the positive side of deviant behavior.

### 5.1 Counterproductive Work Behavior in the long-term

An important point for research in CWB is that behavior is not invariant across contexts and especially time. CWB can be an impulsive act, especially when emotions are involved, and then it is regulated by the self-control of a person. Because of that, CWB can be short-term rather than long-term-orientated (Gino et al., 2011). In this context, Dalal (2005) states that it is important to observe the behavior of an employee in the long term, especially the frequency with which the employee harms co-workers and with which frequency he or she helps them.

Further, Cohen and Morse (2014) argue that character is to be understood as a collection of traits, and therefore individual differences in moral character are stable and enduring, but also capable of change over time and across situations. Consequently, every person has a central tendency or disposition to behave in a certain manner but there is variability (Fleeson, 2001). Therefore, it is not only about selecting the right employees but also strengthening the character by the right interventions. This is critical in the experiments, which only look at behavior at one point in time.

Further, a dynamic nature of the work environment implies uncertainty in future working conditions, and uncertainty itself depletes resources. Thus, by using between-person designs, researchers overlooked the dynamic effects of work environment on CWB (Eschleman et al., 2015). Eschleman et al. (2015) emphasize the need for within-person studies to explain the moderating effects of personality on the relationship between change in work stressors and change in CWB. According to the COR Theory, workers have an inherent need to acquire, maintain, and protect their resources (Hobfoll, 1989, 2002, 2004). The presence of work stressors can threaten a worker's current resource and change in work stressors that involves an added threat to a worker's future resources. The results of the study show that workers who experience an increase in work stressors may not only engage in CWB immediately but may be more susceptible to CWB at a later point in time.

## **5.2 Measuring Counterproductive Work Behavior and Individual Factors**

As mentioned above, some (experimental) studies measure CWB by self-reports. Dalal (2005) states that CWB is more private and unobservable and also Johnson and Lord (2010) criticize that the causal effect between individual constructs, such as self-identity and CWB, should be measured through behavior rather than through self-reports and intentions because this is not how people really act in a situation. Mikulay and Goffin (1998) further criticize measuring CWB through integrity tests, which measure opinions towards CWB or personality traits that are related to CWB. They state that the test scores are inadequate to measure detected behavior (e.g.,

theft), so applicants who will be likely to commit theft and be caught are not considered.

Further research is also needed regarding the measurement of the factors. Johnson and Saboe (2011) state that many values, attitudes, and goals operate at implicit levels, so they occur outside people's awareness, intention, and control. For example, self-concept and self-identity (see Johnson and Lord, 2010) operate in parts at implicit levels because they include values and goals that are in memory. So Johnson and Saboe (2011) have developed an indirect measure of self-concept by word fragment completion measure with individually and interdependently orientated words.

Spector et al. (2006) additionally emphasize that the use of subscales elicit different results than looking at CWB as one overall dimension. They analyzed the relationship between CWB and potential antecedents and looked at five subscales of CWB: abuse toward others, production deviance, sabotage, theft, and withdrawal taken from a 45-item CWB checklist, which was used in a number of studies before. For example, they found that production deviance had a similar pattern to abuse, while sabotage was more modestly correlated with other variables than abuse and production deviance.

### **5.3 Psychological Mechanisms**

Moore et al. (2012) suggest taking a closer look at the role of cognitive processes toward understanding a broad range of undesirable workplace behaviors (self-reported unethical behavior, fraud and self-serving decisions in the workplace). The authors argue that scholars and practitioners can benefit from taking individuals' propensity to morally disengage into account. Moral disengagement is a process based on moral reasoning: individuals move from awareness to deliberative judgment, then to intention and then finally to action. As a consequence, when analyzing individuals' behavior, it should be taken into account that contextual factors, personality traits, and emotions have different effects on every step in this process. In this context, Spector (2011) states that not only the relationships of factors but also the mechanisms by which variables are related and how people regulate their emotions and behavior need to be understood.

To understand why organizational factors and personality traits predict CWB, Cullen and Sackett (2003) distinguished between initiated CWB and reactive CWB.

Initiated CWB is initiated by the individual to satisfy needs and motive (e.g., pleasure, greed, risk taking), while reactive CWB occurs because of some actual or perceived organizational event and satisfies motives such as retaliation or revenge. This needs to be more distinguished in experiments in order to analyze the real motives behind CWB.

## **5.4 Counterproductive Behavior and Organizational Citizenship Behavior**

Dalal (2005) recognized that the performance of an employee is a function of three classes of behavior: task performance, OCB, and CWB. Therefore, CWB cannot be analyzed separately from the other constructs in order to understand employees' behavior. The absence of OCB is not identical to the presence of CWB, or vice versa. Further, both can be motivated in order to obtain similar benefits. For example, people engage in aggressive behavior to improve their own affective states and therefore to achieve a good mood or a high level of satisfaction in the future (Dalal, 2005).

Further, Spector and Fox (2010) analyzed the transformation from OCB to CWB. They state that "an initial act of OCB could be followed by an anger-induced act of CWB, which is then followed by OCB. This can play out over extended periods of time...." (p. 139). For example, an individual gets angry with a poorly performing co-worker and engages in CWB; later he or she feels guilty and engages in OCB. For example, Ilies et al (2013) show that OCB can be motivated through normative feedback on CWB. This supports the argument of Eschleman et al. (2015) that a CWB has to be observed over time and not only across contexts.

## **5.5 Positive Deviance**

Deviance is a part of the CWB definition (see Bennett and Robinson, 2000). Spreitzer and Sonenshein (2003) concentrated on the positive side of deviance behavior, which is honorable and extraordinary. They state that literature focuses on negative behaviors, but departures from norms can also be positive or constructive. Thus, by bringing counter normative behavior and positive deviance together, it is possible to understand how they relate and how they differ concerning their facilitators and their outcomes. Positive deviance is an intentional behavior that

departs from the norms of a referent group in an honorable way. It must be distinguished from OCB, because OCB does not involve a significant departure from norms. Positive deviance is a part of prosocial behavior, corporate social responsibility and prosocial rule breaking. Morrison (2006) and Tripp et al. (2002) support the idea that deviance can be a prosocial act or, like Conrads et al. (2013), experimentally show it can be a behavior to help the team (see also Cadsby et al. , 2016; Wiltermuth, 2011).

Spreitzer and Sonenshein (2003) have theoretically identified psychological conditions that enable individuals to depart from norms in positive deviance. These factors are: meaning, other focus, self-determination, courage, and personal efficacy. Beyond these factors, the authors give some hints for future research. They state that further personality dispositions influence positive deviance. These are: risk-taking propensity and proactive personality. Further, two contextual factors may be relevant: transformational leadership and contexts of crisis. For this analysis, particularly transformational leadership is interesting. As demonstrated in experimental studies, leadership has been observed as a factor with a significant influence on CWB. Not only a good relationship between employee and supervisor can decrease CWB, but rather the supervisor can actively influence the behavior of employees by encouraging their follower's interest to look beyond their own interest and therefore to support positive instead of negative deviance. Also Zdaniuk and Bobocel (2015) experimentally showed that leaders could inspire and influence followers' identity to collective identity and therefore transform the followers' preferences from self-interest to collective interest.

## **5.6 Further Relevant Factors**

The comparison between the identified factors from the empirical studies out of chapter 3 and the identified factors from the experimental studies have shown that some predictors of CWB are still unexplored. These are physical conditions (e.g., working space), organizational climate or culture (especially guidelines, information flow, hierarchy), employment conditions (e.g., working hours, job insecurity), job characteristics (e.g., skill variety, task complexity, autonomy), and nature of work (physical work, intellectual work). All these factors could influence CWB especially in combination with different personality traits.



Further, the review has shown that the personality traits from the big 5 area have not been analyzed in the experimental studies, although for example, emotional stability and conscientiousness are important traits for predicting CWB (see, e.g., Penney et al., 2011). Also effortful control and consideration of future consequences have not been analyzed. Spector (2011) states that effortful control as the capacity to plan future action and the ability to plan constructive reactions is a predictor of CWB. Similar Cohen and Morse (2014) state that consideration of future consequences predicts the moral character of people. In the previewed experiments, this factor was not considered, although it concerns an individual's ability to inhibit aggressive and counterproductive impulses and negative feelings.

## **6. Conclusions**

This literature review provides an overview of the main organizational and individual factors which predict CWB. It gives an insight into the results of experimental studies and presents how both factors and different CWB types are operationalized and measured. Especially, soft factors such as justice and leadership are identified as the main drivers of interpersonal CWB in combination with several individual differences, including self-control and locus of control. It turns out that the experimental results mainly depend on the observed type of CWB, the target of CWB, and the way in which CWB is measured (by intentions or actual behavior). The distinction between the different CWB types helps to consider the severity of individuals' reaction to organizational factors such as injustice.

CWB is normally a covered behavior in the workplace and therefore difficult to observe. Laboratory experiments contribute to a deeper understanding of such behavior and its causes. Particularly, organizational factors can be manipulated in a controlled setting and the psychological mechanisms behind CWB can be observed. Nevertheless, the results of experimental studies are not generalizable as they depend on the way in which the individual and organizational factors are measured. For example, the activation of individual factors in certain situations depends on whether they are measured on an explicit or implicit level. Further, personality traits are often seen as given factors, but in the long run they are also changeable by the environment of a person. Thus, the time aspect has to be

considered in interpreting experimental results which only measure behavior at a certain point in time.

The findings from the literature review disclose areas of further research and also implications for practice. The consolidation of theoretical and empirical findings present gaps in empirical as well as theoretical research in order to get a deeper understanding of CWB. For practitioners implications are given to enhance the effectiveness of human resources activities and personnel selection.

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## Appendix

### Appendix 2.A. Summary of Experimental Studies

Author(s)	Year	CWB Type	Organizational Factor(s)	Individual Factor(s)
<b>Justice-related CWB and Personality</b>				
Aquino et al.	2006	revenge	justice (procedural)	power
Cohen-Charash and Mueller	2007	interpersonal CWB (harming)	organizational justice (overall justice)	self-esteem envy
Colquitt et al.	2006	theft	justice (distributive, procedural, interpersonal)	trust propensity risk aversion morality
De Cremer and Van Hiel	2010	antisocial behavior (aggression)	justice (procedural)	emotions (anger)
Houser et al.	2012	Cheating	justice (distributive)	expectations about social norms
Johnson and Lord	2010	theft	organizational justice (overall justice)	self-identity
Lasson and Bass	1997	deviant behavior	justice (equity)	honesty
Seifert et al.	2010	financial statement fraud	organizational justice (overall justice)	-
Umphress et al.	2009	lying to and stealing from supervisor	justice (distributive) code of conduct	-
<b>Leadership and Personality</b>				
Grover	2014	satisfaction with leader	dishonest leader	moral identity
Jones and Kavanagh	1996	unethical behavior (misreporting)	quality of work experience peer influence managerial influence	locus of control Machiavellianism
Mayer et al.	2012	deviant behavior	leader mistreatment	uncertainty hostility
Mitchell and Ambrose	2012	destructive reactions (aggression toward supervisor)	supervisor aggression	locus of control

<b>Compensation and Competition</b>				
Belot and Schröder	2013	theft cheating	competition	preferences for social norms
Charness et al.	2014	sabotage	ranking feedback (competition)	status seeking
Harbring et al.	2007	sabotage	corporate contest	-
Harbring and Irlenbusch	2008	sabotage	tournament size	-
Harbring and Irlenbusch	2011	sabotage	tournament incentives	-
Murphy	2012	fraud (misreporting)		attitude for misreporting Machiavellianism
Schwieren and Weichselbaumer	2010	cheating	Competition	individual abilities
Yaniv and Siniver	2016	cheating	risk of being caught	risk attitude
<b>Further Work-Related Forces</b>				
Christ	2013	dysfunctional behavior (decreased effort)	formal control	trust
Schweitzer et al.	2004	lying (overstatement of productivity)	goal setting	self-perception
<b>Emotions</b>				
Belschak and Den Hartog	2009	counterproductive performance	performance feedback	anger frustration
Feys et al.	2013	interpersonal CWB (harmful behavior)	recognition at work	emotions (e.g., frustration)
Greitemeyer and Rudolph	2003	antisocial behavior (aggression)	controllability	anger
<b>Moral Character and Norm Violation</b>				
Anicich et al.	2015	unethical behavior (e.g., test tampering)	status manipulation	morality
Chen and Li	2009	antisocial behavior (aggression)	group effect manipulation	group identity
Demarree et al.	2014	antisocial behavior (aggressive and hostile behavior)	status manipulation	self-concept
Fast and Chen	2009	antisocial behavior (aggression)	status manipulation	self-concept
Fischbacher and Föllmi-Heusi	2013	cheating	compensation/incentives	self-concept
Gino et al.	2009	unethical behavior (cheating)	norms, saliency	group identity

Gino and Mogilner	2014	cheating	time pressure monetary incentives	self-concept
Malcolm and Ng	1989	cheating	competition (external standard of competence)	self-concept
Mazar et al.	2008	cheating	financial incentives (external benefits)	self-concept
Mead et al.	2009	cheating	depletion	self-control
Ploner and Regner	2013	cheating	endowment possibility to cheat	dishonesty moral awareness moral identity
Sinha and Wherry	1965	norm violation (cheating)	risk to of being punished	social approval
Thornton and Rupp	2015	deviant behavior	justice climate	group moral identity

### **Part 3. Research Paper 2:**

#### **Collaboration in Organizations: Do as I say or Do as I do?**

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## **Abstract**

We study how ethical (concordant) and unethical (discordant) firm actions influence collaborative behavior in firms. We contrast what firms do with what firms say by analyzing the effect of introducing a belief system (operationalized as a code of conduct). We base our predictions on how the (mis-) alignment of belief systems and firm actions influences relatedness and autonomy – two basic psychological needs according to Self-Determination Theory (SDT). Using a laboratory experiment, we find that a code of conduct has a positive influence on collaboration between organizational members especially when the code (what a firm says) is concordant with the firm's behavior (what a firm does). However, we also find that discordant firm actions trigger the feeling of autonomy compared to a situation where no belief systems are implemented.

## 1. Introduction

Collaboration is a crucial element of firm success. It leads to creative energy, a caring attitude, a conscientious stewardship, and a coherent intent between organizational members (Haskins et al., 1998). Especially horizontal knowledge sharing as a form of collaboration within organizations is positively related to team performance and firm innovation capabilities (Wang and Noe, 2010).

In this paper, we focus on the mechanisms that firms use to influence collaboration when incentives systems send contradictory signals to employees. Although incentive systems play an important role in promoting competitive and/or cooperative behavior between units (Bartol and Srivastava 2002), they often have features that promote collaboration (e.g., stock options whose value depends on firm profitability) and that encourage competition (implicit tournaments for promotions). In addition and of interest to us, non-monetary controls, such as belief systems, help agents to internalize organizational values in order to motivate individuals to collaborate with others. The firm's culture, as expressed by its words and actions, helps participants decipher what actions are expected or which actions are forbidden (Simons, 1995). This kind of sense making is defined as "a process by which individuals develop cognitive maps of their environments" (Ring and Rands, 1989, p. 342). Basu and Palazzo (2008) distinguish three dimensions of such a sense making process: the cognitive (what firms think), the linguistic (what firms say), and the conative dimension (how firms tend to behave). In this paper, we concentrate on the linguistic and conative dimension, operationalizing the linguistic dimension as a code of conduct stating what a firm wants its employees to do and operationalizing the conative dimension as the press coverage of actual management practices (how the employing firm behaves). Basically, we test the contextual effectiveness of a code of conduct and ask how conformity or dissonance among these three elements (economic, linguistic, and conative) in the control framework affects collaboration among subunits. Several studies report mixed results regarding the effectiveness of a code of conduct and emphasize the importance of the code content and objectives (Schwartz, 2004). But the effectiveness of a code also mainly depends on its enforcement by the firm, as the firm should set an example by enforcing social norms (Gibbs, 2003; Messmer, 2003).

Our study is based on the Self-Determination Theory (SDT) by Deci and Ryan (1985, 1991, 2000). SDT assumes that humans naturally tend toward the integration of themselves into larger social structures and internalize the values and norms of their social groups (Deci and Ryan 2000). Based on SDT, the amount of internalization of non-monetary regulations depends on the satisfaction of basic psychological needs. SDT proposes autonomy, competence, and relatedness as the three core psychological needs of an individual. Autonomy is defined as the opportunity to act according to one's own (intrinsic) motives. Competence refers to the feeling of mastery, and relatedness is linked to desires to belong to social groups. Overall, people will tend to follow goals, domains, and relationships that support their need satisfaction. They will experience positive psychological outcomes from need satisfaction, resulting in intrinsically motivated behavior as well as the integration of extrinsic motivations (Deci and Ryan, 2000). Non-monetary regulations, such as belief systems, are connected to the satisfaction of psychological needs and influence an individual's intrinsic and extrinsic motivation to cooperate with others (Deci and Ryan 2000; Gagné 2009). Two psychological needs, the need for autonomy and the need for relatedness, underlie the tendency to follow such belief systems (Deci and Flaste 1996). Belief systems are a set of communicated basic values that guide the behavior of organizational members (Simons, 1995). In particular, widely implemented codes of conduct are means of spreading norms and values in an organization. They are less costly than extensive monitoring and sanctioning (Lauer et al., 2008). Additionally, the social context, such as ethical firm behavior, affects the integration of norms (Deci et al., 1994). Perceptions of relatedness arise when corporate norms build trust in the belief that other organizational members will also be committed to following the norms and values (Deci and Ryan, 2000). We argue that the concordance between communicated norms and firm behavior influences the autonomy to behave collaboratively and increases the relatedness toward other organizational members. Perceptions of autonomy arise when individuals get the choice to make decisions based on their own values and norms (even when these might be in contrast with the firm's (un) ethical behavior). We predict that such a feeling of autonomy can be strengthened when expressed norms and actual firm action are in contrast with each other.

We use a laboratory experiment to investigate the behaviors of two managers – a sender and a receiver – who work in different parts of the same firm. The manager's compensation depends on individual and corporate outputs. The sender makes two decisions: (1) for a given cost of transferring information, whether to share information with the receiver, and (2) if yes, whether to cooperate by sharing information that enhances the receiver's expected output or to compete by sharing output-decreasing information. The receiver decides whether to accept the offered information without knowing the kind of information being transferred. Transferring either kind of information is equally costly to the sender, relative to staying silent. Output-increasing information increases expected firm profit. When combined with the compensation scheme, the effect is that while both the sender and the receiver expect to benefit, the receiver benefits disproportionately. In contrast, output-decreasing information depresses expected corporate profit. After factoring in payments, the net effect is that the receiver loses disproportionately. We choose parameters such that sharing of positive information is always beneficial to the firm. From an income-maximizing perspective, it is never optimal for the sender to share output-decreasing information, as the strategy of sending output-enhancing information dominates. The economic prediction is for the receiver to always accept the offer to share information. We manipulate three factors within the context of this game. First, we change the congruence of individual- and firm-level goals by varying the sender's costs of information transfer, a within-subjects factor, at 11 levels. Second, we operationalize the existence (absence) of an expressed corporate norm system (what the firm wants employees to do) as a between-subjects factor at two levels (Yes and No for the existence of a Code of Conduct, coded as CC and NCC). Finally, we operationalize firm behavior by providing a summary of press coverage of the firm's management practices compared to press coverage of a competitor. One level of coverage indicates actions that are dissonant with norms, while the other highlights compliance with the code of conduct and ethical firm behavior. We code this between-subjects factor as discordant and concordant, respectively. Employing the strategy method (Selten 1967), each participant makes decisions for all eleven cost levels. In sum, we have a 2 x 2 x 11 experiment.

We test collaborative behavior for the case that collaboration is individually rational and collectively beneficial. Therefore, from an economic view, collaboration

is always rational. Further, we analyze how non-monetary regulations in the form of belief systems and (un) ethical firm behavior influence the willingness to collaborate. We found in general that the levels of collaboration are substantially below the levels which are economically rational. This is even true when conditions favor cooperation. However, our results also indicate that a code of conduct enhances collaboration between organizational members independent of concordant or discordant firm behavior. Consequently, for companies it is always beneficial to implement a code of conduct. We also find that firm actions influence the effectiveness of a code of conduct. Specifically, the interactional effect between the presence of reminders of belief systems and firm behavior is highly significant. Such belief systems have a reliably stronger effect when actions are concordant than when they are discordant with stated beliefs (Simons, 1995). The analysis of individual decisions further supports the inference that reminders of a code of conduct strengthen the credibility of information sharing when incentives align. Senders are more willing to offer information and receivers more often accept this information when firm behavior is aligned with the code of conduct. In the absence of a code of conduct, unethical behavior of a firm leads to higher levels of collaboration, which indicates that in such a case individuals are more intrinsically motivated to behave ethically (contrary to the firm's actions).

We organize the remainder of this paper as follows. The next section develops the theoretical foundation and derives hypotheses to be tested. In the third section, we describe the design of our experimental study. In sections 4 and 5, we discuss research outcomes and implications of our findings.

## **2. Theory and Hypotheses**

### **2.1 Internalization of Norms and Need Satisfaction**

We employ SDT by Deci and Ryan (1985, 1991, 2000), which assumes that individual motivation depends on the satisfaction of the core psychological needs of competence, autonomy, and relatedness. The satisfaction of such needs enhances intrinsically motivated behavior and the integration of extrinsic regulations (Deci and Ryan, 2000). We focus on autonomy and relatedness as relevant needs for the integration of non-monetary regulations such as belief systems. Autonomy refers to the desire to have control over one's own choices and to perform activities that are concordant with one's own sense of self. Relatedness refers to other-regarding behavior and is based on the desire to feel connected to others and to be part of a social group where norms and values are shared (Deci and Ryan, 2000).

SDT proposes that people tend to internalize the values and regulations of their social group (Deci and Ryan, 2000). Non-monetary controls help agents to internalize organizational values and regulations by influencing an individual's motivation to collaborate with others. They are connected with the satisfaction of psychological needs, such as autonomy and relatedness (Gagné, 2009). Internalization is the process of transforming external regulations into internal regulations. Deci et al. (1994) distinguish between introjection and integration. Integration has a stronger effect on the identification with regulations than introjection has. Integration is a form of internalization in which the person identifies with the value of an activity and does it volitionally because of its importance for one's personal goals. Research indicates that integrated regulations lead to greater consistency or coherence between a person's behavior and her or his internal states (Koestner et al., 1992). Thus, integration results in higher self-determination and has been linked to reduced anxiety (Ryan and Connell, 1989) and a higher level of satisfaction (Deci et al., 1989). A higher identification with norms is more likely to lead to behavior that is motivated to helping others in order to reach common goals (Gagné, 2009).

In an experiment, Deci et al. (1994) provide support for three contextual factors that are hypothesized to predict the amount of internalization of an external regulation and to promote self-determination of individuals: (1) providing a

meaningful rationale, (2) acknowledging the behavior's perspective, and (3) conveying choice rather than control. Research on social contexts and internalization has demonstrated that especially autonomy is important for promoting internalization and self-determination (Grolnick and Ryan, 1989).

## **2.2 Effects of Belief Systems**

Based on SDT, autonomy arises when organizations communicate corporate norms but do not apply any social pressure on employees to commit to these regulations. This autonomy leads to a higher self-determination and the integration of the communicated norms (Deci et al. 1994). This is also supported by studies which use the cognitive dissonance and self-attribution perspectives that support the view that minimal external control and choice promote internalization (e.g., Freedman, 1965). The role of attribution and cognitive dissonance will be discussed in more detail later. Research also shows that autonomous motivation results in active information seeking (Koestner and Losier, 2002) and engagement in knowledge transfer (Gagné, 2009). Relatedness as another psychological need arises through the sharing of norms among organizational members by providing belief systems which guide an individual's behavior. Such belief systems are defined as "the explicit set of organizational definitions that senior managers communicate formally and reinforce systematically to provide basic values, purpose, and direction for the organization" (Simons, 1995, p. 34). Research indicates that sharing norms and values through belief systems fosters the internalization of norms and is positively related to collaboration, for example, in the form of the intention to share knowledge (Brown and Duguid, 2000). Through shared beliefs, individuals feel more connected to a social group and build trust in the belief that the other organizational members will also adhere to the corporate norms. Trust strengthens the feeling of commitment to the team and to the organization (McAllister, 1995; Williams, 2001) and is an important factor for knowledge sharing (Hsu et al., 2007).

In our setting, belief systems are implemented through a code of conduct that communicates values and norms, such as integrity and teamwork, but does not include any sanctions for non-compliance. Therefore, we assume that perceptions of autonomy arise because individuals have the opportunity to make decisions aligned with their own values and norms. Further, the code emphasizes

collaboration (teamwork) and is communicated to all organizational members. Based on the corporate norms included in this code, individuals build higher trust in the belief that their team partner will show collaborative behavior and are (more) motivated to allow the partner to benefit through collaborative behavior (e.g. sharing of information). In summary, we argue that following the code strengthens autonomy and relatedness and therefore can lead to higher self-determination. This has a positive influence on the integration of norms and identification with the code (Deci et al., 1994; Deci and Ryan, 2000), which foster collaboration between organizational members.

***H1:** When cooperation is individually rational and collectively beneficial, the use of belief systems (in the form of the presence and reminders of a code of conduct)*

- a) increases the propensity of the sender to collaborate,*
- b) increases the propensity of the receiver to collaborate,*
- c) increases the realized gains from cooperation.*

### **2.3 Effects of Reported Negative Firm Behavior**

Based on the sense-making process of Basu and Palazzo (2008), we now consider whether a firm does (conative dimension) what it says (linguistic dimension). Thus, we analyze the effect of reported firm behavior, which can be concordant or discordant with common-sense norms and values. Information about firm behavior, such as contained in press articles, allows conclusions about actual management practices and can influence employees regarding whether and how to cooperate with each other. In this section, we derive how negative information about firm behavior can influence information sharing between individuals in the absence of a belief system. We use intrinsic motivation to explain the willingness to collaborate in an unethical environment. Intrinsically motivated activities are defined as those activities that individuals find interesting and that they would engage in in the absence of consequences (Deci, 1971). Deci (1975) proposed that intrinsic motivation is based on people's needs to feel autonomous, related, and competent. Thus, such motivation is a function of the degree to which people experience the satisfaction of basic psychological needs while engaging in activities. Self-determined activities have been referred to as an internal perceived locus of



causality. According to the Attribution Theory by Weiner (1995), the locus of causality can be internal or external to a person and determines whether or not a given outcome will affect one's self-esteem and related emotions, such as pride and shame. Providing choice can enhance the feeling of internal locus and thus satisfy the need for autonomy. In contrast, control by extrinsic rewards often has a negative influence on intrinsic motivation and leads to a shift from an internal to an external locus of causality. In contrast to extrinsic motivation, intrinsically motivated people are motivated to collaborate in order to achieve better work results and as an expression of themselves (Poortvliet et al., 2007). Thus, autonomous motivation is positively related to knowledge sharing in groups (Lin, 2007; Ozlati, 2015; Wang and Hou, 2015) as well as active information seeking (Koestner and Losier, 2002). Individuals then work toward a common goal (Boland and Tenkasi, 1995) and show helping and other prosocial behaviors (Frey, 1993).

We argue that, in the absence of belief systems, the intrinsic motivation to engage in ethical behavior mainly depends on the satisfaction of autonomy. When no code of conduct serves as a reminder of belief systems, subjects act ethically without guidance and have to draw on their own value systems. However, they will take aspects of their environment into account when deciding whether and how to cooperate. When subjects observe information about unethical behavior by their employer, they have the choice to withdraw from collaborative effort or to behave in an ethical manner (higher levels of collaborative behavior). In comparison to reported positive firm behavior, the violation of accepted norms by the employer increases the awareness of such norms and activates the individual's value system (Krupka and Weber, 2009). The choice to collaborate then is based on the inner interest (autonomy) of the individuals and a signal to work toward a common goal (relatedness). In the absence of expressed norms, autonomous individuals have to rely on their (intrinsic) belief system and often act more ethically, because this allows them to express their own values and norms and to disclose their disagreement with unethical firm behavior (as long as they are not sanctioned for this behavior) (DeCharms, 1968). Thus, the choice to act collaboratively in an unethical environment without ethical guidelines can be attributed to the internal locus of control (autonomy), which is related to positive feelings, such as pride and self-esteem, and thus to stronger feelings of self-determination (Deci and Ryan,

1985). Therefore, we argue that both team members (sender and receiver of information) will collaborate to benefit of each other.

**H2:** *When cooperation is individually rational and collectively beneficial, compared to reported ethical firm behavior reported firm behavior that reflects unethical behavior*

- a) increases the propensity of the sender to collaborate,*
- b) increases the propensity of the receiver to collaborate,*
- c) increases the realized gains from cooperation.*

## **2.4 Interaction of Belief Systems and Reported Firm Behavior**

### ***Belief Systems and Negative Reported Firm Behavior***

Humans want to make sense of situations in order to get a consistent picture of an organization or a given situation. According to Cognitive Dissonance Theory (Festinger, 1957), humans do not like inconsistent thoughts or situations and try to reduce dissonance by changing attitudes or interpretations of the dissonant situation. Deci et al. (1994) state that integrated regulations are characterized by coherence or consistency between one's behavior and one's feelings about the activity. Further, intrinsic motivation is more likely to occur in contexts characterized by a sense of secure relatedness (Ryan and La Guardia, 2000). Significant dissonances between firm actions (what a firm does) and communicated norms (what a firm says) through a reminder of a belief system (code of conduct) reduce this consistency. When the organization acts contrary to the shared norms in the code, uncertainty about (shared) norms arises and the organizational members feel less related among each other. It is also unclear which norms other employees follow, and an existing cognitive dissonance is difficult to resolve. As a consequence, the dissonance lowers trust between organizational members. As trust is attributed to satisfying the need for relatedness (Gagné, 2009), the amount of internalization decreases (Deci et al., 1994) and the code can even crowd out the intrinsic motivation to behave ethically in an unethical environment. Overall, low relatedness and trust reduce the willingness to collaborate as well as the propensity of sharing knowledge and information (Cabrera and Cabrera, 2005; Hsu et al., 2007; Kelloway and Barling, 2000; Riege, 2005; Quigley et al., 2007). We argue that in

our setting the senders' decision to collaborate depends on the existence of a cognitive dissonance and the expected behavior of the receivers. The receivers will base their decisions on the perceived credibility of the situation.

**H3:** *When cooperation is individually rational and collectively beneficial when an additional belief system that emphasizes collaboration is implemented, compared to reported ethical firm behavior reported firm behavior that reflects unethical behavior*

- a) *decreases the propensity of the sender to collaborate,*
- b) *decreases the propensity of the receiver to collaborate,*
- c) *decreases the realized gains from cooperation.*

### ***Belief Systems and Positive Reported Firm Behavior***

When firm behavior and the code of conduct are aligned (firms do as they say), there is no dissonance between the communicated norms and management practice. Therefore, there is more certainty about the situation and clear guidance on behaving ethically. This concordance between the code of conduct and the firm behavior increases the internalization of the shared norms. Research supports the argumentation that aligned management actions, which influence others through inspiration and vision, foster trust among organizational members (Deluga, 1995; Hoyt and Blascovich, 2003; Pillai et al., 1999; Podsakoff et al., 1990) and are positively related to satisfaction of the basic psychological needs for autonomy and relatedness (Blais and Brière, 1992; Gagné, 2009). Further, having a shared vision has been found to be positively related to collaboration in the form of knowledge sharing in work teams (Chiu et al., 2006; Srivastava et al., 2006). People who follow intrinsic motives are more likely to help others and to support their group in order to achieve valued goals (Gagné, 2009). Due to these findings, we argue that the code provides a general relatedness that is strengthened through concordant firm behavior. The higher relatedness leads to higher trust between the sender and the receiver and therefore increases the willingness to collaborate.

**H4:** *When cooperation is individually rational and collectively beneficial, compared to reported unethical firm behavior the combination of reported firm behavior that reflects ethical behavior and a belief system that emphasizes collaboration*

- a) *increases the propensity of the sender to collaborate,*
- b) *increases the propensity of the receiver to collaborate,*
- c) *increases the realized gains from cooperation.*

### **3. Experimental Design**

Our information-sharing task has participants playing one of two roles – a sender or a receiver. We refer to a sender-receiver pair as a firm (this portion of the paper borrows heavily from the related section in Balakrishnan and Letmathe (2017). We refer the reader to that paper for additional details about the experimental task). For experimental instructions see Appendix 3.D.

#### **3.1 Experimental Procedure**

##### ***Manipulated Conditions***

We collect data from a 2 x 2 x 11 experiment, each period. A reminder about a code of conduct (emphasizing a belief system) is the first between-subjects factor. We manipulate this factor at two levels: CC when we remind participants of the code and NCC when there is no reminder about a code of conduct. The second between-subjects factor is information regarding actual management practices compared to those of the firm's competitor. This information includes a summary of press articles recently published in diverse newspapers. The press coverage can be either concordant (management practices in line with the firm's code of conduct and highlighting the firm as a positive example compared to its competitor) or discordant (management practices violating the firm's code of conduct and highlighting the firm as a negative example compared to its competitor). However, while they trigger questions about ethicality, the actions are not illegal. The cost of information transfer (COST) is a within-subjects factor manipulated at 11 levels (0 to 100 Francs, in steps of 10 Francs).

##### ***Experimental Protocol***

Undergraduate students at a large German University were the participants in our experiment. We programmed the experiment in z-Tree (Fischbacher 2007). We

began with an information phase during which the participants were educated about the task and the firm. If applicable, the experimental materials that introduce the firm and the task include a statement about the firm's code of conduct.<sup>1</sup> This code of conduct (see Appendix 3.A) emphasizes attributes such as integrity and teamwork. Participants are required to sign a document attesting that they have read and understood the firm's expectations. We also added questions to ensure that the participants understood the code. Second, the participants learned about actual firm behavior through the summary of press articles (see Appendix 3.B). Management practices included employee working conditions, interaction with suppliers and customers, firm culture, the focus on financial outcomes, and societal contributions of the firm. These manipulations have no direct link to the payment scheme.

During the learning phase, participants learned about the payment contract. They were also presented with several worked out numerical examples (for all possible cases of sharing and accept / reject decisions) to ensure that they fully understood the payment scheme. They then answered several manipulation questions that they had to answer correctly in order to proceed. Up to this point, they did not know whether their role was that of the sender or the receiver.

The decision making phase began with their assignment as Person X, the sender, or Person Y, the receiver. We employed the strategy method to elicit participants' decision maps.<sup>2</sup> For every period, neither the sender nor the receiver learned the actual cost of sending information until they had made (binding) decisions. Every sender had to answer questions such as: "If your cost to transfer information is 30 Francs, will you transfer information to Person Y?" If they chose to share information, senders also chose the kind of information to be shared. Similarly, a receiver responded to questions such as: "If Person X's cost of transferring information is 30 Francs and if Person X offers to share information, will you accept or reject the offer?" Participants were bound to the decisions made.

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<sup>1</sup> We base the code on the code of conduct of Caterpillar Corporation.

<sup>2</sup> The strategy method allows us to examine (1) how employees react to each possible cost and not simply one value chosen by the experimenter, reducing the number of subjects needed and, (2) how a receiver might react to each possible cost for sharing information. Prior research suggests that decisions using the strategy method are similar to decisions using a sequential protocol (Cason and Mui 1998; Oxoby and McLeish 2004).

At the end, the participants answered follow-up questions, which included constructs for integrity, organizational commitment, competitiveness, altruism, and the participants' belief system. We also collected demographic data. Finally, based on the outcome of the lottery and the randomly chosen cost level, we paid participants at the rate of 30 Francs to 1 Euro.

We collected data from 60 participants (30 sender-receiver pairs) for the conditions (concordant, CC), (concordant, NCC) and (discordant, NCC), and 58 participants (29 sender-receiver pairs) for the (discordant, CC) condition. Thus, in total, we have 1,309 data points (= 119 pairs \* 11 cost values) from 238 participants. The average participant was 22.9 years old, with 35.3% being female. Reflecting the nature of that particular university, engineering and business administration were the dominant majors. The average participant earned 11.27 Euros for the task (which lasted approximately a bit less than an hour).

### **3.2 Decision Structure and Economic Solution**

The sender has information that affects the outcome values for the receiver's lottery. The sender can incur a known and certain cost and transmit this information to the receiver, who then can choose to accept or reject the offer. If the sender does not share information or the receiver rejects the sender's offer, the receiver's lottery is identical to that of the sender – 0 Francs for losing and 50 Francs for winning. If the sender shares positive information and the receiver accepts, the receiver's value for winning increases by 400 Francs to 450 Francs. However, if the sender shares negative information and the receiver accepts, the receiver's value from winning decreases by 20 Francs to 30 Francs. The receiver's outcome value for losing is always 0 Francs. The basic decision structure and the economic outcome are summarized in Appendix 3.C.

Firm-level output is the sum of observable individual outputs. Each participant's individual output is the result of an independent lottery with two equally likely outcomes – win or lose. Outcome probabilities are constant for all conditions and decisions. Outcome values, probabilities, and payoff structure are all common knowledge. Outcome values for the sender's lottery are constant. These values are 0 Francs for losing the lottery and 50 Francs for winning it. Individual earnings are a function of both the firm and individual outputs. Each person gets 50% of the firm

output (the sum of individual outputs), creating an incentive to cooperate and share positive information. However, the person (within each sender-receiver pair) with the higher individual output also gets a bonus of 400 Francs. Ties, in the form of equal individual outputs, lead to an equal split of the bonus. This feature creates an incentive to compete because sharing positive (negative) information decreases (increases) the chances of the sender earning the bonus.

Sharing of positive information is always beneficial to the firm. The action increases expected firm output by 200 Francs =  $0.5 * 400$  Francs. The action also is socially desirable, as this amount is higher than the maximum possible cost (100 Francs) for transferring information. Sharing of negative information is never beneficial to the firm, as it decreases expected output by 10 Francs. While beneficial to the firm, because senders bear the transactions costs, sharing positive information might not be individually rational for them. For a risk-neutral sender, the economically optimal strategy is to share positive information up to a cost of 50 Francs, and not to share information for higher costs.<sup>3</sup> The sequentially rational and optimal strategy for the receiver is to accept the information when offered. Of note, comparing expected earnings, from the sender's viewpoint, sharing positive information *dominates* the strategy of sharing negative information. The cost of information transfer is not relevant for this comparison, and sharing positive data yields five more Francs for the sender than the expected earnings from sharing negative information.

We chose outcome values to create a setting that satisfies several conditions. First, sharing positive information always maximizes total output; second, a within-subject manipulation causes sender and firm incentives to align and to conflict (changing the economic prediction for the sender's decision); third, sharing negative information is a dominated strategy; and, finally, the receiver's decision strategy is not ambiguous. These features ensure that all economic predictions are corner solutions. We employ a lottery so that sharing of information influences but does not determine the competitive portion of the incentive payout.

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<sup>3</sup> Risk aversion on the part of the sender leads to the same bang-bang strategy but the cutoff cost value will be lower than 50 Francs. Averaging across participants (with potentially different tastes for risk) results in a downward sloping line for the (optimal) frequency of sharing positive information. However, the optimal strategy is not to share information for all high cost (> 50 Francs) values.

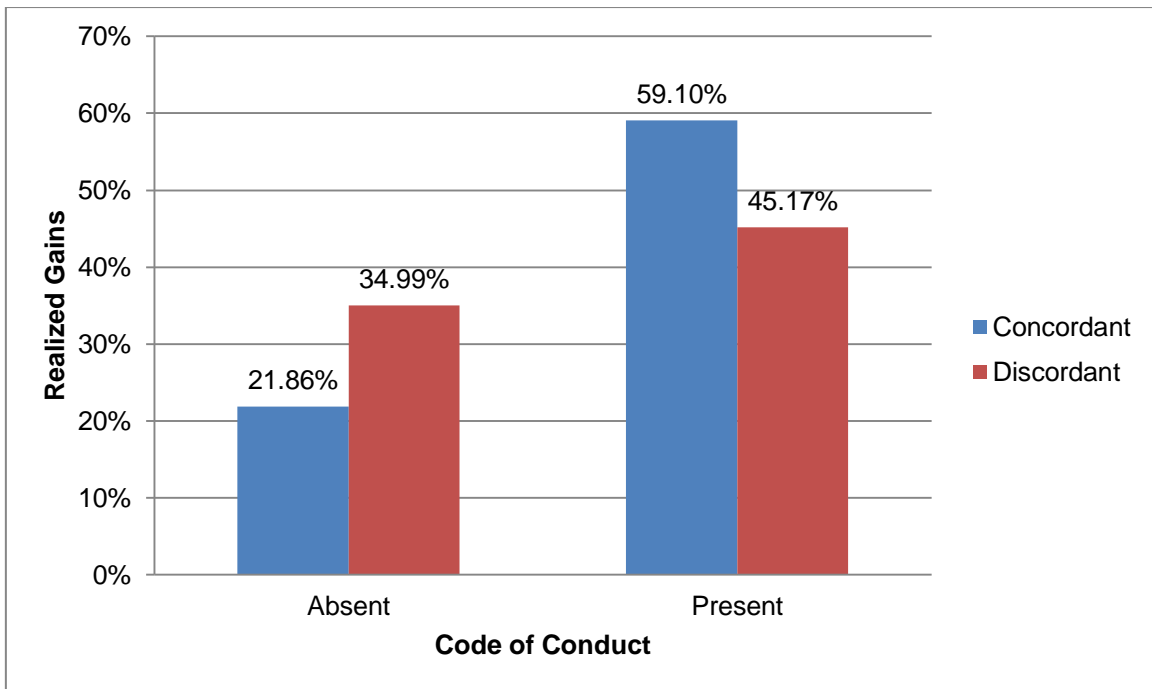
Finally, we do not incorporate effort into the task in order to avoid the noise stemming from variations in participant skill and effort aversion.

## **4. Results and Discussion**

### **4.1 Descriptive Statistics**

Table 3.1 provides the realized percentage of the possible gains for the different conditions. Focusing on low cost values (COST = 0 to 50) on the baseline condition (concordant, NCC), we find that only 21.86 percent of the possible gains are realized, which is far below the economic prediction of 100%. Adding a code of conduct increases the gains to 59.10%. This result indicates that the code of conduct has a substantial impact on collaboration between the partners. This is also true, although to a lower degree, for the discordant conditions. Here, the code of conduct leads to an increase of the realized gains from 34.99% to 45.17%. When comparing the concordant with the discordant treatments, we find preliminary support for our hypotheses. In the absence of a code of conduct, the realized gain in the discordant treatment is substantially higher (34.99%) than in the concordant treatment (21.86%). Having a code of conduct implemented reverses the order. The concordant treatment leads to gains of 59.10% compared to 45.17% for the discordant treatment. When turning to the high cost levels (COST = 60 to 100), collaboration levels and differences are low. In all treatments, the gains lie between -0.32% and 4.09%, indicating that non-monetary controls have a low impact when economic incentives are not aligned with individual outcomes. Figure 3.1 summarizes these results for the low-cost condition.





**Figure 3.1: Realized Percent of Possible Gains (Low Cost Levels)<sup>4</sup>**

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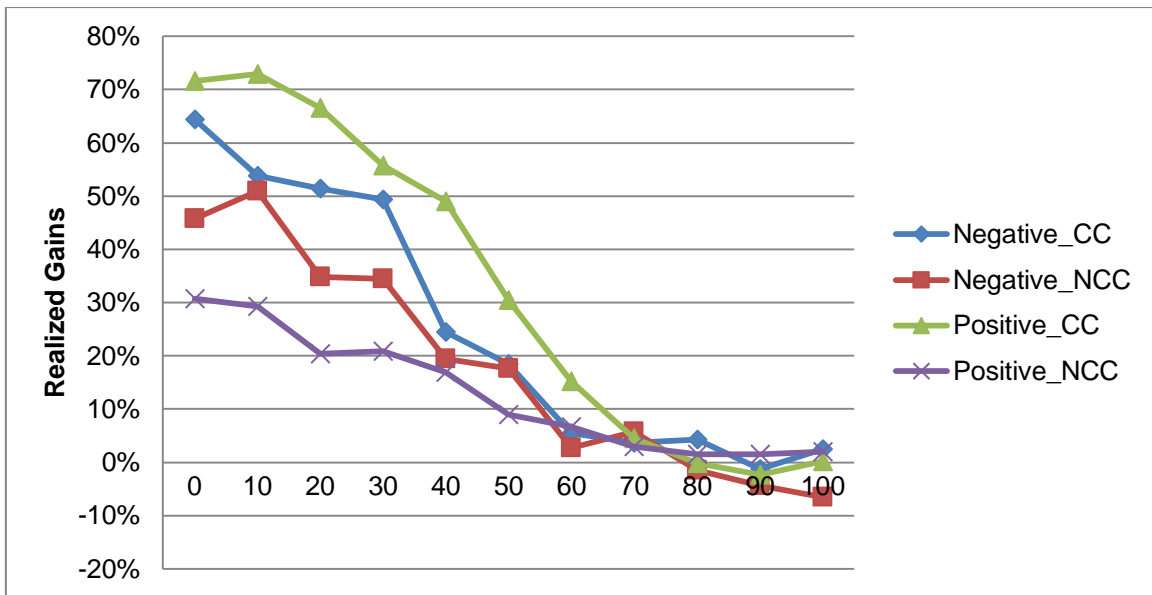
<sup>4</sup> We calculate realized payoffs based upon the strategy map elicited from every sender-receiver pair, net of the cost of information transfer.

**Table 3.1: Realized Gains to the Sender-Receiver Pair<sup>5</sup>**

		Concordant Actions by Firm			Discordant Actions by Firm		
		<i>All cost values</i>	<i>Cost ≤ 50 Francs</i>	<i>Cost &gt; 50 Francs</i>	<i>All cost values</i>	<i>Cost ≤ 50 Francs</i>	<i>Cost &gt; 50 Francs</i>
<b>No CC</b>	Sender	225.54	231.88	217.93	225.45	234.17	215.00
	Receiver	247.03	256.38	235.80	257.77	277.06	234.62
	Total	472.57	488.26	453.73	483.22	511.23	449.62
	Realized percent of possible gains from sharing information	15.05%	21.86%	3.11%	22.15%	34.99%	- 0.32%
<b>CC</b>	Sender	231.91	242.45	219.25	230.05	239.89	218.24
	Receiver	276.73	310.97	235.66	264.76	289.16	235.49
	Total	508.64	553.42	454.91	494.81	529.05	453.73
	Realized percent of possible gains from sharing information	39.09%	59.10%	4.09%	29.87%	45.17%	3.11%

Figure 3.2 includes the plots for all cost levels and shows that the clear order for low cost values is maintained for the different treatment. Again the (concordant, NCC) treatment has the lowest gains and (concordant, CC) yields the highest gains. Not surprisingly, we find a clear downward slope when cost values increase. For example, the gains in the (concordant, CC) treatment are above 70% for cost values of 0 and 10 and are only 30% for the cost value of 50 (for which it is still economically rational to share information) and go down further when costs increase. When cost values exceed 70, the gains are basically zero.

<sup>5</sup> Entries in the “all cost values” cells average results from 38,951 observations (3541 pairs per period \* 11 cost values per pair). Across all cost values, sharing of information leads to an expected gain of 150 Francs to the sender-receiver pair (i.e., the firm). The possible gain is 175 Francs for low cost values and 120 Francs for high cost values. Note that the equilibrium strategy for a risk-neutral agent differs for low and high cost values. With these strategies, the expected gain continues to be 175 Francs for low cost values and is zero for high cost values.



**Figure 3.2: Realized Percent of Possible Gains (All Cost Levels)<sup>6</sup>**

Table 3.2 and Table 3.3 report the results for individual behavior of the senders and receivers. We find very similar patterns for low cost values for both partners. Senders have the lowest level of sharing positive information in the (concordant, NCC) treatment (45.56%), followed by the (discordant, NCC) treatment (57.22) and in the two treatments in which the code of conduct is present, 61.49% for the discordant and 69.44% for the concordant treatment. The same order holds for the receivers who accept information in 61.11% of all cases for the (concordant, NCC), 68.89% for the (discordant, NCC), 79.89% for the (discordant, CC) and 86.67% for the (concordant, CC) treatments. Though we find more accepting by the receivers, the results are less consistent for the high cost values.

<sup>6</sup> We calculate realized payoffs based upon the strategy map elicited from every sender-receiver pair, net of the cost of information transfer.

**Table 3.2: Descriptive Statistics: Participant Strategies (Low Costs)<sup>7</sup>**

		<b>Concordance</b>	<b>Discordance</b>
<b>No CC</b>	No sharing	23.33%	25.00%
	Sharing good information	45.56%	57.22%
	Sharing bad information	31.11%	17.78%
	Acceptance of offer	61.11%	68.89%
<b>CC</b>	No sharing	21.56%	14.37%
	Sharing good information	69.44%	61.49%
	Sharing bad information	10.00%	24.13%
	Acceptance of offer	86.67%	79.89%

<sup>7</sup> We compute frequencies (in percent) based on the elicited strategy map. There are 15 observations in each condition, averaged over six/five cost values and five periods.

**Table 3.3: Descriptive Statistics: Participant Strategies (High Costs)**

		<b>Concordance</b>	<b>Discordance</b>
<b>No CC</b>	No sharing	86.00%	78.67%
	Sharing good information	14.00%	14.00%
	Sharing bad information	2.00%	7.33%
	Acceptance of offer	52.00%	56.67%
<b>CC</b>	No sharing	86.00%	85.52%
	Sharing good information	12.00%	12.41%
	Sharing bad information	2.00%	2.07%
	Acceptance of offer	58.00%	60.00%

## 4.2 Multivariate Analysis

We report all results for the individual decisions and the total group payoffs (gains) in Table 3.4 and 3.5. All results are based on maximum likelihood GEE estimates from a linear model, with observations clustered by subject (for costs) and with an AR (1) process for the ordering of costs. The clustering reflects the nesting of subjects within the different cost levels.

**Table 3.4: Individual Decisions (Low Costs)<sup>8</sup>**

		Sender Decisions			Receiver Decisions		
		Share good information (Cooperate)	Share bad information (Sabotage)		Accept		
		Hypothesis (predicted sign)	Coefficient (p – value, two-sided)	Hypothesis (predicted sign)	Coefficient (p – value, two-sided)	Hypothesis (predicted sign)	Coefficient (p – value, two-sided)
Intercept			0.510 (0.085)*		-0.340 (0.242)		0.538 (0.083)*
Costs			-0.031 (0.000)** *		-0.021 (0.001)***		-0.006 (0.304)
Belief systems (Code of conduct)		H1a (+)	1.036 (0.008)** *	H1a (-)	-1.439 (0.002)***	H1b (+)	1.344 (0.004)***
Discordant		H2a (+)	0.517 (0.176)	H2a (-)	-0.772 (0.053)*	H2b (+)	0.392 (0.333)
Belief systems * Discordant		H3a (-)	-0.396 (0.133)	H3a (+)	1.787 (0.004)***	H3b (-)	-0.878 (0.133)
Belief systems * concordant (contrasted to discordant and NCC)		H4 (+)	0.620 (0.056)*	H4 (-)	-1.066 (0.012)**	H4 (+)	0.953 (0.023)**

Number of Observations = 714

\*0.05 ≤ p < 0.1, \*\*0.01 ≤ p < 0.05, \*\*\* p < 0.01

<sup>8</sup> Results are GEE estimates from a logistic model, with observations clustered by subject (for costs) and with an AR (1) process for the ordering of costs. The clustering reflects the nesting of subjects within the different cost levels. Indicator variables are for the code of conduct (no = 0, yes = 1) and the discordance (no = 0, yes = 1). Cost values range from 0 to 50 Francs. In the model addressing the receiver's decision to accept the information with regard to "all cost values" there are 714 observations (119 pairs per period x 6 cost values per pair). The first observation in each cell is the estimate and the second observation (in brackets) is the two-sided p-value.

**Table 3.5: Payoffs from Strategies Employed (Low Costs)<sup>9</sup>**

		All costs	COST = 0
	Hypothesis (predicted sign)	Coefficient (p – value, two-sided)	Coefficient (p – value, two-sided)
Intercept		527.046 (0.000)***	511.400 (0.000)***
Costs		-1.564 (0.000)***	n.a.
Belief systems (Code of conduct)	H1c (+)	62.135 (0.000)***	81.889 (0.000)***
Discordant	H2c (+)	22.470 (0.000)***	30.222 (0.000)***
Belief systems * Discordant	H3c (-)	-43.812 (0.000)***	-44.795 (0.000)***
Belief systems * Concordant (contrasted to Discordant and NCC)	H4 (+)	41.420 (0.000)***	50.154 (0.000)***
		Number of Observations = 21,246	Number of Observations = 3,541

\*0.05 <= p < 0.1, \*\*0.01 <= p < 0.05, \*\*\* p < 0.01

With regard to adding a code of conduct (H1), we find reliable and significant results on the individual and group level. Senders share more positive information (p = 0.008) and less negative information (0.002). Receivers are significantly more willing to accept offered information (0.006). This translates into significantly increased gains on the group level for both all low-cost values and COST = 0 (p < 0.0001 each). Overall, the results strongly support H1a, H1b, and H1c.

<sup>9</sup> The dependent variable is the total realized payoff as a percent of the total available gain from information transfer (200 Francs before the costs of considering the cost of information transfer). We compute realized values based on the elicited strategy map and netting out the costs of information transfer. Results are maximum likelihood GEE estimates from a linear model, with observations clustered by subject (for costs) and with an AR (1) process for the ordering of costs. The clustering reflects the nesting of subjects within periods. Indicator variables are for the code of conduct (No = 0, Yes = 1) and discordance (no = 0, yes = 1). Cost values range from 0 to 50 Francs. There are 21,246 observations (3541 pairs x 6 cost values per pair). The first observation in each cell is the estimate and the second observation (in brackets) is the two-sided p-value.

When looking at switching from concordant to discordant firm action, we have hypothesized a positive effect on the level of collaboration (H2). On the individual level, we find mixed results for the senders' behaviors. As the result for sharing more positive information is not significant ( $p = 0.176$ ), the results for sharing less negative information are weakly significant ( $p = 0.053$ ). On the receivers' side, switching from concordant to discordant firm actions is not significant ( $p = 0.333$ ). However, on the group level, gains are significantly higher for all low-cost values and  $COST = 0$  ( $p < 0.001$  each). Overall, we find weak support for H2a, no significant results for H2b, and strong support for H2c. Note that all signs on the individual level point in the hypothesized direction.

Based on our theoretical predictions, we hypothesize a negative interaction of discordant firm actions and the code of conduct (H3). When analyzing the individual decision, we again find weak support for H3a, i.e. significance levels of  $p = 0.133$  for sharing less positive information and  $p = 0.004$  for sharing more negative information. The receivers' information acceptance is not significant ( $p = 0.133$ ). However, all regression variables have the predicted sign and are at least weakly significant when looking at the one-sided p-levels (at the 10%-level). Therefore, it comes as no surprise that the joint effect (gains on the group level) is highly significant for both all low-cost values and for  $COST = 0$  ( $p < 0.001$  each). In summary, H3a is weakly supported, H3b is only weakly supported when one-sided p-levels are taken into account, and H3c is fully supported.

Lastly, we analyze the interaction effect of a code of conduct and concordant firm actions (H4). In order to test this hypothesis, we have to contrast this condition with the (discordant, NCC) treatment. Here, we find reliably significant results for the individual decisions of the senders and receivers as well. In line with our predictions, the senders share more positive information ( $p = 0.056$ ) and share less negative information ( $p = 0.012$ ). The receivers accept offered information more often ( $p = 0.023$ ). On the group level, the results for the realized gains are highly significant ( $p < 0.001$ ). We conclude that H3, including all sub-hypotheses H3a, H3b, and H3c is supported.



### 4.3 Supplementary Analysis

In supplementary analyses, we investigate the high cost values (see Table 3.6) and potential mediating item at the individual level (integrity, commitment, competitiveness, and altruism). Starting with gains for high cost levels, we find that the introduction of a code of conduct positively increases collaboration ( $p = 0.058$ ). In contrast, the effect when switching from concordant to discordant firm actions is reliably negative ( $p < 0.001$ ). The interaction between the code of conduct and discordant firm actions is not significant ( $p = 0.216$ ). However, we emphasize that the level of sharing information is substantially lower than in the low-cost conditions.

**Table 3.6: Payoffs from Strategies Employed (High Costs)<sup>10</sup>**

	All costs
Observations	N = 17,705
Intercept	476.962 (0.000) <sup>***</sup>
Costs	-0.282 (0.000) <sup>***</sup>
Belief systems (Code of conduct)	2.560 (0.058) <sup>*</sup>
Discordant	-5.163 (0.000) <sup>***</sup>
Belief systems * Discordant	2.383 (0.216)

\* $0.05 \leq p < 0.1$ , \*\* $0.01 \leq p < 0.05$ , \*\*\*  $p < 0.01$

<sup>10</sup> The dependent variable is the total realized payoff as a percent of the total available gain from information transfer (200 Francs before the costs of considering the cost of information transfer). We compute realized values based on the elicited strategy map and netting out the costs of information transfer. Results are maximum likelihood GEE estimates from a linear model, with observations clustered by subject (for costs) and with an AR (1) process for the ordering of costs. The clustering reflects the nesting of subjects within the different cost level. Indicator variables are for the code of conduct (No = 0, Yes = 1) and discordance (no = 0, yes = 1). Cost values range from 60 to 100 Francs. There are 17,705 observations in each condition (5 periods x 3,541 pairs). The first observation in each cell is the estimate and the second observation (in brackets) is the two-sided p-value.

## 5. Conclusions

Drawing on Basu and Palazzo's (2008) sense-making model, we analyze the interplay of the linguistic (what firms say), and the conative dimension (how firms tend to behave). Not surprisingly, employees are the most collaborative when both dimensions are aligned with economic incentives, i.e. a firm economically incentivizes collaborative behavior that is coherent with the firm's expressed values and norms (code of conduct) and its actual behavior. In this case, the employees do not only face any cognitive dissonance, they can also expose behavior that expresses their own norms and values, which is in line with the psychological need of autonomy. By collaborating, they can also help others to benefit, which complies with the need of relatedness. However, unexpectedly at first glance, unethical (discordant) firm behavior does not automatically trigger non-collaborative behavior. Even though collaboration levels are lower compared to the fully aligned situation, they are higher than in a situation with concordant firm behavior when a code of conduct is absent. SDT helps to explain this behavior. Reflecting on unethical (discordant) firm behavior leads to perceived cognitive dissonance and motivates employees to counteract such negative behavior and exhibit higher levels of collaboration compared to the situation where expressed norms and values (what a firm thinks) are absent. Employees act autonomously according to their own (intrinsic) motives. Adding a code of conduct when firm behavior is discordant again increases levels of collaboration, as the expressed norms make ethical behavioral responses more salient. As we generally find a positive influence of the code of conduct when economic incentives point towards collaboration, misaligned economic incentives reduce the overall levels of collaboration and adding a code of conduct is then only weakly significant (at the 10%-level).

Our findings are helpful for explaining why the literature on the effects of codes of conduct is mixed. Whereas some studies find more ethical behavior, others conclude that codes of conduct can even be harmful. Our work contributes to a deeper understanding of the effectiveness of such codes in dependence on contextual factors such as firm behavior and incentive systems. Overall, our findings show that a code of conduct yields strong benefits when incentive systems align and the code of conduct (what a firm says) are congruent with the firm's management practices (what a firm does). Employing SDT, we were able to address

the underlying psychological forces behind the integration of social norms. As SDT focuses on fulfilling basic psychological needs, such as autonomy and relatedness, it explains when and how people internalize norms and values of their social group. With regard to our experimental setting, the different types of motivation in SDT are also helpful for predicting information-sharing behavior in an organization setting (Gagné, 2009). SDT also addresses the social context that enhances or diminishes the different types of motivation. The degree to which basic psychological needs for autonomy and relatedness are fulfilled affects the type and strength of motivation. Contextual factors, which satisfy the psychological need for self-determination, enhance intrinsic motivation and the integration of external regulations such as belief systems. The results especially indicate that providing choice (as the opportunity to act autonomously) is relevant for promoting internalization (Deci and Ryan, 1994).

SDT offers practical guidance on how to develop and design monetary and non-monetary controls. Such controls influence attitudes, need satisfaction, and sharing norms. They refer to job design, performance appraisal and compensation systems, managerial styles, and training (Gagné, 2009). Especially, our study shows that employees are not only guided by formal norms but also by the behavior of the management. Thus, we point out the importance of managers in enforcing social norms, e.g. firms should train managers to be more transformational, to share and to act according to social norms and to fulfill employees' basic psychological needs (Gagné, 2009). Leadership has been shown to not only influence the employees' intrinsic motivations (Piccolo and Colquitt, 2006), but managers must be perceived to support the norms expressed in a code in order to enhance awareness and to reinforce the code. Besides increasing the expressed norms' salience, it is crucial that managers act as positive role models and set reasonable performance targets for employees that promote compliance with the code (Schwartz, 2004). Further, our results emphasize that monetary incentive systems should motivate compliance with the code of conduct. As a consequence, firms should adjust their incentive systems so that any violating of norms embedded in the code of conduct does not yield economic rewards.

Our work is also subject to several limitations. First, we have focused on knowledge-sharing behavior. Recent literature discusses a broad variety of antisocial behaviors in firms, such as bribery, misreporting of financial results,

favoritism, and corporate fraud (Mishina et al. 2010). An analysis including other types of antisocial behaviors, which vary in severity, would yield further insight into the interplay of expressed norms and firm behavior. Second, our paper does not consider repeated interaction between the team members. Interactions could induce positive reciprocal behavior and could create trust between team members (Fehr and Gächter, 2000). This could enhance commitment in groups and collaborative behavior independent of expressed norms. Third, we focus on a situation where compliance with a code of conduct is not monitored and sanctioned. Functioning boundary systems, which successfully prevent active sabotage, could add to the effectiveness of corporate belief systems (Kaptein, 2011) even when cognitive dissonances cannot be fully eliminated (Balakrishnan and Letmathe 2017).

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## **Appendix**

### **Appendix 3.A. Code of Conduct**

As part of its training and other materials, SAFECO has set up the following code of conduct, which should guide the behavior of all employees. Please read the following. Also, take the printed “SAFECO Code of Conduct” from your file folder and sign it. You should also initial each of the four key sections. You will be required to turn in a signed copy before being paid for this experiment.

#### **SAFECO Code of Conduct**

At SAFECO, four pillars guide our actions at all Periods.

##### **INTEGRITY - The Power of Honesty**

Integrity is the foundation of all we do. It is a constant. Those with whom we work, live and serve can rely on us. We align our actions with our words and deliver what we promise. We build and strengthen our reputation through trust. We do not improperly influence others or let them improperly influence us. We are respectful and behave in an open and honest manner. In short, the reputation of the enterprise reflects the ethical performance of the people who work here.

##### **EXCELLENCE - The Power of Quality**

We set and achieve ambitious goals. The quality of our products and services reflects the power and heritage of SAFECO —the pride we take in what we do and what we make possible. We are passionate about people, process, product and service excellence. We are determined to serve our customers through innovation, continuous improvement, an intense focus on customer needs and a dedication to meet those needs with a sense of urgency. For us, Excellence is not only a value; it is a discipline and a means for making the world a better place.

## TEAMWORK - The Power of Working Together

We help each other succeed. We are a team, sharing our unique talents to help those with whom we work, live and serve. The diverse thinking and decision making of our people strengthens our team. We respect and value people with different opinions, experiences and backgrounds. We strive to understand the big picture, and then do our part. We know that by working together, we can produce better results than any of us can achieve alone.

## COMMITMENT - The Power of Responsibility

We embrace our responsibilities. Individually and collectively we make meaningful commitments—first to each other, and then to those with whom we work, live and serve. We understand and focus on the needs of our customers. We are global citizens and responsible members of our communities who are dedicated to safety, care for our environment and manage our business ethically. We know it is both our duty and our honor to carry the SAFECO heritage forward.

Note (not visible to participants): Adopted from the Code of Conduct used by Caterpillar, Inc.

### **Appendix 3.B. Press Coverage**

Press article covering the management practices of SAFECO and its direct competitor UNIKORN<sup>11</sup>

Over the course of the last weeks, several employee-related scandals have filled the business pages of newspapers and magazines. Some commentators have suggested that the scandals are the result of differing management policies even in firms within the same industry. An oft-cited contrast is between SAFECO and UNIKORN, which are direct competitors. SAFECO's strategy relies on strict cost management, leading it to aggressively bargain with employees regarding their compensation and benefits. It has tested legal limits by monitoring employees with surveillance cameras and encouraging them to report on the behavior of their colleagues. SAFECO also is renowned for its use of standard policies, which primarily focus on financial outcomes, when dealing with its suppliers and customers. SAFECO executives assert that such measures are the only way to make profits in their fiercely competitive industry. In contrast, even frontline employees in UNIKORN are given considerable autonomy and freedom in executing their duties as the firm's strategy relies on high service quality. The firm invests a considerable amount of trust in its employees and consciously pays higher than average wages and benefits. UNIKORN is often singled out for routinely including environmental and social factors when evaluating relationships with suppliers and customers. UNIKORN's management claims that such policies create happy employees who are the key to firm's contribution to its stakeholders and society.

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<sup>11</sup> In the different conditions, the subjects were either working for SAFECO (negative press coverage) or UNIKORN (positive press coverage). To ensure that sequence does not play a role, we have alternated the positive and negative reports within the press release so that 50 percent of the subjects in each condition had the negative coverage first and the other 50 percent the negative coverage second.

### Appendix 3.C. Decision Structure and Economic Outcome

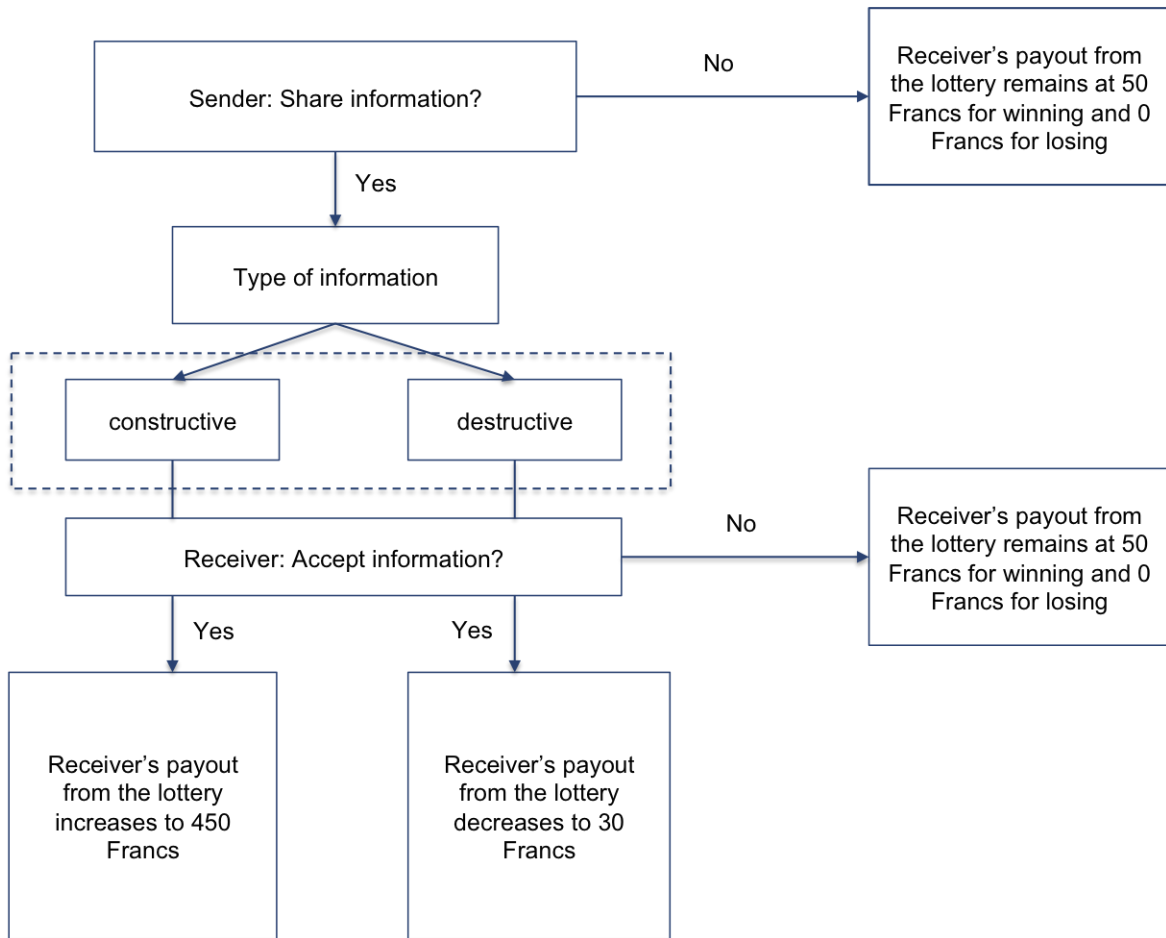


Figure C – 3.1: Flow Chart of Decision Sequence

**Table C – 3.1: Individual Payout from Lottery alone**

<b>Sender Lottery outcome</b>	<b>Receiver Lottery outcome</b>	<b>Variable pay person (sender and receiver)</b>	<b>Who wins the bonus?</b>	<b>Total pay for sender</b>	<b>Total pay for receiver</b>
WIN	WIN	250 Francs = $0.5 * (50 + 450)$	Receiver gets bonus of 400 Francs	250 Francs	650 Francs
WIN	LOSE	25 Francs = $0.5 * (50 + 0)$	Sender gets bonus of 400 Francs	425 Francs	25 Francs
LOSE	WIN	225 Francs = $0.5 * (0 + 450)$	Receiver gets bonus of 400 Francs	225 Francs	625 Francs
LOSE	LOSE	0 Francs = $0.5 * (0 + 0)$	Sender gets bonus of 400 Francs equally shared	200 Francs	200 Francs
<b>EXPECTED PAY</b>				275 Francs	375 Francs

**Table C – 3.2: Expected Payout for Various Decision Strategies**

<b>Action strategy chosen</b>	<b>Sender</b>	<b>Receiver</b>
No information is shared (note 2)	225 Francs	225 Francs
Sender offers to share information; receiver rejects (note 2).	225 Francs – cost of sharing information	225 Francs
Sender offers to share information. Sends positive information. Receiver accepts (does not know kind of information shared), (note 3).	275 Francs – cost of sharing information	375 Francs
Sender offers to share information. Sends negative information. Receiver accepts (does not know kind of information shared), (note 4).	270 Francs – cost of sharing information	170 Francs

## Notes

1. The amount for the sender's lottery is constant at 50 Francs for winning and 0 Francs for losing. Each person obtains 50% of the total output, which is the sum of individual winnings. The person with the higher individual output also obtains a bonus of 400 Francs (ties lead to equal bonus). In experimental materials, we refer to the sender and the receiver as Person X and Person Y, respectively.
2. If no information is shared (or if information is shared but rejected), the output value from winning the lottery stays at 50 Francs for both players. Expected firm output is 50 Francs =  $0.25 \times (50 + 50) + 0.25 \times (0 + 50) + 0.25 \times (50 + 0) + 0.25 \times (0 + 0)$ . Each player expects to earn 25 Francs as their share of the firm output. Each player also expects to win the bonus outright with probability  $\frac{1}{4}$  and tie with probability  $\frac{1}{2}$ . Expected earnings from the bonus are 200 Francs (=  $0.25 \times 400 + 0.5 \times \frac{1}{2} \times 400$ ). Thus, the total expected earnings for the sender (and for the receiver) are 225 Francs. The sender incurs transactions costs if sharing information.
3. Suppose the sender shares positive information and the receiver accepts the offer. Then, expected firm output is 250 Francs (=  $0.25 \times 500 + 0.25 \times 450 + 0.25 \times 50 + 0.25 \times 0$ ). The sender expects to win the bonus outright with probability  $\frac{1}{4}$  and tie with probability  $\frac{1}{4}$ . The expected bonus is 150 Francs (=  $0.25 \times 400 + 0.25 \times \frac{1}{2} \times 400$ ). Total expected earnings for the sender are 275 Francs = 125 as the share of the firm output + 150 as the bonus. The receiver expects to earn 125 Francs as their share of firm output and 250 Francs as the expected bonus (= 400 Francs – 150 expected by the sender), for a total of 375 Francs. The sender also incurs transactions costs.
4. Suppose the sender shares negative information and the receiver accepts the offer. Then, expected firm output is 40 Francs (=  $0.25 \times 80 + 0.25 \times 30 + 0.25 \times 50 + 0.25 \times 0$ ). Moreover, the sender expects to win the bonus outright with probability  $\frac{1}{2}$  and tie with probability  $\frac{1}{4}$ . With the expected bonus of 250 Francs (=  $0.50 \times 400 + 0.25 \times \frac{1}{2} \times 400$ ) and 20 Francs as the share of firm output, total expected earnings for the sender are 270 Francs. By similar calculation, a receiver expects to earn 170 Francs. The sender also incurs transactions costs.

5. Socially, cooperation therefore produces total gain of 200 Francs, split as 50 Francs to the sender and 150 Francs to the receiver before considering transaction costs.



## Appendix 3.D. Experimental Instructions

Note:

Red information: Information for the treatment with code of conduct

Green information: Information for the treatment with consistent firm behavior (positive press coverage)

The purpose of this study is to examine how people make decisions in work place settings. The study consists of the following parts:

- 1) An INFORMATION session about the firm you are working for and today's task;
- 2) A LEARNING session about your payment contract;
- 3) A DECISION MAKING session.
- 4) A QUESTIONNAIRE

You and your group member will go through the INTRODUCTION and LEARNING sessions independently. Then, you will work together in the DECISION MAKING session.

[Click Here to Begin](#)

INFORMATION: Introduction to your firm

For the purpose of this experiment, assume that you are working for a medium-sized company, headquartered in Europe and with operations in Asia, Africa and North America. The company, "SAFECO", has been profitable for the past few years and expects to continue this trend. Later, we will provide an additional press article, which describes SAFECO's management practices.

[Continue](#)

As part of its training and other materials, SAFECO has set up the following code of conduct which should guide the behavior of all employees. Please read the following. Also, take the printed "SAFECO Code of Conduct" from your file folder and sign it. You should also initial each of the four key sections. You will be required to turn in a signed copy before you can be paid for this experiment.

### **SAFECO Code of Conduct**

At SAFECO, four pillars guide our actions at all times.

#### **INTEGRITY - The Power of Honesty**

**Integrity is the foundation of all we do.** It is a constant. Those with whom we work, live and serve can rely on us. We align our actions with our words and deliver what we promise. We build and strengthen our reputation through trust. We do not improperly influence others or let them improperly influence us. We are respectful and behave in an open and honest manner. In short, the reputation of the enterprise reflects the ethical performance of the people who work here.

#### **EXCELLENCE - The Power of Quality**

**We set and achieve ambitious goals.** The quality of our products and services reflects the power and heritage of SAFECO—the pride we take in what we do and what we make possible. We are passionate about people, process, product and service excellence. We are determined to serve our customers through innovation, continuous improvement, an intense focus on customer needs and a dedication to meet those needs with a sense of urgency. For us, Excellence is not only a value; it is a discipline and a means for making the world a better place.

#### **TEAMWORK - The Power of Working Together**

**We help each other succeed.** We are a team, sharing our unique talents to help those with whom we work, live and serve. The diverse thinking and decision making of our people strengthens our team. We respect and value people with different opinions, experiences and backgrounds. We strive to understand the big picture, then do our part. We know that by working together, we can produce better results than any of us can achieve alone.

#### **COMMITMENT - The Power of Responsibility**

**We embrace our responsibilities.** Individually and collectively we make meaningful commitments—first to each other, and then to those with whom we work, live and serve. We understand and focus on the needs of our customers. We are global citizens and responsible members of our communities who are dedicated to safety, care for our environment and manage our business ethically. We know it is both our duty and our honor to carry the SAFECO heritage forward.

Continue

Press article covering the management practices of SAFECO and its direct competitor UNIKORN

In the different conditions, the subjects were either working for SAFECO (negative press coverage) or UNIKORN (positive press coverage).

Over the course of the last weeks, several employee-related scandals have filled the business pages of newspapers and magazines. Some commentators have suggested that the scandals are the result of differing management policies even in firms within the same industry. An oft-cited contrast is between SAFECO and UNIKORN, which are direct competitors. SAFECO's strategy relies on strict cost management, leading it to aggressively bargain with employees regarding their compensation and benefits. It has tested legal limits by monitoring employees with surveillance cameras and encouraging them to report on the behavior of their colleagues. SAFECO also is renowned for its use of standard policies, which primarily focus on financial outcomes, when dealing with its suppliers and customers. SAFECO executives assert that such measures are the only way to make profits in their fiercely competitive industry. In contrast, even frontline employees in UNIKORN are given considerable autonomy and freedom in executing their duties as the firm's strategy relies on high service quality. The firm invests a considerable amount of trust in its employees and consciously pays higher than average wages and benefits. UNIKORN is often singled out for routinely including environmental and social factors when evaluating relationships with suppliers and customers. UNIKORN's management claims that such policies create happy employees who are the key to firm's contribution to its stakeholders and society.

### **LEARNING: Today's task**

For your task today, you will be assigned to work with one other employee. You will only interact with the other employee via the computer. You will never learn the identity of this person. Your partner too will never learn your identity.

Your compensation will depend on decisions that both you and your partner make.

In particular,

1. You will be assigned to a team. Each team contains two persons – you and your partner. In each team, one person will be designated as Person X and the other person will be designated as Person Y. You have an equal chance of being designated as Person X or as Person Y.
2. Each of you will make decisions.
3. Based on your decisions and the computer's random draw, we will determine payments. You can collect your payments at the front desk.

Continue

## Your payment contract

Both you and your partner will face an independent lottery.

- The chance of winning the lottery is fixed at 50% for each person.
- If you should lose the lottery, you contribute 0 Francs to the team total. Similarly, your partner will contribute 0 Francs to the team total if s/he loses her / his lottery.
- If you should win the lottery, the amount contributed to the team total will change based on the decisions that you and your partner have made earlier. Similarly, if s/he wins her / his lottery, the amount contributed to the total will again depend on the decisions made earlier.

In sum, your cash payment depends on whether you and/or your partner win your respective lottery, and the amounts associated with winning the lottery. These amounts will depend on decisions made about offering to share information, and about accepting / rejecting the offer.

There are three parts to the payment:

1. If Person X decides to share information, s/he will incur a cost for this decision. The cost of sharing information comes directly out of Person X's final payment and does not affect the chance of winning the lotteries or the payments. There is no cost to Person Y for accepting or rejecting Person X's offer to share information.
2. Both Person X and Person Y will receive 50% of the team total. That is, the team's total output will be equally shared, regardless of who produces that output.
3. The person with the higher output (this could be Person X or Person Y) gets a bonus of 400 Francs. In case both Person X and Person Y have the same output, the bonus will be 200 Francs each.

In addition to the above payment for the task, you receive a show up fee of 50 Francs.

At the end of the experiment, we will convert Francs to Euros at the rate of **30 Francs = 1 Euro.**

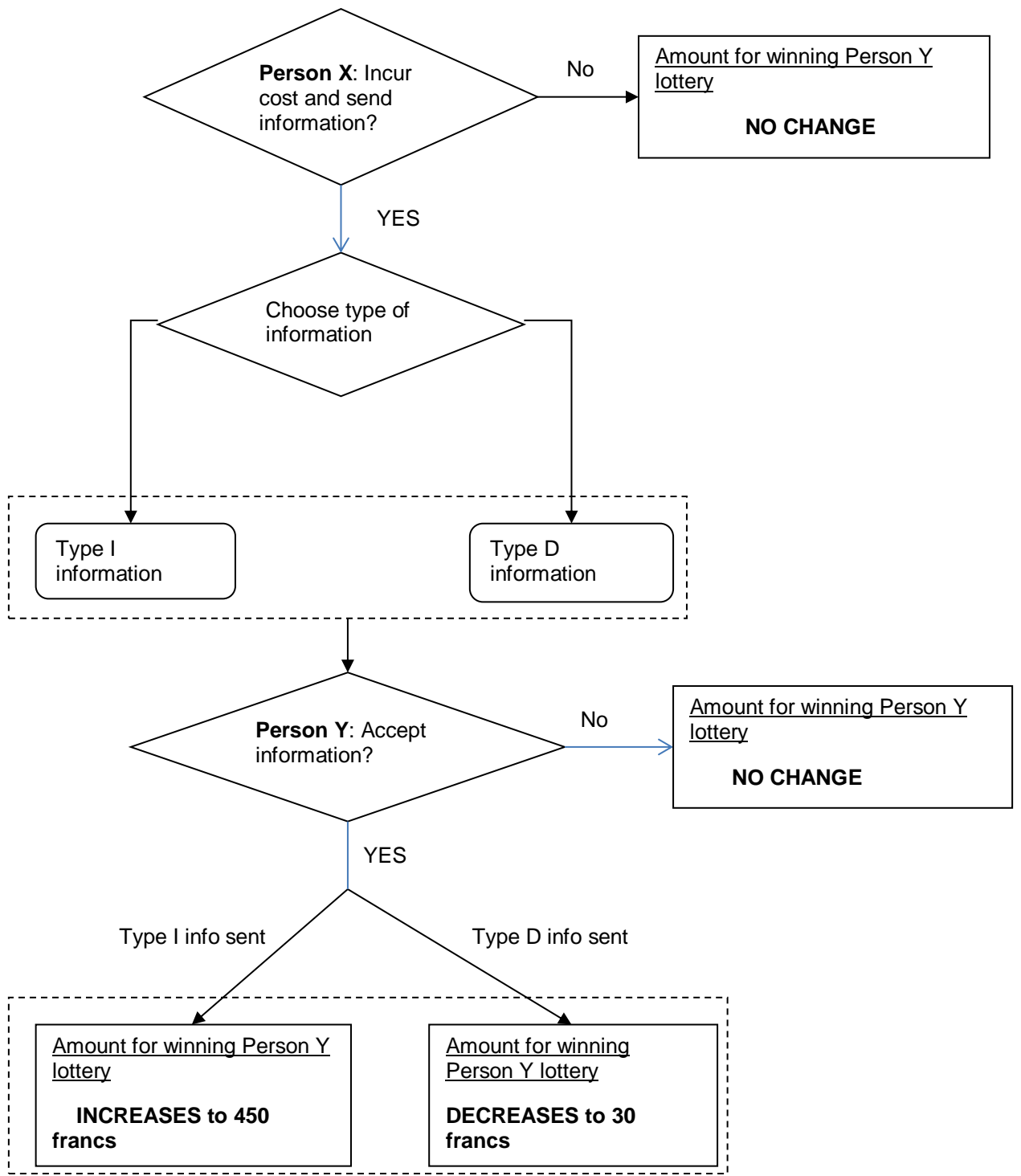
I have understood that details of  
compensation

## Details of task

In this task, your job is to decide regarding sharing of information that affects the outcome. The following steps provide the details.

1. Both Person X and Person Y face an independent lottery. Each person has a 50% chance of winning their own lottery. The payments for the lottery (0 for losing, 50 Francs for winning) are the same at the start. The amount for winning the lottery will change in tune with decisions by both Person X and by Person Y. The final amount for winning the lottery might therefore be different for Person X and for Person Y.
2. Person X will decide on whether to share information with Person Y and what kind of information to share.
  - a. If Person X does not share any information, there is no change in the winning amounts. These stay at 50 Francs. There is no cost to not sharing information.
  - b. Deciding to share information (of any kind) will cost some money for Person X. (The exact amount will be described later.) This cost will be deducted from her / his final payment.
  - c. Person X can also decide the kind of information to send:
    - i. Type I information will increase the winning payment for Person Y's lottery. The winning amount will increase by 400 Francs and will be 450 Francs (= 50 + 400 Francs). The winning amount for Person X's lottery stays at 50 Francs.
    - ii. Type D information will decrease the winning payment for Person Y's lottery. The winning amount will decrease by 20 Francs and will be 30 Francs (= 50 - 20 Francs). The winning amount for Person X's lottery stays at 50 Francs.
3. Person Y will decide whether to accept Person X's information or not.
  - a. If Person X rejects the information, the amount for winning the lottery does not change. The winning amounts for both parties stay at 50 Francs.
  - b. If Person Y accepts the information, the amount for winning the lottery will change as determined by the nature of the information sent by Person X. Person Y will not know the kind of information sent when making her / his decision.
4. The outcome of each person's lottery is determined as a result of a random drawing. The decisions do NOT ever affect the amount of Person X's lottery. They only change the amounts for Person Y's lottery.
5. Both Persons X and Y will learn the results of the two lotteries. The results will determine the total amount (which determines the variable pay) and who (Person X or Person Y or both in case of a tie) gets the bonus. They will then collect the payment at the front desk. **The total pay will be offset against the show-up fee. A loss cannot occur.**

Click to see a flow chart



**Notes:**

1. The dotted box represents that Person Y will not know whether type I or type D information was sent by Person X.
2. Person X will incur a cost regardless of whether Person Y accepts the information or not.

Continue

**Example: no information shared**

The following is an example of your payment contract. As noted above, the variable portion of your compensation depends on the outcome of your own lottery and that of your partner. The lottery below illustrates the case in which no information is shared. Therefore, the lottery amounts do not change from the initial amounts. Moreover, Person X will not incur any cost for sharing information.

There are four possible cases:

<b>Person X outcome</b>	<b>Person Y outcome</b>	<b>Variable pay person x / y</b>	<b>Who wins the bonus?</b>	<b>Total pay person X</b>	<b>Total pay person Y</b>
WIN	WIN	50 Francs = $0.5 * (50 + 50)$	Bonus of 400 Francs equally shared	250 Franc	250 Franc
WIN	LOSE	25 Francs = $0.5 * (50 + 0)$	Person X gets the bonus of 400 Francs	425 Franc	25 Franc
LOSE	WIN	25 Francs = $0.5 * (0 + 50)$	Person Y gets the bonus of 400 Francs	25 Franc	425 Franc
LOSE	LOSE	0 Francs = $0.5 * (0 + 0)$	Bonus of 400 Francs equally shared	200 Franc	200 Franc

I have understood the payment contract
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**Example: type I information shared & accepted**

The following is an example of your payment contract. As noted above, the variable portion of your compensation depends on the outcome of your own gamble and that of your partner. The lottery below illustrates the case in which information is shared by Person X and is accepted by Person Y. Therefore, the lottery amounts change from the initial amounts as indicated. Moreover, Person X **will** incur a cost (detailed later) for sharing information.

<i>Person X outcome</i>	<i>Person Y outcome</i>	<i>Variable pay person x / y</i>	<i>Who wins the bonus?</i>	<i>Total pay person X</i>	<i>Total pay person Y</i>
WIN	WIN	250 Francs = $0.5 * (50 + 450)$	Bonus of 400 Francs equally shared	250 Franc	650 Franc
WIN	LOSE	25 Francs = $0.5 * (50 + 0)$	Person X gets the bonus of 400 Francs	425 Franc	25 Franc
LOSE	WIN	225 Francs = $0.5 * (0 + 450)$	Person Y gets the bonus of 400 Francs	225 Franc	625 Franc
LOSE	LOSE	0 Francs = $0.5 * (0 + 0)$	Bonus of 400 Francs equally shared	200 Franc	200 Franc

I have understood the payment  
contract



**Example: type D information shared & accepted**

The following is an example of your payment contract. As noted above, the variable portion of your compensation depends on the outcome of your own gamble and that of your partner. The lottery below illustrates the case in which no information is shared by Person X and is accepted by Person Y. Therefore, the lottery amounts change from the initial amounts as indicated. Moreover, Person X **will** incur a cost (detailed later) for sharing information.

<i>Person X outcome</i>	<i>Person Y outcome</i>	<i>Variable pay person x / y</i>	<i>Who wins the bonus?</i>	<i>Total pay person X</i>	<i>Total pay person Y</i>
WIN	WIN	40 Francs = $0.5 * (50 + 30)$	Bonus of 400 Francs equally shared	440 Franc	40 Franc
WIN	LOSE	25 Francs = $0.5 * (50 + 0)$	Person X gets the bonus of 400 Francs	425 Franc	25 Franc
LOSE	WIN	15 Francs = $0.5 * (0 + 30)$	Person Y gets the bonus of 400 Francs	15 Franc	415 Franc
LOSE	LOSE	0 Francs = $0.5 * (0 + 0)$	Bonus of 400 Francs equally shared	200 Franc	200 Franc

I have understood the payment contract
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**Example: information shared but rejected**

The following is an example of your payment contract. As noted above, the variable portion of your compensation depends on the outcome of your own gamble and that of your partner. The lottery below illustrates the case in which information is shared by Person X but the offer is rejected by Person Y. Therefore, the lottery amounts do not change from the initial amounts. Moreover, Person X **will** incur a cost (detailed later) for sharing information.

<i>Person X outcome</i>	<i>Person Y outcome</i>	<i>Variable pay person x / y</i>	<i>Who wins the bonus?</i>	<i>Total pay person X</i>	<i>Total pay person Y</i>
WIN	WIN	50 Francs = $0.5 * (50 + 50)$	Bonus of 400 Francs equally shared	250 Franc	250 Franc
WIN	LOSE	25 Francs = $0.5 * (50 + 0)$	Person X gets the bonus of 400 Francs	425 Franc	25 Franc
LOSE	WIN	25 Francs = $0.5 * (0 + 50)$	Person Y gets the bonus of 400 Francs	25 Franc	425 Franc
LOSE	LOSE	0 Francs = $0.5 * (0 + 0)$	Bonus of 400 Francs equally shared	200 Franc	200 Franc

I have understood the payment  
contract

## Eliciting decisions

As noted earlier, sharing information is costly to Person X. The cost of sharing the information is the same for both Type I and Type D information.

The cost of the information could be 0, 10, 20, 30, ...100 Francs. If you are Person X, we will ask you to make the decision for each of these possible costs. That is, Person X will be asked

“Suppose your cost of sharing information is 20 Francs. Do you wish to share the information that will change the winning amount of Person Y’s lottery?”

If Person X chooses “Yes” to the above question, a follow up question will ask:

“For a cost of 20 Francs, you have chosen to share the information that will change the winning amount of Person Y’s lottery. Do wish to send Type I information (which increases Person Y’s winning payout by 400 Francs) OR do you wish to send Type D information (which decreases Person Y’s winning payout by 20 Francs)?”

If you are Person Y, we will ask you to similarly make 10 separate decisions on whether to accept the information or not. That is, Person Y will be asked,

“Suppose the cost to Person X of sharing information is 40 Francs. Person X has chosen to send information. Do you wish to accept this information?”

Click on the ‘continue’ button below to see an example screen for inputting your decision.

Continue

**Example screen (person X):**

If you are Person X, you will see a screen like the following and can record your decisions using the drop down menu:

<b><i>If cost of sharing information is:</i></b>	<b><i>Do you wish to share information?</i></b>	<b><i>Type of information to share</i></b>
0 Francs	YES / No (drop box)	Type I / Type D (drop box)
10 Francs	YES / No (drop box)	Type I / Type D (drop box)
20 Francs	YES / No (drop box)	Type I / Type D (drop box)
30 Francs	YES / No (drop box)	Type I / Type D (drop box)
40 Francs	YES / No (drop box)	Type I / Type D (drop box)
50 Francs	YES / No (drop box)	Type I / Type D (drop box)
60 Francs	YES / No (drop box)	Type I / Type D (drop box)
70 Francs	YES / No (drop box)	Type I / Type D (drop box)
80 Francs	YES / No (drop box)	Type I / Type D (drop box)
90 Francs	YES / No (drop box)	Type I / Type D (drop box)
100 Francs	YES / No (drop box)	Type I / Type D (drop box)

Continue

**Example screen (person Y):**

If you are Person Y, you will see the following screen where you should enter your decision using the drop down menu.

Note that the shared information can increase or decrease the outcome of your lottery and therefore the chances to gain a bonus.

<b><i>If cost of sharing information is:</i></b>	<b><i>Do you wish to accept information?</i></b>
0 Francs	YES / No (drop box)
10 Francs	YES / No (drop box)
20 Francs	YES / No (drop box)
30 Francs	YES / No (drop box)
40 Francs	YES / No (drop box)
50 Francs	YES / No (drop box)
60 Francs	YES / No (drop box)
70 Francs	YES / No (drop box)
80 Francs	YES / No (drop box)
90 Francs	YES / No (drop box)
100 Francs	YES / No (drop box)

Continue

## Determining payments

Recall that you and your partner will have made 11 decisions each. There is one decision for each level of cost (0, 10, 20, 30 ... 100 Francs) to sharing information. This cost will be borne exclusively by Person X.

To determine the actual lottery, the computer will randomly choose one of the 11 values (0, 10, 20, 30, ... 100) for the cost. **Every cost is equally likely**

The computer will implement the decisions chosen by Person X and by Person Y for this level of cost. Note that you cannot change your decision once made.

The computer will draw a random numbers to determine whether Person X and / or Person Y won their lottery. Because the two lotteries are independent, the computer will make two independent draws.

We will compute the payoffs and let you know your payment.

The payoff to PERSON X will be:

50% of team winnings + bonus (if earned) – cost of sharing information (if any)

The payoff to Person Y will be

50% of team winnings + bonus (if earned).

**Recall that you will be paid in Euros, with 30 Francs = 1 Euro.**

You can collect your payment at the front desk.

Continue

## Code of Conduct and Press Article

Please read SAFECO's Code of Conduct and the Press Article about management practices in your industry using the material in your folder before you will answer some understanding questions.

Notes: The screen should be frozen for 90 seconds until the next screen is shown.

### Understanding questions

Please answer the following questions. If needed, you can refer back to the experimental materials in your folder to refresh your memory.

1. Your employer, SAFECO, relies on a strict cost management strategy.	Yes / No (drop down box)
2. SAFECO is a multi-national firm with employees from many countries.	Yes / No (drop down box)
3. UNIKORN's employees are given considerable autonomy and freedom in executing their duties.	Yes / No (drop down box)
4. Each team comprises of two people.	Yes / No (drop down box)
5. Person X has information that can change the winning amount for Person Y's lottery	Yes / No (drop down box)
6. It is free for Person X to share information with Person Y.	Yes / No (drop down box)
7. It costs Person Y some money to accept the information from Person X.	Yes / No (drop down box)
8. Type I information will increase the winning amount for Person Y's lottery by 400 Francs from 50 to 450 Francs.	Yes / No (drop down box)
9. Type D information will decrease the winning amount for Person Y's lottery by 20 Francs from 50 to 30 Francs.	Yes / No (drop down box)
10. The team total will be split as 70% to Person X and 30% to Person Y.	Yes / No (drop down box)
11. The team total will be split equally between Person X and Person Y.	Yes / No (drop down box)
12. The person winning the higher amount in the lottery gets a bonus of 400 Francs.	Yes / No (drop down box)

Please click here to continue

Please answer the following questions using the 7-point scale to indicate your extent of agreement with the statement. Indicate your choice for each question. If needed, you can refer back to the experimental materials in your folder to refresh your memory.

SAFECO's Code of Conduct encourages teamwork among its employees.	Drop down box with 7 values (strongly disagree to strongly agree)
SAFECO's management practices encourage teamwork among its employees.	Drop down box with 7 values (strongly disagree to strongly agree)
SAFECO' Code of Conduct encourages ethical decision making.	Drop down box with 7 values (strongly disagree to strongly agree)
SAFECO's management practices encourage ethical decision making.	Drop down box with 7 values (strongly disagree to strongly agree)
SAFECO's Code of Conduct promotes integrity as a prized quality.	Drop down box with 7 values (strongly disagree to strongly agree)
SAFECO's management practices encourages integrity.as a prized quality.	Drop down box with 7 values (strongly disagree to strongly agree)
SAFECO's Code of Conduct urges its employees to perform above average in what they do.	Drop down box with 7 values (strongly disagree to strongly agree)
SAFECO's management practices urge its employees to perform above average in what they do.	Drop down box with 7 values (strongly disagree to strongly agree)
SAFECO's Code of Conduct encourages its employees to be committed to the things they do ... to their work, family and community.	Drop down box with 7 values (strongly disagree to strongly agree)
SAFECO's management practices encourages its employees to be committed to the things it does they do ... to their work, family and community.	Drop down box with 7 values (strongly disagree to strongly agree)

You are now ready to move on to the actual task. Please click here to continue.

**DECISION MAKING: Role assignment**

(Note: one of the two screens will be shown)

You will have the ROLE FOR PERSON X

You now have to decide whether you will share the information with Person Y. If you choose to share, you also have to decide on the type of information to share.

Recall that your decision that you make on whether to share your information and what kind of information to share can affect both your and your partner's success in the gamble.

If you choose not to send information, there is no change in the amounts for winning the lottery.

IF you choose to send Type I information, your partner's amount for winning the lottery (and thus the variable portion of your pay) increases by 400 Francs. However, you also decrease the chance of winning the bonus of 400 Francs.

IF you choose to send Type D information, your partner's amount for winning the lottery (and thus the variable portion of your pay) decreases by 20 Francs. However, you also increase the chance of winning the bonus of 400 Francs.

<b><i>If your cost of sharing information is:</i></b>	<b><i>Do you wish to share information?</i></b>	<b><i>Type of information to share</i></b>
0 Francs	YES / No (drop box)	Type I / Type D (drop box)
10 Francs	YES / No (drop box)	Type I / Type D (drop box)
20 Francs	YES / No (drop box)	Type I / Type D (drop box)
30 Francs	YES / No (drop box)	Type I / Type D (drop box)
40 Francs	YES / No (drop box)	Type I / Type D (drop box)
50 Francs	YES / No (drop box)	Type I / Type D (drop box)
60 Francs	YES / No (drop box)	Type I / Type D (drop box)
70 Francs	YES / No (drop box)	Type I / Type D (drop box)
80 Francs	YES / No (drop box)	Type I / Type D (drop box)
90 Francs	YES / No (drop box)	Type I / Type D (drop box)
100 Francs	YES / No (drop box)	Type I / Type D (drop box)

Continue



## Role assignment

You will have the ROLE FOR PERSON Y

You now have to decide whether you wish to accept the information sent by Person X.

Person X could have sent Type I or Type D information.

If Person X choose to send Type I information AND you accept, your amount for winning the lottery (and thus the variable portion of your pay) increases by 400 Francs. Further, your chance for winning the bonus also increases.

If person X chose to send Type D information AND you accept, your amount for winning the lottery (and thus the variable portion of your pay) decreases by 30 Francs. Moreover, you also decrease the chance of winning the bonus of 400 Francs.

There is no change in the amount for winning your lottery and in the chance of winning the bonus if you reject the information.

<b><i>If cost of sharing information (to Person X) is:</i></b>	<b><i>Do you wish to accept the information sent by Person X?</i></b>
0 Francs	YES / No (drop box)
10 Francs	YES / No (drop box)
20 Francs	YES / No (drop box)
30 Francs	YES / No (drop box)
40 Francs	YES / No (drop box)
50 Francs	YES / No (drop box)
60 Francs	YES / No (drop box)
70 Francs	YES / No (drop box)
80 Francs	YES / No (drop box)
90 Francs	YES / No (drop box)
100 Francs	YES / No (drop box)

Continue.

### Integrity Score

(note: label for our use only)

Please indicate the extent to which you agree with the following statements. Note that there is no absolute correct or wrong answer to these questions. Therefore just indicate what you think best characterizes your response.

I never do things, which I consider as bad.	Drop down box with 7 values (strongly disagree to strongly agree)
It is not acceptable to lie even if it is beneficial for me.	Drop down box with 7 values (strongly disagree to strongly agree)
I would never use public transportation without a valid ticket.	Drop down box with 7 values (strongly disagree to strongly agree)
My values, goals and behavior are congruent.	Drop down box with 7 values (strongly disagree to strongly agree)
I would say that my honesty is above that of the average person.	Drop down box with 7 values (strongly disagree to strongly agree)

Continue.

### Organizational Commitment

(note: label for our use only)

Please indicate the extent to which you agree with the following statements. Note that there is no absolute correct or wrong answer to these questions. Therefore just indicate what you think best characterizes your response.

I am willing to put in a great deal of effort beyond that normally expected in order to help SAFECO to be successful.	Drop down box with 7 values (strongly disagree to strongly agree)
I find that my values and SAFECO's values are very similar.	Drop down box with 7 values (strongly disagree to strongly agree)
I feel a lot of loyalty to SAFECO.	Drop down box with 7 values (strongly disagree to strongly agree)
I consider myself an organization person.	Drop down box with 7 values (strongly disagree to strongly agree)
I would like to work for an organization as SAFECO.	Drop down box with 7 values (strongly disagree to strongly agree)

Continue.

**Competitiveness Score**

(note: label for our use only)

Please indicate the extent to which you agree with the following statements. Note that there is no absolute correct or wrong answer to these questions. Therefore just indicate what you think best characterizes your response.

I enjoy working in situations involving competition with others	Drop down box with 7 values (strongly disagree to strongly agree)
It is important to me to perform better than others on a task	Drop down box with 7 values (strongly disagree to strongly agree)
I feel that winning is important in both work and games	Drop down box with 7 values (strongly disagree to strongly agree)
It annoys me when other people perform better than I do	Drop down box with 7 values (strongly disagree to strongly agree)
I try harder when I'm in competition with other people	Drop down box with 7 values (strongly disagree to strongly agree)

Continue.
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**Altruism**

(note: label for our use only)

Please indicate the extent to which you agree with the following statements. Note that there is no absolute correct or wrong answer to these questions. Therefore just indicate what you think best characterizes your response.

I'm always willing to actively help friends even if it consumes a lot of time.	Drop down box with 7 values (strongly disagree to strongly agree)
I donate blood regularly.	Drop down box with 7 values (strongly disagree to strongly agree)
I give a substantial amount of my monthly budget to charity organizations.	Drop down box with 7 values (strongly disagree to strongly agree)
I always offer my seat to elderly people when they have to stand in a train or bus otherwise.	Drop down box with 7 values (strongly disagree to strongly agree)
I'm always willing to borrow valuable belongings even if I don't know the borrower well.	Drop down box with 7 values (strongly disagree to strongly agree)

Continue.
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### Open-ended questions

(note: label for our use only)

I enjoyed this experiment.	Drop down box with 7 values (strongly disagree to strongly agree)
The instructions to this study were clear	Drop down box with 7 values (strongly disagree to strongly agree)
I felt that the researchers misled me about the effects of my decisions	Drop down box with 7 values (strongly disagree to strongly agree)
The press article influenced my decisions in the experiment	Drop down box with 7 values (strongly disagree to strongly agree)
I think my partner is an honest person	Drop down box with 7 values (strongly disagree to strongly agree)
I agree with my SAFECO's code of conduct.	Drop down box with 7 values (strongly disagree to strongly agree)
I agree with SAFECO's management practices.	Drop down box with 7 values (strongly disagree to strongly agree)
I believe that SAFECO's code of conduct and management practices are consistent.	Drop down box with 7 values (strongly disagree to strongly agree)
The management practices of SAFECO trigger a negative emotional response in me.	Drop down box with 7 values (strongly disagree to strongly agree)

Continue.

I think I should send information.	Drop down box with 7 values (strongly disagree to strongly agree)
I think that my partner should accept my information.	Drop down box with 7 values (strongly disagree to strongly agree)
I think that my partner expected that I would share information.	Drop down box with 7 values (strongly disagree to strongly agree)
I expect that my partner has accepted my information.	Drop down box with 7 values (strongly disagree to strongly agree)
I think that my partner expected from me to send performance decreasing information	Drop down box with 7 values (strongly disagree to strongly agree)
I think I should always send beneficial information even if i don't share the values of safeco.	Drop down box with 7 values (strongly disagree to strongly agree)
I expect that my decision to share or not to share information increase my payment.	Drop down box with 7 values (strongly disagree to strongly agree)
I expect that my decision to share or not to share information increases the total payment for both partners.	Drop down box with 7 values (strongly disagree to strongly agree)
I expect that my decision to share or not to share information reduces my partners payment.	Drop down box with 7 values (strongly disagree to strongly agree)

I think I should accept information.	Drop down box with 7 values (strongly disagree to strongly agree)
I think that my partner should share information.	Drop down box with 7 values (strongly disagree to strongly agree)
I think that my partner expected that I would accept information.	Drop down box with 7 values (strongly disagree to strongly agree)
I expect that my partner has shared information.	Drop down box with 7 values (strongly disagree to strongly agree)
I expect that my partner would send performance decreasing information	Drop down box with 7 values (strongly disagree to strongly agree)
I think i should always accept information even if I don't share the values of safeco.	Drop down box with 7 values (strongly disagree to strongly agree)
I expect that my decision to accept or not to accept information increase my payment.	Drop down box with 7 values (strongly disagree to strongly agree)
I expect that my decision to accept or not to accept information increases the total payment for both partners.	Drop down box with 7 values (strongly disagree to strongly agree)
I expect that my decision to accept or not to accept information reduces my partners payment.	Drop down box with 7 values (strongly disagree to strongly agree)

Continue.

**Demographic Questions**  
(note: label for our use only)

What is your gender?	
What is your age?	
What is your major area of study?	
How many years of work experience for private / public firms do you have (include the time of your apprenticeship but not school or study times)?	

Note: After all participants had completed the task, we drew random numbers for the cost realization, and for determining the outcomes of the lotteries. We then computed payments, and paid the subjects after sharing the payment worksheet with them and collecting the signed code of conduct (if applicable).

**Part 4. Research Paper 3:**

**Consequences of Unfair Job Promotions in Organizations**

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## **Abstract**

We analyze the effect of fair and unfair job promotions on the willingness to cooperate within a group. To investigate how individuals respond to unfair (fair) job promotions, a laboratory experiment was conducted. During the experiment, the two members of each group were assigned the role of a supervisor and a subordinate. We manipulate two factors: fair and unfair promotion (procedural injustice) as well as the possibility for the subordinate to punish one's supervisor. We show that regardless of procedural justice and supported by inequity aversion as well as attribution theory, the willingness to cooperate when supervisors offer low compensation is limited. Paradoxically, supervisors who try to offset their unfair promotion even benefit from procedural unfairness. We also show that Social Value Orientation (SVO) plays a role in the supervisor's behavior but does not affect the subordinate's willingness to cooperate.

## 1. Introduction

Job promotion decisions are not only crucial for the career path of employees, but increase job satisfaction (Kosteas, 2011) and organizational performance (Delaney and Huselid, 1996). Most firms have established promotion procedures and prefer internal promotions to hiring from outside (Kwon and Milgrom, 2014). Known as the Peter Principle, firms often promote “individuals to their level of incompetence” (Acosta, 2010) indicating that procedures relying on an individual’s past performance are not always successful. With respect to job promotions, Eguchi (2004) argues that competitive relationships within organizations might suppress information exchange and collaboration of employees. As a result, employees might even sabotage or punish their opponents (Chen, 2003). Taking these aspects into account, research on the type of promotion procedures and their (perceived) fairness is very sparse.

Johnson and Salmon (2016) concentrate on the “losers” of promotion tournaments and analyze how the tournament design and the losers’ abilities affect their post tournament behavior. They find that low ability workers are discouraged by a bad tournament design (arbitrary promotion decisions or promotions based on irrelevant skills) whereas high ability workers are not affected by the tournament design. Their experiment shows that the job promotion procedure has salient consequences for the motivation of employees specifically for low ability workers. As a main result, they show that appropriate tournament designs based on relevant skills and performance are best suited to suppress counter-productive work behavior and the demotivation of employees. A similar experiment by Ku and Salmon (2012) investigates whether inequality causes a discouragement effect and leads to lower work effort. The authors found support for the existence of discouragement and argued that such an effect would exist in external situations among workers confronted with disadvantageous inequality. In the same vein, Dickinson and Villeval (2012) emphasize the importance of efficient job promotion rules. They reproduced the Peter Principle in the laboratory and compared the efficiency of a promotion standard with subjects self-selecting their task. They found that when the Peter Principle is not severe, promotion rules often dominate self-selection efficiency of task assignment.

Lemons and Jones (2001) found that justice and especially procedural justice concerning decisions about job promotions has an influence on commitment including acceptance of the goals and values of an organization as well as the willingness to exert effort for an organization. As a consequence (perceived) unfairness related to a job promotion can lead to less efficient outcomes. In this context, status seeking and inequity aversion are relevant psychological forces. A higher status provides power and power enables one to enforce one's own goals and to determine the distribution of resources. Whereas status seeking favors hierarchical relationships with unequal power distribution, inequity concerns favor a more uniform distribution of (economic) benefits and power. This relationship is potentially moderated by the contributions (performance) of an organization's member to the firm's total output i.e. a certain degree of inequality is accepted when justified by individual differences in specific investments or individual performance (output). Inequity aversion can motivate individuals to feel responsible for others with a lower status (social responsibility), particularly when the high (low) status of these individuals is earned in an unfair manner (Huberman et al., 2004; Tadic and Liebe, 2009).

As there are various factors, which have an impact on the willingness to cooperate, we concentrate on fairness within hierarchical relationships, looking in particular at the consequences of fair versus unfair job promotions. We consider both the output of a distribution (distributive fairness) and the process, which determines how the hierarchical status is established (procedural fairness). We address the question of how supervisors and subordinates react when their positions are earned fairly or unfairly and how procedural fairness has an effect on cooperation within a team. In this context, we refer to Heider's Attribution Theory (Heider, 1958) and ask whether procedural unfairness will be attributed to the system as a whole (external attribution) or to the individual who is unfairly promoted (internal attribution).

We further extend the setting by Johnson and Salmon (2016) and look specifically at unfair promotion tournaments and the opportunity to punish the tournament's winner (supervisor) for being (unfairly) promoted. To investigate how individuals respond to unfair (fair) job promotions, a laboratory experiment was conducted. During the experiment, the two members of each group were assigned the role of a supervisor and a subordinate reflecting the typical power distribution in

hierarchical relationships. We manipulated two factors: fair and unfair promotion (procedural justice) as well as the possibility for the subordinate to punish her supervisor (reciprocity). We chose the dictator game (Engel, 2011; Kahneman et al., 1986) to analyze the behavior of the subordinate and the supervisor (dictator). The dictator game is an established method to test other-regarding behavior (e.g. Bardsley, 2008; Bohnet and Frey, 1999; Bolton et al., 1998; Rousu and Baublitz, 2011). The proposer (dictator) receives a budgeted amount, which she can divide between her and the responder. The responder has no power of decision. Results show that a great part of the proposers (nearly 40%) behave in a fair (not selfish) manner and give half of the amount to the responder. The dictator game allows us to analyze the role of social norms and especially fairness in an unfair situation. In practice, the supervisor (promoted person) does not have to share the budget with her subordinate. However, in a workplace setting we can expect that sharing of information or helping the other person are relevant aspects of cooperation and might be costly for the supervisor. Such cost may be related to the invested time and money to provide information. In an additional treatment, we allow the subordinate (not promoted person) to punish her supervisor for low offers. Punishment reflects reciprocal behavior because the subordinate can react in a positive (no or low punishment) or negative way (high punishment) depending on the offer of the supervisor. In our experiment, low offers and high punishment reflect a low degree of cooperation. In real life setting the subordinate can punish her supervisor by reducing her effort resulting in lower work productivity or quality.

The treatment with the unfairly earned status measures how unfairness in job promotions influences the inequity aversion of the supervisor and the subordinate and thereby their willingness to cooperate. On the one hand, we analyze the behavior of the supervisor who has to decide whether she wants to exploit her status or compensate the unfair promotion. On the other hand, the reaction of the subordinate to the unfair job promotion can be measured by the treatment with punishment, whereby the subordinate has the option of punishing the supervisor corresponding to the compensation provided by the supervisor. The amount of punishment depends on how strong the subordinate perceives the unfairness and inequity to be and whether she attributes the unfairness to the supervisor or to the (external) promotion procedure. By additionally taking punishment by the subordinate into account we study whether unfairness leads to

greater punishment as a function of the shared compensation. With this experimental design, we are also able to observe whether the supervisor offers greater compensation when she anticipates that the subordinate attributes the unfairness to her (and opts for greater punishment). Additionally, we test how the type of social value orientation (SVO) influences compensation offers and punishment. SVO is the preference for particular distributions of outcomes for self and others.

We find that unfair promotions reduce the willingness to cooperate when supervisors took advantage of their unfairly earned status. Paradoxically however, supervisors who tried to offset their unfair promotion even benefit from procedural unfairness. Beyond that we have found that the type of SVO has a significant influence on the supervisor. Pro-social players offer greater compensation and are less likely to be harmed by punishment (destructive workplace behavior) of their subordinates.

The remainder of the paper is organized as follows. In Section 2, we present the theoretical background and develop the hypotheses. The experimental design is described in Section 3. Section 4 presents and discusses the experimental results, and Section 5 concludes.

## **2. Theory and Hypotheses**

We use the Equity Theory by Adams (1963) to explain the reactions of the subordinate and the supervisor to unfairness in the promotion process. Particularly, we consider social responsibility and status seeking on the side of the supervisor. To explain the behavior of the subordinate we lean on the reciprocity theory and the Attribution Theory. Further, we consider SVO as a relevant factor, which could influence cooperation between the supervisor and the subordinate.

## **2.1 Unfairness**

We see unfairness as a construct of unjustified inequity. Inequity exists for a person whenever her perceived job inputs and/or outcomes stand psychologically in an adverse relation to what she perceives are the inputs and/or outcomes of others (Adams, 1963). Colquitt (2001) suggest four forms of organizational justice: distributive justice, procedural justice, interpersonal justice and informational justice. We mainly concentrate on the first two aspects, because our setting does not consider interactions between individuals. Distributive justice refers to the perceived fairness of the manner in which rewards are distributed in organizations. Procedural justice refers to the perceived fairness of the procedures used in making decisions regarding the distribution of rewards. In a laboratory study Greenberg (1987) found that subjects reported that medium and high outcomes were fair regardless of the procedure used, but that low outcomes were only fair when they were based of fair procedures. Procedures that are controllable for the employees tend to be perceived fairer than procedures with low process control (Greenberg, 1990). Thibaut and Walker (1975) argue that procedures were viewed as fair when disputants possessed process control, meaning that they could voice their concerns in an effort to influence the decision outcome. When investment in effort at work is perceived as a cause for ones promotion, the employee is also expected to perceive it as fair (Gilliland, 1994). Consequentially, promotions based on perceived or reliable performance information are judged to be fair while promotions based on luck and favoritism is perceived as unfair (Tzafrir and Hareli, 2009). The perception of unfairness can even be leveraged if a promotion yields high (financial) rewards for the promoted person and therefore inequity increases substantially.

## **2.2 Equity Theory and Attribution of Unfairness**

We refer to the theory of social preferences, especially to difference or inequity aversion (see Bolton and Ockenfels, 2000; Loewenstein et al., 1989; Fehr and Schmidt, 1999) to explain the behavior of the supervisor and the subordinate as a response to the unfair promotion process. Equity Theory assumes that people prefer to minimize disparities between their own monetary payoffs and those of other people. Adams (1963) showed that individuals react to outcome allocations by comparing their ratio of outcomes to inputs to the ratios of relevant others. If

these ratios match, the individual feels a sense of equity. Employees who feel fairly treated in comparison to another person are less prone to counterproductive behavior. Vice versa, perceived unfairness might stimulate tendencies to retaliate for the unfair promotion by reducing their own effort or by negatively influencing the rewards of others (Ambrose et al., 2002; Cohen-Charash and Spector, 2001). Such counterproductive work behavior might encompass direct or indirect punishment of the supervisor.

Generally, individuals are opposed to unfair outcomes and they are willing to share payoffs to make results more equal (Fehr and Schmidt, 1999). In different experimental studies, Charness and Rabin (2002) demonstrated that individuals are motivated to increase social welfare by reducing differences in individual payoffs and increasing the payoffs of low-payoff recipients. Liebe and Tutic (2010) argue that based on the concept of noblesse oblige actors in a more favorable position act in a socially responsible way towards others in a less favorable position. Regarding promotions, high-status supervisors (dictators) are in a more favorable position than low-status actors in the role of the subordinates. For example, Liebe and Tutic (2010) found in a dictator game that the higher the status of the dictator the more she or he donates.

Further individuals are motivated by reciprocity. According to theory of reciprocity by Falk and Fischbacher (2006), a reciprocal action is modeled as the behavioral response to an action that is perceived as either kind or unkind. The authors combine difference aversion and reciprocity into a model. Such reciprocity models assume that the desire to raise or lower others' payoffs depends on how fairly those others are behaving. Houser and Xiao (2010) showed in a dictator experiment that a large percentage of receivers who receive unequally low allocations are willing to incur costs to punish the dictator. Therefore, reciprocity is not a motive itself but often results from inequity aversion.

In addition to the theories mentioned, we also consider the aspect of attribution. We analyze whether the subordinate attributes the unfairness of the promotion to the supervisor or to the system as a whole. Heider (1958) distinguishes between external and internal attribution. Internal attribution means that people attribute the behavior of another person to their personal characteristics, while in the case of external attribution, people attribute the behavior to the (exogenously determined) situation. If promotion decisions follow a defined process either

adhering to procedural justice standards or not this can lead fair promotion versus unfair promotions. It is then relevant to whom the process is attributed – the promoted person (internal attribution) or the organization as an anonymous entity (external attribution).

### **2.3 Social Value Orientation**

For the behavior of individuals in hierarchical relationships, it is also relevant to distinguish between the types of SVO. SVO is the preference for particular distributions of outcomes for self and others. Murphy et al. (2011) developed the SVO slider, which includes up to 15 items to measure the social preferences of people. The SVO Slider considers how people vary in their motivation or goals when evaluating different financial allocations between themselves and others. SVO is measured with a continuous scale and not only by categorical data. The higher the SVO angle, the more a person strives to minimize the difference between the own payoffs and the payoffs of others. Murphy et al. (2011) have suggested four types of SVO: competitive, individualistic, pro-social and altruistic. Individualistic people maximize their own payoff, while pro-socials maximize joint payoffs. Further the SVO Slider distinguishes between competitive individuals, which maximize the difference between their own and the other person's payoff and pro-social people, which minimize this difference. A variety of studies show that SVO influences cognition, motivation and behavior in negotiations (see De Dreu and Boles, 1998; Eek and Gärling, 2008; Van Lange et al., 2007). De Dreu and Boles (1998) demonstrated that pro-social individuals behave more cooperatively because they prefer fair distributions (equal split), cooperative heuristics and higher joint gains (compared to pro-self individuals). In contrast, pro-self individuals behave more competitively in the sense of "your gain is my loss".



## 2.4 Development of Hypotheses

Based on the Equity Theory and the related theory of reciprocity, we argue that unfair (fair) job promotions influence the behavior of employees in hierarchical relationships (Brandts et al., 2006). We expect that compensation payments by unfairly promoted supervisors will be higher than in the fair treatments as these supervisors attempt to offset the unfairly earned status. Liebe and Tusic (2010) stated that people with a higher status demonstrate social responsibility towards others in a less favorable position when they earned their position unfairly. Our first hypothesis is therefore:

***H1.** Compensation payments to subordinates in the unfair treatments are higher than in the fair treatments.*

Furthermore, regarding the theory of reciprocity we hypothesize that greater compensation leads to lower punishment as greater compensation reduces (perceived) inequity within hierarchical relationships. Anticipating the willingness of subordinates to punish more when compensations is low, supervisors will share more when subordinates have the opportunity to punish their supervisors. These arguments lead to the hypotheses 2 and 3:

***H2.** Higher compensation payments by supervisors lead to lower punishment by subordinates.*

***H3.** Compensation payments in the treatments with punishment are higher than in the treatments without punishment.*

We also hypothesize that punishments depend on the fairness of the promotion and the attribution of fairness. However, the theory does not provide clear guidance. On the one hand, subordinates might erroneously attribute the unfairness of the promotion to the supervisor and punish her or him more than in a situation with fair promotion procedure (internal attribution). On the other hand, the unfair promotion might be seen as exogenously given (external attribution). As a consequence, subordinates might be less willing to invest in the execution of fairness norms and might punish the supervisor even less than in the fair treatment. The supervisor can offset unfairness by providing a higher compensation to the subordinate. A high

compensation can be interpreted as distancing herself from procedural injustice (offsetting injustice), whereas low compensation can be understood as exploiting an unfair situation. In the first case (high compensation), subordinates can assume a mutual understanding within the group and attribute the unfair promotion to exogenous circumstances. The second case (low compensation) might lead the subordinate to attribute the unfair situation more to the supervisor who behaves in line with unfairness norms (non-offsetting behavior). From ultimatum games, we know that offers greater than 40 % are considered to be fair and are usually accepted (Camerer and Thaler, 1995; Roth et al., 1991). We therefore conclude that punishment for unfair promotions will be higher for low compensation ( $\leq 40$ ) and lower for high compensation ( $> 40$ ) compared to the situation of fair promotion. As a result of our discussion, we formulate two hypotheses (4a and 4b).

**H4a.** *For low levels of compensation, the punishment by subordinates is higher in the unfair treatment than in the fair treatment.*

**H4b.** *For high levels of compensation, the punishment by subordinates is lower in the unfair treatment than in the fair treatment.*

The behavior of the group member also depends on the SVO of a person. As discussed, SVO is the magnitude of concern people have for others. For a high SVO, we assume that supervisors provide higher compensation to their subordinates to offset unequal payments. Therefore, we formulate the following hypothesis:

**H5.** *Supervisors with a higher SVO provide higher compensation to their subordinates.*

As individuals with a higher SVO emphasize fairness and equality norms, they are also more willing to impose these social norms on others. Such emphasis on social norms has twofold consequences for our experimental design. First, individuals with higher SVO are willing to punish supervisors more for (perceived) unfair compensation behavior compared to individuals with lower SVO (De Cremer and Van Lange, 2001). Second, individuals with higher SVO might punish unfairly promoted supervisors less for compensation behavior that offsets the procedural injustice (which is then attributed to the external situation). Compared to individuals

with low SVO, they then reward their supervisors for complying with fairness norms and for counteracting the unfairness of the situation. Therefore, we formulate two hypotheses (H 6a and H 6b):

**H6a.** *Subordinates with a higher value of SVO punish unfairly promoted supervisors more than subordinates with a lower value of SVO when compensation payments are not perceived to offset procedural injustice (compensation levels  $\leq 40$ ).*

**H6b.** *Subordinates with a higher SVO punish unfairly promoted supervisors less than subordinates with lower values of SVO when compensation payments are perceived to offset procedural injustice (compensation levels  $>40$ ).*

### **3. Methods**

#### **3.1 Experimental Design**

To answer the proposed research questions, a laboratory experiment was conducted. The experiment was programmed in z-tree (Fischbacher, 2007). In the experiment 272 students from a major German university participated, of which 37.5% were female. We ran three sessions per treatment. In the fair treatment without punishment we had 70 participants and in the unfair treatment 64 subjects taking part in the experiment. In the treatments with the possibility of punishment, we had 68 participants in the fair and 70 participants in the unfair treatment. We chose Francs as the experimental currency and converted them to euros. The average participant was 24 years old. The subjects received an average pay of 7.53 € (about \$ 8.43) on average, with a standard deviation of 3.33. Irrespective of the experiment's outcome they received a show-up-fee of 25 Francs (2.50 €).

A 2x2 factorial design was chosen, with the factors: type of promotion (fair vs. unfair) and possibility of punishing the supervisor (yes vs. no). The subjects were randomly assigned to one of the four treatments. The relevant dependent variables are the compensation payment of the supervisor to her subordinate and the punishment of the supervisor by her subordinate. The second variable was compiled only in the two treatments involving punishment. The strategy method was used to record the potential punishment for all possible levels of compensation (0

to 100, in steps of 10). The strategy method is an established way to collect conditional decisions for each possible information set (Brandts and Charness, 2011; Selten, 1967)

The experiment consists of four parts: introduction to the experiment, a real-effort task, a decision task and a questionnaire at the end (for experimental instructions see Appendix 4.A.). After the introduction, all participants were assigned to teams of two members and asked to perform basic mathematical calculations (addition, subtraction, multiplication and division). During a time period of seven minutes they were competing against the other team member with the objective to solve more calculations correctly (similar to Ekstrom et al., 1976). The performance of the calculation task depends on the mathematical skills of the subjects and simulates a promotion tournament. Depending on the calculation type, the subjects gained a different number of points for each problem. The roles of the participants in the decision task within their team depended on their performance in the real-effort task, which enabled us to vary the procedural justice in two ways. In the fair promotion treatments (procedural justice), the group member with a higher performance in the real-effort task was promoted to be the supervisor in the next round of the experiment. In the unfair promotion treatments (procedural injustice), we reversed the situation, i.e. the group member with the lower individual performance was promoted. High performance within the team led to the role of the subordinate, which is associated with less status (power). In all treatments, we used framing to emphasize the status difference between the roles. Additionally, the participants received information about the performance of their partner, enabling them to perceive the fairness (unfairness) of the promotion decision. The participants were informed that, based on their performance, they would be promoted to the role of the subordinate or the supervisor.<sup>1</sup> This experimentally design was chosen to trigger the expectation that the high performer would be promoted. However, we did not tell whether a high or a low performance would lead to the promotion. Hence, the promotion procedure was not transparent to the subjects, because they were not informed about the relevant promotion criteria.

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<sup>1</sup> There were no cases where subjects had the same math test score.

In the decision task, the subjects participated in a modified dictator game. Similarly, Schurter and Wilson (2009) used a dictator game and found that justice and fairness are distinct concepts in a dictator game and justice legitimizes property rights in such a game. Each member of a team received 30 Francs. Additionally, the supervisor was given 100 Francs and was asked to divide these 100 Francs between oneself and one's partner. Each point had a value of 0.10 €, in total 10 € (approximately \$ 11.40). In the treatments without punishment, the subordinates did not had to make a decision in the second round. In the treatments with punishment, the subordinate was allowed to punish the supervisor. For each possible compensation level provided by the supervisor (0,10,20...100), the subordinate had to specify an amount by which the payment of the supervisor should be reduced. Punishment was associated with costs for the subordinate with a cost factor of 25% (0.25 Francs quarter per withdrawn Francs from the supervisor). The maximal punishment depended on the amount the supervisors had at their disposal. The punishment plus the costs of punishment reduced the team's total payment. Only after the subordinates had given punishment for all possible compensation levels, were both members of each team told about the actual decisions and paid accordingly at the end of the experiment.

The experiment concluded with a questionnaire, consisting of questions about SVO, fairness preferences, perceived fairness, altruism, competitiveness and demographic data. SVO was measured using the SVO slider method proposed by Murphy et al. (2011).

### 3.2 Analysis Methodology

We used a linear regression model with 136 observations to analyze the behavior of the supervisor. The dependent variable is the amount of compensation provided to the subordinates. The independent variables are unfairness regarding the promotion (fair = 0, unfair = 1), punishment (no punishment = 0, punishment = 1) and SVO by the SVO angle<sup>2</sup>. In this respect, the baseline is the treatment with fair promotion and without punishment. In addition we tested the interaction effect between unfair promotion and the possibility of punishing.

To analyze the behavior of the subordinates we employed a Linear Generalized Estimating Equation (GEE model) with 756 observations.<sup>3</sup> Since we elicited decisions for 11 offer values (for each period) for every subordinate, we allowed for an AR (1) process in the response sequence. The dependent variable is the amount of punishment for every level of offer. Our main explanatory variables include unfair promotion (fair=0, unfair=1), the amount of compensation and the SVO angle. According to our hypotheses, we split the GEE Analysis into two areas: compensation equal to or smaller than 40 Francs and above 40 Francs.

We ran a manipulation check using a t-test to evaluate the questionnaire, testing whether the participants of the experiment perceived fairness (unfairness) in the respective treatments. We only report significant results. Questions were answered using a Likert Scale (1 (low acceptance) to 7 (high acceptance)).

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<sup>2</sup> The mean allocation for oneself is computed, as is the mean allocation for the other person. Then 50 is subtracted from each of these means in order to “shift” the base of the resulting angle to the center of the circle (50, 50) rather than having its base start at the Cartesian origin. Finally, the inverse tangent of the ratio between these means is computed, resulting in a single index of a person’s SVO. If a person chooses the option on the circle that maximizes one’s own outcome, this would refer to an SVO angle of 0, indicating a perfectly individualistic SVO. An angle of 45 would indicate a perfectly cooperative (maximizing joint outcomes) SVO, while an angle of -45 would refer to a perfectly competitive (maximizing relative gain) SVO.

<sup>3</sup> 69 groups (69 supervisors for the treatments with punishment) multiplied by 11 levels of compensation (0, 10, 20, ... 100).

## 4. Results and Discussion

### 4.1 Manipulation and Ability Check

The manipulation check demonstrates that the perceived fairness is much higher in the fair treatment for the subordinate (4.41 vs. 2.06,  $p < 0.0001$ ) and the supervisor (5.17 vs. 4.28,  $p = 0.002$ ). In the unfair treatment, participants do not think that the result in the experiment reflects their effort in the task (4.55 vs. 3.90,  $p = 0.002$ ). In summary, the participants observe the unfairness in the unfair treatment and take it into account when making their decisions.

We also controlled for the mathematical abilities of the participants in the math test. Table 4.1 presents the mean points of subordinates and supervisors by treatment. The results imply that there is a notable performance difference for subordinates and supervisors in each treatment. However, the observed differences in points between subordinate and supervisor for all treatments were similar and ranged between 67.53 and 78.37 points. As the difference in mathematical abilities between the partners can influence the degree of perceived fairness (unfairness), we ran additional analyses controlling for the difference in points.

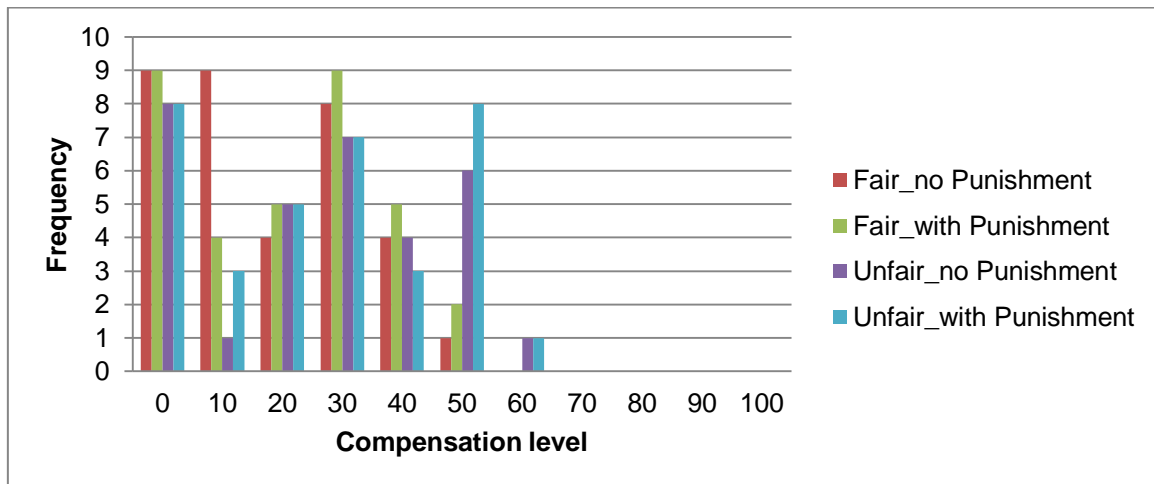
**Table 4.1: Mean Points in Math Task**

<b>Treatment</b>	<b>Subordinate</b>	<b>Supervisor</b>
Fair_no Punishment	121.45	198.34
Unfair_no Punishment	202.31	134.78
Fair_with Punishment	133.03	203.85
Unfair_with Punishment	197.17	118.80

### 4.2 Amount of Compensation by Supervisors

First, we analyzed the behavior of the supervisor. The frequency of chosen compensation amounts of the subordinates by treatment (see Figure 4.1) indicates that supervisors prefer to share an amount between 0-50. Only very few supervisors

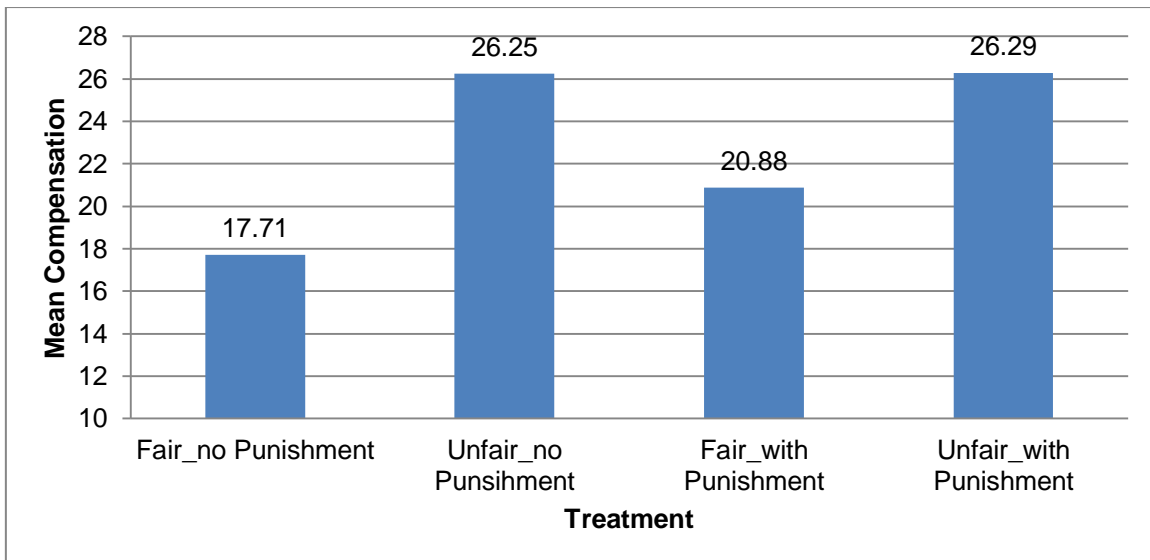
shared amounts higher than 50. We also find that compensations higher or equal than 50 are chosen more frequently in the unfair treatments.



**Figure 4.1: Frequency of Compensation Levels**

The mean compensation for all four treatments is presented in Figure 4.2. As indicated by the descriptive results, regression analysis (see Table 4.2) shows that the compensation is significantly influenced by two main factors: unfair promotion and SVO. Testing H1, compensation is significantly higher in the unfair treatments ( $p = 0.042$ ). Two factors could explain this result. First, as supervisors feel entitled to a higher reward for their higher performance in the fair treatments, they show fewer actions regarding others (Cherry et al., 2002). Second, the supervisors in the unfair treatment are willing to give a certain amount to their respective partners to offset inequity. This result corresponds to the social welfare preferences described by Charness and Rabin (2002), which predict that individuals use their (unfairly earned) position to help others.





**Figure 4.2: Mean Compensation**

Testing H3, we found that the mean compensations for the unfair treatments with and without punishment are nearly equal. Punishment has no significant influence on compensation offers ( $p = 0.948$ ). One explanation could be that the supervisors attribute the unfair promotion to the system (external attribution) and also expect the subordinates to do the same. Consequently, they see no threat of being punished. Another explanation could be that supervisors are motivated under their own terms to compensate the unfairness from the unfair promotion process and therefore offer higher compensation irrespective of punishment. In conclusion, H3 is not supported. H5 is strongly supported ( $p < 0.0001$ ). Supervisors with higher SVO provide higher compensation to their subordinates. As stated in the theory section, this allows them to offset unfairness (unequal payments) and to show their concern for others.

**Table 4.2: Linear Regression Analysis: Compensation Payments**

	Hypothesis (predicted sign)	Coefficient (p – value, two-sided)
Intercept		7.0642 (0.037)**
Unfair	H1 (+)	5.7297 (0.042)**
Punishment	H3 (+)	0.1818 (0.948)
SVO angle	H5 (+)	0.5309 (0.000)***

Number of Observations = 136

R-squared = 0.1852

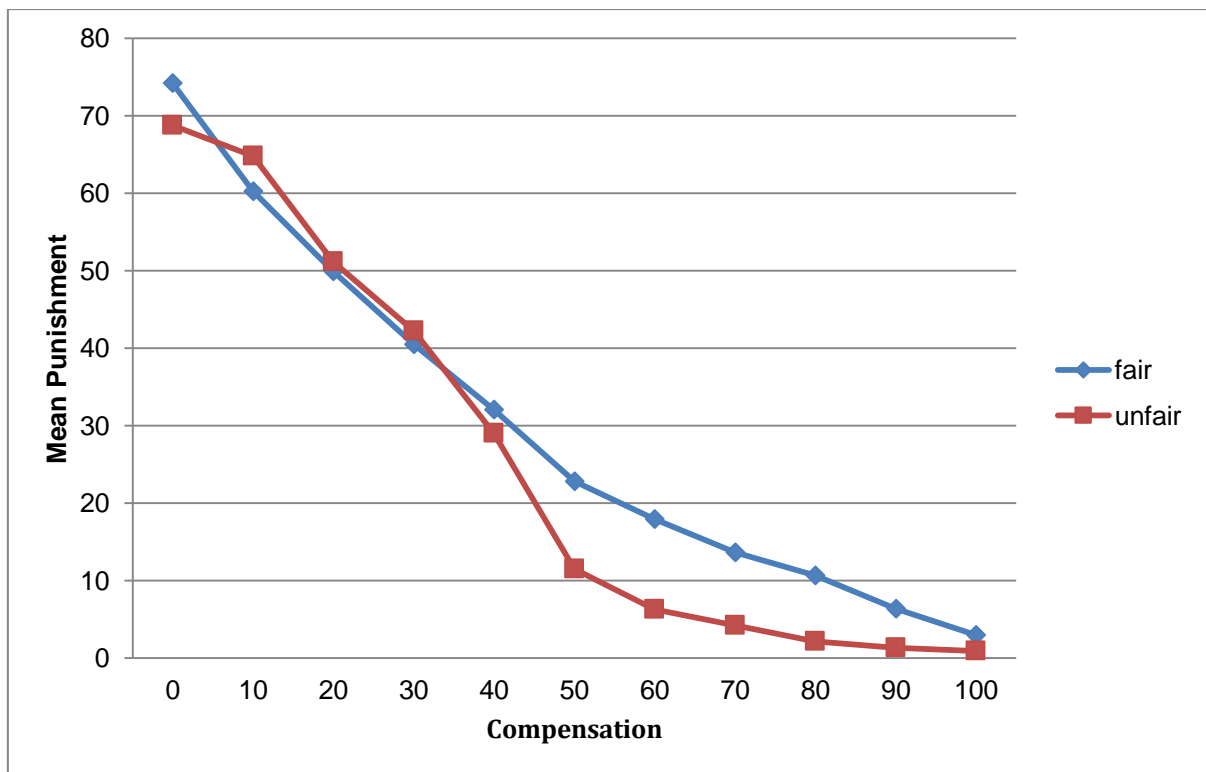
Adjusted R-squared = 0.1667

\*0.05 ≤ p < 0.1, \*\*0.01 ≤ p < 0.05, \*\*\* p < 0.01

We also tested whether the results are driven by the variation of performance in the math test by considering “points” as a variable in the regression analysis. We found that performance does not have a significant influence on the compensation amount of the supervisor. Thus, the observed treatment effects are not due to differences in cognitive ability or a feeling of achievement. Furthermore, we considered the difference in points between the supervisor and the subordinate because subjects who performed similarly on the math test might view the fair and unfair treatment as comparably fair and the notion of fairness (unfairness) becomes more pronounced with increasing differences. However, the statistical analysis indicates that the difference in points does not significantly influence compensation by the supervisor in both the fair and the unfair treatment.

### 4.3 Punishment by Subordinates

We now analyze the behavior of the subordinates. Figure 4.3 shows the mean punishment by the subordinates in the fair and unfair treatment with punishment. Two points are noteworthy. First, as expected in H2, the average degree of punishment decreases with the amount of compensation (see Table 4.3). The significant negative correlation between punishment and compensation amount confirms that subjects are generally consistent with these punishment preferences (corr. = - 0.2489,  $p = 0.0032$ ). Second, the punishment is higher in the fair compared to the unfair treatment for compensation levels above 40. This result corresponds with our hypothesis that a fair compensation in the unfair treatment is more often attributed to the supervisor.



**Figure 4.3: Mean Punishment for All Given Levels of Compensation**

In line with the descriptive results depicted in Figure 4.3, our regression analysis in Table 4.3 strongly supports H2 for all levels of compensation ( $p < 0.0001$ ). Supported by reciprocity theory, this finding indicates a lower propensity to punish the behavior of the supervisor with increasing compensation of the subordinate. Although we do not find any statistical support for H4a ( $p = 0.737$ ), the analysis in

Table 4.3 illustrates that for compensation above 40 Francs, the punishment in the unfair treatment is significantly lower than in the fair treatment ( $p = 0.030$ ). This finding is concordant with our H4b. The results show that the unfair promotion is not attributed to the supervisor (external attribution). As a consequence, subordinates are willing to invest in implementing fairness norms and punish the supervisor in a situation of procedural injustice much less than in the fair treatment, even rewarding the supervisors who try to offset procedural injustice. Although this can be explained by reciprocity theory, it leads to the paradox situation that an unfairly promoted supervisor can even profit from procedural injustice if willing to offset unfairness.

Again, we tested whether the results are driven by the variation of performance in the math test by considering “points” as a variable in the regression analysis and did not find a significant effect of performance on the chosen punishment by the subordinate. Hence, the observed treatment effects are not due to differences in cognitive ability or a feeling of achievement. We also found that the difference in points between the supervisor and the subordinate does not significantly influence the willingness of the subordinates to punish their supervisors.

**Table 4.3: GEE Estimation: Punishment**

	Hypothesis (predicted sign)	Coefficient (p – value, two-sided)
<b>All compensation levels</b>		
N = 756		
Intercept		70.982 (0.000)***
Compensation	H2 (-)	-0.6984 (0.000)***
Unfair		-4.0084 (0.435)
SVO angle		-0.0748 (0.709)
<b>Compensation levels ≤ 40</b>		
N = 342		
Intercept		77.2765 (0.000)***
Compensation	H2 (-)	-1.0219 (0.000)***
Unfair	H4a (+)	-2.7795 (0.737)
SVO angle		-0.1771 (0.584)
<b>Compensation levels &gt; 40</b>		
N = 414		
Intercept		38.8195 (0.000)***
Compensation	H2 (-)	-0.3030 (0.000)***
Unfair	H4b (-)	-6.5425 (0.030)*
SVO angle		-0.1458 (0.218)

\*0.05 ≤ p < 0.1, \*\*0.01 ≤ p < 0.05, \*\*\* p < 0.01

#### 4.4 Influence of Social Value Orientation

As discussed, the behavior of the participants significantly depends on their SVO. As hypothesized, supervisors with a higher value of SVO offer significantly higher compensation (see Table 4.2). However, the regression analysis reported in Table 4.4 does not confirm our hypotheses 6a and 6b stating that subordinates with a high SVO reciprocate more than more self-oriented individuals. This leads to the conclusion that our experiments provide evidence that social preferences are more relevant for the role of the “disposer”, because the recipient only behaves reciprocally to the decision of the disposer. From the subordinate’s perspective, we do not find support for the hypothesis that higher SVO necessarily leads to a strengthening of social norms.

**Table 4.4: GEE Estimation: Punishment with SVO and Unfair**

Punishment	Hypothesis (predicted sign)	Coefficient (p – value, two-sided)
<b>Compensation levels ≤ 40</b>		
N = 342		
Intercept		71.8907 (0.000)***
Compensation	H2 (-)	-1.0217 (0.000)***
Unfair	H4a (+)	10.2049 (0.577)
SVO angle		0.0566 (0.897)
SVO * Unfair	H6b (+)	-0.5177 (0.426)
<b>Compensation levels &gt; 40</b>		
N = 414		
Intercept		40.1134 (0.000)***
Compensation	H2 (-)	-0.3030 (0.000)*
Unfair	H4b (-)	-9.6668 (0.148)
SVO angle		-0.2019 (0.205)
SVO * Unfair	H6a (-)	0.1243 (0.600)

\*0.05 ≤ p < 0.1, \*\*0.01 ≤ p < 0.05, \*\*\* p < 0.01

## 5. Conclusions

In this study, we tested the effect of fair and unfair promotions on the willingness to share a given budget by the supervisor in a modified dictator game. Additionally, the punishment behavior of the subordinates was investigated. According to the theory of inequity aversion, the mean compensation by the supervisors was higher in the unfair treatments and the punishment was higher for lower compensation. We found two surprising results: First, punishment has nearly no effect on the amount of compensation by the supervisor. Second, punishment is higher in the fair treatment than in the unfair treatment for high compensation levels. Because of these results we conclude that acting fair in an unfair situation has a positive influence on cooperation. We argue that the subordinate does not attribute the unfairness of the promotion (procedural injustice) to the supervisor but separately evaluates the compensation from the supervisor. Paradoxically, the supervisor benefits from procedural injustice as it provides an opportunity to correct perceived unfairness.

The fact that supervisors choose a higher compensation in the unfair treatments independently from the opportunity of punishment by the subordinate indicates that supervisors are intrinsically motivated to compensate any procedural injustice. Inequity aversion helps to explain the (reciprocal) behavior of players in an unfair situation. We also found that SVO of the participants has a strong impact on the readiness to share, resulting in substantially higher compensation by more pro-social supervisors.

In summary, our experiment demonstrates that social norms become particularly important in unfair situations. In the case of unfair promotion, supervisors can offset procedural injustice by establishing fair social norms with positive consequences for coordinating their teams. The subordinate then will not attribute the unfairness of the promotion to the supervisor. As a consequence for practice, this means that supervisors will be more under observation when they are promoted unfairly or when subordinates perceive unfairness.

Lemons and Jones (2001) also highlighted the importance of justice in promotion decisions. They showed that perceived fairness plays an important role, especially in procedural justice. Not only the output of a decision is important but also the decision-making procedures. Perceived unfairness can lead to less

organizational commitment manifesting in a lower acceptance of goals and values and a lower willingness to exert effort. Moreover, perceived unfairness (e.g. unfair sharing of compensation) can lead to less willingness to cooperate and can increase active or passive sabotage as well as misconduct (Balakrishnan and Letmathe, 2017; Harbring and Irlenbusch, 2011).

Our study has some limitations: First of all, we conducted an experiment that established the role of a supervisor based on a math task. In reality, promotion decisions are based on a variety of criteria (including management skills). However, we believe that perceived unfairness is likely to yield similar results even in a multi-criteria setting. Second the compensation and sharing decisions were based on the independent behavior of both team members. We are aware that repeated interaction processes might question our results and that this therefore requires future research. Third, the nature of the decision-making task is based on the sharing of a given budget, not on real efforts of the supervisor and subordinate. We believe that a modified experimental setting can help to clarify this open question.

Furthermore, it is worth analyzing whether the results of our experiment apply to other settings of unfairness. It is also interesting to analyze how unfairness influences the relationships between subordinates and supervisors in the long run.



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## Appendix

### Appendix 4.A. Experimental Instructions

Note:

Red Information: Information for the treatment with punishment

Green information: Information for the fair promotion treatment

#### Procedure

The experiment is divided into three parts: one exercise, one decision situation as well as a questionnaire at the end of the experiment.

During the experiment you are going to form a team with another person in this room. Neither you nor the other person will know who the other person is.

You will work in a company where you will have the role of the subordinate or the supervisor. To become the supervisor or subordinate you will have to solve some mathematical problems.

After solving these problems, you will get the position of the supervisor or the subordinate depending on your results in the task. One supervisor and one subordinate build a team.

The supervisor receives a bonus, which he/she can split between him/her and the subordinate.

Continue

### Your Task

The experiment starts with a mathematical task. You will have to solve as many mathematical problems within the given time of seven minutes. One task always includes one of the basic mathematical operations. You do not need other calculation rules such as point before line calculation or parentheses. Only integer numbers can be correct solutions.

On the screen you will see four areas each with five problems. They will be displayed as follows:

$$19 \times 8 = \boxed{\phantom{000}}$$

Enter your result in the box without using decimal points. You do not need to solve the problems in the given order. You can also skip questions. You only get points for entering the correct result. For entering nothing or the wrong result you will not lose any points. You are allowed to use the given materials on your desk.

For solving a problem correctly, you get points depending on the calculation type:

Addition	1 point
Subtraction	2 points
Multiplication	3 points
Division	4 points

Continue

### Your Task (Continuation)

Once you have answered all the mathematical problems on the screen or cannot answer them anymore, press on the button "Continue". You then get the next task. With the button "Back" you can get back to the previous screen.

Down to the right you can see your remaining time in seconds. Once the time is over there will be a message displayed and you are not able to work on the mathematical task anymore. To finish you press the button "Finish task" to continue with the experiment. It is not important in which order you work on the problems. All problem sheets are valued equally. It is not possible to solve all the mathematical problems in the given time. Solve as many problems as you are able to within 7 minutes.

Whether you will be subordinate or supervisor depends on your effort in the task.

Continue

### **Your Decision**

Initially, both players receive independent from their role assignment a budget of 30 Franc.

If you are the supervisor, you receive an extra bonus of 100 Franc. You can share any amount of your bonus (in 10 Franc-steps) with your subordinate.

As the subordinate you have the possibility to punish your supervisor for his/her compensation by taking away an amount of his/her budget. Keep in mind that you have to pay costs of 0.25 Franc per Franc removed from your supervisor. The removed money from your supervisor is lost and nobody receives it. You can only take as much money as the supervisor has at his / her disposal.

At the end of the experiment your payment will be translated into Euro. 10 Franc equals one Euro.

Independent of the experiment's outcome you will receive a show-up-fee of 25 Franc.

Continue

### **Comprehension Questions**

Please answer the following comprehension questions!

Continue

1. Your job promotion depends on your effort.	Yes/No
2. The punishment of your supervisor does not cause costs.	Yes/No
3. The acceptance of the supervisor 's compensationl causes costs.	Yes/No
4. The subordinate is not able to influence the amount of the supervisor's compensation.	Yes/No
5. For each solved task you receive a different number of points depending on the calculation type.	Yes/No
6. For each missing or wrong answer in the mathematical task you will lose a point.	Yes/No
7. The subordinate is allowed to keep the money he/she removes from his/her supervisor.	Yes/No
8. One supervisor works together with two subordinates.	Yes/No
9. You have seven minutes to solve the mathematical problems.	Yes/No
10. The mathematical problems include the four basic mathematical operations and their combination.	Yes/No

Continue



**Rechenaufgaben**  
**Mathematical problems**

Continue

This is an example for the mathematical task and it is repeated five more times with different mathematical questions.

Periode

1 von 1

$236 + 699 =$	<input type="text"/>	$80 : 8 =$	<input type="text"/>
$389 - 611 =$	<input type="text"/>	$815 - 325 =$	<input type="text"/>
$93 * 2 =$	<input type="text"/>	$460 - 793 =$	<input type="text"/>
$21 * 8 =$	<input type="text"/>	$485 - 709 =$	<input type="text"/>
$16 : 4 =$	<input type="text"/>	$43 * 3 =$	<input type="text"/>
$28 : 7 =$	<input type="text"/>	$4 * 4 =$	<input type="text"/>
$38 * 5 =$	<input type="text"/>	$604 - 251 =$	<input type="text"/>
$70 : 7 =$	<input type="text"/>	$49 : 7 =$	<input type="text"/>
$72 : 8 =$	<input type="text"/>	$705 + 912 =$	<input type="text"/>
$843 + 378 =$	<input type="text"/>	$407 + 665 =$	<input type="text"/>

Remaining time <sup>412</sup>

Back

Continue

### Your role in the experiment (Supervisor)

You have scored 0 points, your partner have scored 3 points.

You solved the mathematical problems worse than your partner, nevertheless the company chose you to be the supervisor.

Fair promotion treatment: You have scored 3 points, your partner have scored 0 points.

You solved the mathematical problems better than your partner, therefore the company chose you to be the supervisor.

You receive a bonus of 100 Franc. You can share a chosen amount of your bonus (in 10 Franc-steps) to your subordinate. In return the subordinate have the opportunity to punish you for your compensation by removing a chosen amount of your budget.

Please enter the amount you want to share with your subordinate in the following screen.

Continue

### Your role in the experiment (Subordinate)

You have scored 3 points, your partner have scored 0 points.

You solved the mathematical problems better than your partner, nevertheless the company choose you to be the subordinate.

Fair promotion treatment: You have scored 0 points, your partner have scored 3 points.

You solved the mathematical problems worse than your partner, therefore the company choose you to be the subordinate.

Your supervisor receives a bonus of 100 Franc. He/She can choose an amount of his/her budget he/she will share with you.

You will now decide which amount you will remove from your supervisor. Make your decision for any possible amount of compensation by your supervisor. You will be informed about the real amount of compensation by your supervisor afterwards. Your following decisions will be combined with this compensation in order to calculate the payment on both sides. The input mask will help you with calculating the costs.

Continue

### Your Compensation (Supervisor)

How many Francs do you want to share with your subordinate?

- 0
- 10
- 20
- 30
- 40
- 50
- 60
- 70
- 80
- 90
- 100

Continue

The following information was provided to the subordinate only in the treatment with punishment

#### Your punishment

Now you have the possibility to punish. Please enter for each sharing decision your punishment. Keep in mind that this will cause costs for you.

Afterwards, press "Check". Then you will see the results based on your decision.

If you want to continue, press "Next Stage". Until then you can change your input

Next Stage

Transfer	Punishment	Supervisor budget after punishment	Costs	Maximum punishment
0		0.00	0.00	120
10		0.00	0.00	120
20		0.00	0.00	110
30		0.00	0.00	100
40		0.00	0.00	90
50		0.00	0.00	80
60		0.00	0.00	70
70		0.00	0.00	60
80		0.00	0.00	50
90		0.00	0.00	40
100		0.00	0.00	30

Check

### Hypothetical decisions

Please make the following hypothetical decisions independent on the other participants' choices.

You have to decide between different distributions of money for you and another person.

Your input has no influence on your previous decisions and on your payment.

Afterwards, you have to answer a questionnaire and you will get to know your payment.

OK

Based on the SVO slider the distribution preferences were asked for 15 different cases of distribution.

Please enter the distribution you prefer for the following situation.

You receive	85	85	85	85	85	85	85	85
Someone else receives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	85	76	68	59	50	41	33	24

OK

## Questionnaire

**Seat number**

Continue

Please indicate the extent to which you agree with the following statements. There are no wrong or right answers. Therefore, please indicate what you think best characterizes your response.

	<b>Strong disagreement</b>					<b>Strong agreement</b>	
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
I enjoy working in situations involving competition with others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is important to me to perform better than others on a task.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that winning is important in both work and games.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It annoys me when other people perform better than I do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I try harder when I'm in competition with other people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

OK

Please indicate the extent to which you agree with the following statements. There are no wrong or right answers. Therefore, please indicate what you think best characterizes your response.

	<b>Strong disagreement</b>						<b>Strong agreement</b>	
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	
I'm always willing to actively help friends even if it takes a lot of time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I donate blood regularly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I give a substantial amount of my monthly budget to charity organizations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I always offer my seat to elderly people when they have to stand in a train or bus otherwise.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm always willing to borrow valuable belongings even if I don't know the borrower well.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

OK

Please indicate the extent to which you agree with the following statements. There are no wrong or right answers. Therefore, please indicate what you think best characterizes your response.

	<b>Strong disagreement</b>					<b>Strong agreement</b>	
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
I had a strong influence on the experiment's results.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
During the experiment ethical and moral standard were met.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I put a lot of effort in solving the mathematical tasks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The results reflect the effort I put into the task.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The ethical frame of the experiment was in accordance with my moral values.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

OK



Please indicate the extent to which you agree with the following statements. There are no wrong or right answers. Therefore, please indicate what you think best characterizes your response.

	Strong disagreement						Strong agreement	
	1	2	3	4	5	6	7	
I expected the subordinate to punish me when I choose a low compensation..	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which punishment did you expect for your compensation? State the amount in Franc.	<input type="text"/>							
I would have liked to have the role of the subordinate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoyed being the supervisor.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think it was fair that I was chosen to be the supervisor.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt that the subordinate treated me fairly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The result of the role assignment motivated me to cooperate with the subordinate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am satisfied with my decision concerning the compensation offered to the subordinate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate the extent to which you agree with the following statements. There are no wrong or right answers. Therefore, please indicate what you think best characterizes your response.

	Strong disagreement				Strong agreement		
	1	2	3	4	5	6	7
I enjoyed being the subordinate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think it was fair that I was chosen to be the subordinate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would have liked to be the supervisor.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The result of the role assignment motivated me to cooperate with my supervisor.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am satisfied with my decision concerning the supervisor's punishment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which criteria have you applied when you decided to punish your supervisor?	<input type="text"/>						
Which considerations were crucial when determining the amount of your punishment?	<input type="text"/>						

OK

Please indicate the extent to which you agree with the following statements. There are no wrong or right answers. Therefore, please indicate what you think best characterizes your response.

	<b>Strong disagreement</b>					<b>Strong agreement</b>	
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
Justice means to me that everyone gets an equal share.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Justice means to me that everyone is being rewarded proportional to his/her efforts.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am not comfortable with getting more than others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am not comfortable with getting less than others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is important to me what others think about me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

OK

Please indicate the extent to which you agree with the following statements. There are no wrong or right answers. Therefore, please indicate what you think best characterizes your response.

	<b>Strong disagreement</b>					<b>Strong agreement</b>	
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
I enjoyed participating in this experiment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I understood the instructions concerning the experiment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have the feeling that the staff present during the experiment tried to manipulate my decisions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

OK

What is your gender?

male  
female

What is your age?

What is your major area of study?

How many years of work experience for private / public firms do you have  
(including the time of your apprenticeship but not school or study times)?

OK

### Payment (Subordinate)

You receive 60 Franc. Your punishment was 0 Franc for the offered compensation. The costs for your punishment were 0 Franc. Including your show up-fee of 25 Franc and the budget of 30 Franc you receive 115 Franc. This results in 11.50 Euro.

Leave experiment

### Payment (Supervisor)

Your offered compensation to your subordinate was 60 Franc. The punishment by your subordinate was 0 Franc for this offer. Including your show up-fee of 25 Franc and the budget of 30 Franc you receive 95 Franc. This results in 9.50 Euro.

Leave experiment

**Part 5. Research Paper 4:**

**The Role of Individual Traits and Emotional Responses in (Unfair)  
Promotion Decisions – Results of a Real Effort Experiment**

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## **Abstract**

Promotion decisions are very relevant within organizations for rewarding the past performance of employees and for ensuring that the organization runs smoothly in the future. Promotions not only signal that the capabilities of a person have been recognized, but they are also psychologically important to individuals. If promotion decisions are perceived to be unfair, they can result in low work quality and even in sabotage. In a real effort experiment, which predicts that (perceived) unfairness can result in destructive behavior, we analyzed the consequences of fair (unfair) job promotion procedures on motivation. Concentrating on the behavior of the subordinate who is affected by a fair or unfair promotion tournament, we found that unfairness does not necessarily foster counterproductive work behavior (CWB). Rather, CWB depends on several other factors, namely social value orientation (SVO), envy, and negative emotions. While negative emotions, such as anger, lead to higher sabotage tendencies (although this does not apply to prosocials) envy results in higher performance.

## 1. Introduction

Job promotions are associated with a higher status within an organization, more responsibilities, and new fields of activity. Promotion tournaments are used as a tool to motivate employees and to stimulate a higher quality of work (Prendergast, 1999; Bidwell, 2011). Promotion opportunities can create a competitive environment and influence the expectations of employees in terms of their future career paths. This can lead to positive but also negative effects on work behavior. Promotions signal the recognition of a person's capabilities and therefore have a high psychological importance for individuals (Schaubroeck and Lam, 2004). There has been limited research addressing the role of fairness in the context of promotion, especially the influence on CWB following the promotion decision. The majority of research on fairness and personnel allocation has been conducted in the area of entry-level selection, where individuals are recruited from outside of the organization (Anderson et al., 2001; Bauer et al., 2001; Ispas et al., 2010; Moscoso and Salgado, 2004). Promotion as a form of personnel selection bears important differences when compared with other types of employee selection processes such as entry-level selection, since the loser of a promotion tournament usually remains within the organization and can have a direct influence on organizational performance and cooperation with other co-workers (Ambrose and Cropanzano, 2003; Truxillo and Bauer, 1999; Truxillo et al., 2004).

Fairness in the promotion process influences commitment and trust within an organization (Cohen-Charash and Spector, 2001). Conversely, the perception of unfairness can decrease motivation and job satisfaction (Colquitt et al., 2001), as injustice has been found to be one of the main factors causing workplace sabotage (Ambrose et al., 2002). Adams (1963), who introduced the Equity Theory, found that employees are more motivated if they feel that they have been treated fairly compared to others. As a consequence of unfairness, individuals have been known to exert CWB by reducing their work input (effort) or by negatively influencing the output of others.

Thibaut and Walker (1975) demonstrated that fair procedures increase an individuals' satisfaction with unfavorable outcomes. This has come to be known as the "fair process effect" (Folger, 1977; Tyler and Caine, 1981; Walker et al., 1974). Evidence of the "fair process effect" has also been found in laboratory experiments

(Folger et al., 1979, 1983; Greenberg, 1987, 1993; Lind et al., 1980, 1990; van den Bos et al., 1997). Lemons and Jones (2001) showed that justice (especially procedural justice) in job promotion decisions has an influence on organizational commitment, which includes the acceptance of the goals and values of organizations as well as the willingness to make a greater effort for the benefit of the organization. Johnson and Salmon (2016) tested post-promotion tournament behavior in a laboratory setting. They looked at how behavior after a promotion tournament was affected by the outcome of the tournament. They made a distinction between sabotage and discouragement and tested for the ability of workers (high and low ability). Promotion mechanisms involved four manipulations: (1) a tournament scheme in which individuals were promoted according to their ability in a task that was relevant to the production task; (2) a scheme where promotion was based on criteria irrespective of the required ability in the production task; (3) a mechanism that enabled workers to opt for different kinds of tournament schemes themselves; (4) and a random assignment mechanism. On the whole, Johnson and Salmon (2016) found that if the promotion criterion involved skills that were irrelevant for the promotion task, low-skilled workers who were not promoted to the supervisor level, decreased their work effort to a greater degree than when the promotion criterion was relevant to the promotion task or when the subjects in the experiment were randomly promoted.

Emotional responses and individual traits could also have an influence on the involvement in CWB (Spector, 2011). Negative emotional responses from losing a promotion tournament may lead to a decrease in work effort, because employees intentionally sabotage their new supervisors or because they are demoralized and refrain from exerting more effort. However, negative feelings can sometimes also increase the level of energy shown by a person and might consequently result in a higher performance (Spector and Fox, 2002). With regard to the existing literature, we find that individual factors and emotional responses are still areas that have been given little research attention to explain CWB in organizations, specifically when we focus on job promotion procedures. In a real effort experiment, we investigated the individual traits such as Social Value Orientation (SVO) and emotional responses such as envy or anger that drive employee reactions to fair (unfair) promotion decisions. We concentrated on the behavior of the subordinate

as the person who lost the promotion tournament and is therefore most likely to act counterproductively or even try to harm the supervisor. During our real effort experiment, the members of a dyad were either assigned to the role of a supervisor or that of a subordinate. We manipulated two factors: fair versus unfair promotion (procedural justice) as well as the possibility of the subordinate to harm (sabotage) the supervisor (yes/no). The treatment with the unfairly earned status enabled us to analyze how unfairness in job promotions influences the motivation and performance of the subordinate and the supervisor. Additionally, the treatments with sabotage provide insights into whether the subordinate would choose sabotage to lower the outcome of the supervisor in order to compensate for an unfair (fair) promotion procedure. In the post-experimental questionnaire, we collected data on individual characteristics and emotions of the subjects.

The remainder of our paper is organized as follows: In the next section, we discuss the theoretical background of our study and develop our hypotheses. We then describe the experimental procedure and the applied methodology. In the results section, we report the statistical tests and our main findings, which are further discussed in the conclusions section.

## **2. Theory and Hypotheses**

In the context of our research question, we interpret unfairness as a construct of unjustified inequity, which could result from distributive and procedural injustice. Distributive justice refers to the perceived fairness of the types and amounts of rewards which are distributed in organizations (Colquitt, 2001). In general, individuals expect rewards to reflect their effort and/or performance levels (Adams, 1965; Deutsch, 1975; Leventhal, 1976). Procedural justice refers to the perceived fairness of the procedures implemented when making decisions about the distribution of rewards (Thibaut and Walker, 1975). Experimental findings suggest that individuals take the fairness of procedures into account, for example in ultimatum games (Bolton et al., 2005) and in bargaining (Chlaß et al., 2009). Procedures that are controllable for employees are perceived to be fairer than procedures with low process control (Greenberg, 1990) or procedures where the

position is determined randomly (Hoffman et al., 1994). When investment in effort at work is perceived as a reason for an individual's promotion, the employee is expected to perceive this as being more fair (Gilliland, 1994). In contrast, a promotion decision is perceived to be unfair if it favors individuals who exert less effort and/or yield inferior performance compared to others (Ferris et al., 1992). In this case, the firm's reward system is not consistent with fairness expectations, which might also result from a lack of transparency and missing performance criteria.

Unfairness is regarded to be a main source of CWB (Ambrose et al., 2002). CWB is defined as a behavior that harms organizations or organizational stakeholders (Spector and Fox, 2010). It includes acts such as suppressing individual effort, performing tasks incorrectly, and sabotaging others (Spector and Fox, 2002). We define workplace sabotage as a behavior intended to "damage, disrupt, or subvert the operations for the personal purposes of the saboteur by creating unfavorable publicity, embarrassment, delays in production, damage to property, the destruction of working relationships, or the harming of employees or customers" (Crino, 1994, p. 312).

Focusing on the subordinate, we used the Equity Theory of Adams (1963) to explain the subordinate's reaction to unfair procedures. Besides the absolute reward that employees expect to receive, they also compare their reward (including their achieved status) with that of others. The Equity Theory helps to explain the conditions under which inequity arises. An employee might perceive inequity whenever her or his job inputs (effort) and/or outcomes and the resulting rewards (status) are felt to be disproportionate compared to the input-outcome-reward balance of other employees (Adams, 1963). This perceived unfairness often results in the feeling that an employee has not received what she or he deserves. Negative emotional and behavioral responses have been found when there is a discrepancy between the desired or expected outcome and the obtained outcome as well as when another person who is relevant for comparison purposes has obtained a better outcome (Schaubroeck and Lam, 2004). The presence of inequity creates a tension to achieve a higher level of equity or to reduce inequity. According to Adams (1963), employees can either try to inhibit the performance of others or they can increase their own effort in order to increase their own performance.

In the context of the equity framework we additionally employed the Attribution Theory (Weiner, 1995) to understand the processes by which applicants perceive and react to selection procedures and decisions. Attributions are likely to be very important in selection contexts (Gilliland, 1993), in particular an individual's causal attributions for a rejection. Attribution theory predicts that when the selection is perceived to be transparent and fair, then applicants are more likely to attribute the cause of events to internal, stable, and controllable dimensions. In contrast, when fairness rules are violated, individuals are likely to look for external sources or attribute the cause of events to a person (Weiner, 1995). To attribute outcomes to a person it is crucial whether a person thinks that the other person is responsible for the unfair outcomes or whether he or she attributes unfairness to external sources (e.g., unfair procedures) such as the organization on the whole.

In the next section, we elucidate emotions and individual factors that are relevant for explaining the reactions of subordinates to unfairness. We distinguish between performance and sabotage behavior. As emotional responses, we look at envy (distinguishing between benign and malicious envy) and negative emotions (e.g. frustration and anger). Further, we analyze the influence of SVO as an individual characteristic.

## **2.1 Envy and Performance**

In a competitive context, such as a promotion tournament, envy becomes important. Envy is a feeling of discontent with regard to another person's (perceived) advantages. Envy can develop if a person lacks another person's (perceived) quality, achievement, or possession and either desires it or wishes that the other did not possess (Parrott and Smith, 1993). Envy stems from an upward (social) comparison and can be reduced by narrowing the gap between oneself and the other by improving oneself or by pulling the other down (Van de Ven et al., 2009). As Spector and Fox (2002) state, emotions such as envy can give an individual the energy to change an unfair situation. Besides potentially leading to CWB, envy can also motivate people to work harder to achieve what others already have (Foster, 1972; Frank, 1999).

We distinguish between benign and malicious envy (Smith and Kim, 2007). Benign envy is a form of admiration toward the superior person without the

component of hostility, while malicious envy leads to the tendency to harm the superior person (Van de Ven et al., 2009). In the case of benign envy, the person who is envious increases his or her own personal effort in order to become as successful as the other person (Schaubroeck and Lam, 2004; Van de Ven et al., 2011). In contrast, a person who is maliciously envious attempts to bring the envied person down by decreasing the advantage of the other person or denigrating them through hostile actions (Duffy et al., 2012; Salovey and Rodin, 1984). Benign envy arises if the envied person's advantage is regarded as subjectively deserved and if the envious person perceives high control over personal outcomes (Van de Ven, et al., 2011). On the other hand, malicious envy occurs if the envied person's advantage is regarded as subjectively undeserved and the envious person experiences less control over personal outcomes (Van de Ven et al., 2011).

As predicted by Van de Ven et al. (2011), benign envy should materialize as a positive motivational factor in fair promotion tournaments where the advantage of the supervisor is perceived to be deserved. We therefore argue that in the case of fair job promotion procedures, benign envy does indeed lead to an upward motivation and to increased performance. Further, we argue that malicious envy arises in situations where the advantage of the supervisor is perceived to be undeserved, in an unfair situation (Van de Ven et al., 2011). This kind of envy resulting from the supervisor's undeserved status (the unfair job promotion) also raises the subordinate's energy level resulting again in increased performance. Therefore, we hypothesize an increase in performance under both scenarios – the fair and the unfair job promotion procedure:

***H1a:** Malicious envy increases the performance of the subordinate in an unfair job promotion procedure.*

***H1b:** Benign envy increases the performance of the subordinate in a fair job promotion procedure.*

## **2.2 Emotional Responses and Sabotage**

The second hypothesis considers whether unfairness results in active sabotage to reduce inequity and is the resulting emotional response of being (maliciously) envious. The unfair promotion process induces inequity because of the undeserved

higher status of the supervisor and the related higher payoffs. Engaging in sabotage is then an attempt to restore equity, that is, to compensate for an outcome that was deserved but not received (Ambrose et al., 2002).

Based on empirical findings, malicious envy arises in a situation where the advantage of a supervisor is perceived to be undeserved (e.g. in unfair situations). Malicious envy then motivates people to denigrate the supervisor, for example by sabotaging his or her performance. From the perspective of the Equity Theory several authors emphasize that envy occurs in situations of perceived inequity (Fehr and Schmidt, 1999; Bolton, 1991; Rabin, 1993; Smith, 1991; Parrott and Smith, 1993; Smith et al., 1999). The social exchange perspective (Blau, 1964) of fairness explains the relationship between unfairness, envy, and CWB. Based on reciprocal exchange in interactions, envy causes the envious person to direct harmful behavior toward the perceived cause of unfairness (Cohen-Charash and Mueller, 2007). Therefore, experiencing envy in an unfair situation increases the level of harmful behavior and leads to an interpersonal focus of the harmful behavior (Greenberg and Scott, 1996; Leventhal, 1976). A contrasting argument is based on the Attribution Theory (Weiner, 1995) which predicts that envious individuals should experience more threat to their self-esteem in fair situations where they attribute their inferior position to an internal cause (e.g., lack of ability) rather than to an unfair procedure (Mikulincer et al., 1989). That is why in a fair situation where failure can be attributed to internal causes, more harmful behavior can occur (Cohen-Charash and Mueller, 2007). However, we argue that the perceived unfairness argument dominates the internal attribution of inferiority and therefore hypothesize:

***H2a: Malicious envy will lead to higher sabotage by the subordinate in an unfair job promotion decision compared to a fair job promotion decision in retaliation to unfairness.***

Besides envy, promotion decisions have other emotional effects on the employees that were not promoted. Because of the discrepancy between the desired and the obtained outcome (Vroom, 1964), they often develop negative feelings, such as anger or frustration. These emotional responses can stimulate actions to change the environment or affect those to whom emotions are attributed, without addressing the situational cause. Such negative emotions can therefore cause unjustified and



destructive emotional responses (Spector and Fox, 2002). In an emotion-centered model of CWB, which includes sabotage, Spector and Fox (2002) state that the emotional state of an individual influences the appraisal of the organizational environment and affects reactions to events experienced at work. As negative emotions in general stimulate destructive responses, they also generally reinforce the related willingness to engage in CWB. Unfairness causes negative emotions such as distress, frustration and anger. As a result, people are less motivated to nurture fairness in their relationships with their co-workers, supervisor and the organization. Negative emotions are not limited to but can arise due to the perception that the outcome is undeserved and the supervisor is responsible for it (Tzafrir and Hareli, 2009). Depending on the attribution of unfairness these negative emotions can result in negative behaviors toward the supervisor in the form of revenge (Skarlicki et al., 1999). In summary, negative emotions increase the propensity of individuals to engage in CWB, but this propensity is even higher when environmental factors, such as an unfair job promotion procedure, provide “objective” justifications of these negative emotions. This argument leads us to the following hypotheses:

***H2b:*** *Negative emotions will lead to higher sabotage by the subordinate regardless of fairness in the job promotion procedure.*

***H2c:*** *Negative emotions will lead to higher sabotage by the subordinate in an unfair job promotion compared to a fair job promotion procedure in retaliation to unfairness.*

### **2.3 Social Value Orientation and Sabotage**

SVO as an individual trait is relevant when persons have to decide about different outcome distributions between themselves and another person. It is the preference for particular distributions of outcomes for oneself and others (Messick and McClintock, 1968). Previous research distinguishes mainly between prosocial and proself individuals. Prosocials put a positive weight on their own and others' outcomes. They maximize joint outcomes or collective welfare. By contrast, proselfs assign a positive weight to their own outcome but have little or no concern for the

outcomes of others. Consequently, they show less cooperative behavior when it is only beneficial to others (Van Lange, 1999).

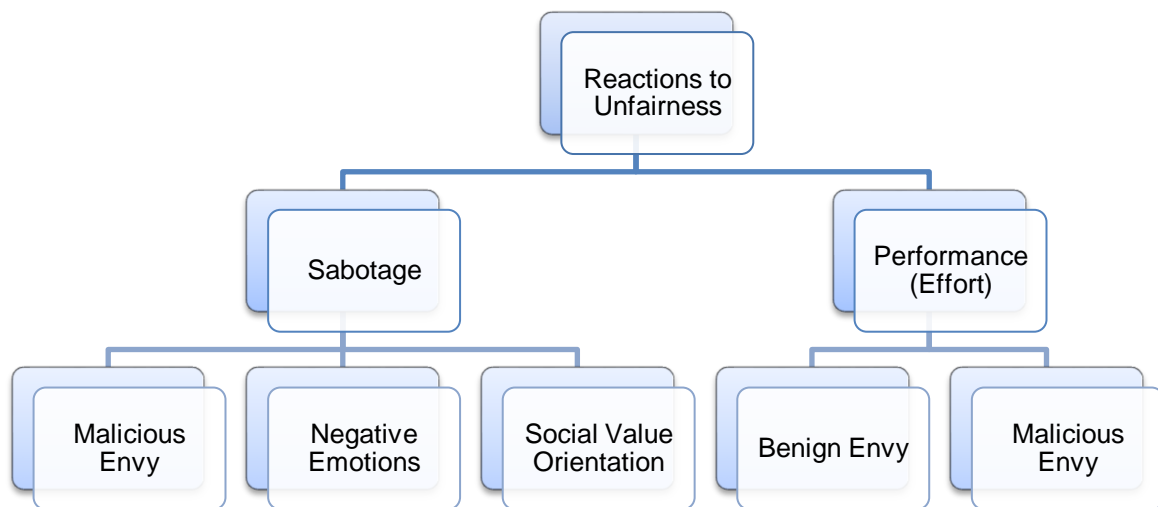
In the context of distributive justice, it has been well explored that prosocial individuals aim to enhance both collective outcomes and the equality of outcomes (De Cremer and Van Vugt, 1999; Kuhlman and Marshello, 1975; Stouten et al., 2005; Van Dijk et al., 2004). They are more cooperative and helpful and generally show more concern for others and organizational goals. Therefore, prosocial orientation is strongly linked to social responsibility and reciprocity (Kuhlman and Marshello, 1975; McClintock and Liebrand, 1988; Sattler and Kerr, 1991; Van Lange, 1999; De Cremer and Van Lange, 2001). The SVO literature also suggests that prosocials have a higher tolerance for unfairness compared to proselves. Karagonlar and Kuhlman (2013) showed in three studies that prosocials are better at managing their emotions in response to an unfair offer in the ultimatum game compared to proselves and emotionally respond more positively. Moreover, prosocials regard unfair offers less competitively and are driven more by an aversion to harming the proposer; therefore, they are more willing to accept unfair offers compared to proselves. The authors summarized that harm aversion and increased self-control are associated with increased moral judgment. A rejection of unfair offers such as in the ultimatum game, or sabotage, such as in our experiment, is an impulsive act and an expression of emotions. Thus, the acceptance of unfavorable circumstances is more greatly linked to prosocial behavior, because it shows positive regard for others and less impulsive decision-making. Moreover, prosocials are more likely to attribute unfairness to external factors than to a person. In general, they see their partner as being fair and are less doubtful about the motives of other persons. The literature also argues that prosocials have a higher tendency to reward or to punish their interaction partner according to what the partner deserves, so they behave non-cooperatively when the partner fails to behave cooperatively (De Cremer and Van Lange, 2001). This so-called “altruistic punishment” aims to enforce fairness norms by punishing the violators of norms (Karagonlar and Kuhlmann, 2013). However, and in line with the reasoning above, altruistic punishment by prosocials only occurs when an unfair outcome can be justified by the behavioral motives of the other person and is not related to external factors. If (procedural) injustice cannot be influenced by the other favored person, altruistic punishment should not drive the behavior of prosocials.

Summarizing the argument, we conclude that prosocials have an increased self-control regarding (negative) emotions in social relationships and a higher aversion to harm compared to proselfs. Further, they are more likely to attribute the promotion decision to external factors. Therefore, they are generally less likely to punish the supervisor, should they develop negative emotions due to the promotion tournament's outcome.

**H3a:** *Prosocials are less likely to punish their supervisor for an (unfair) promotion decision compared to proselfs.*

**H3b:** *Negative emotions lead to less sabotage from prosocials compared to proselfs.*

Figure 5.1 summarizes the relevant constructs concerning our research questions.



**Figure 5.1: Research Framework**

### 3. Experimental Design and Procedure

To answer the proposed research questions, a laboratory experiment was conducted at a large German university. The experiment was programmed in z-tree (Fischbacher, 2007). A 2x2 factorial design was chosen, with the factors “type of

promotion” (fair vs. unfair) and the possibility of harming the supervisor by sabotaging her or his performance (yes vs. no). For experimental instructions see Appendix 5.D.

The experiment consisted of five stages: (1) introduction to the experiment, (2) a mathematical calculation task, (3) a slider task relevant for the team member’s payment, (4) the SVO slider, and (5) a post-experiment questionnaire at the end. Following the introduction, all participants were assigned to dyads and asked to perform mathematical calculations (additions, subtractions, multiplications, divisions) for seven minutes, competing against the other team member (similarly to Ekstrom et al., 1976). Depending on the difficulty of the mathematical calculations, the subjects earned a different number of points for each correct calculation. The roles of the participants within their dyad depended on their performance in the mathematical calculation task and the participation in either the fair or the unfair treatment. In the fair treatment, the team member with the higher (lower) performance was given the role of the supervisor (subordinate). In the unfair treatment, higher performance within the team led to the role of the subordinate and lower performance led to the role of the supervisor, which is associated with more power and a higher status. The supervisor received an advance of 10 sliders in the slider task (described below) and earned twice the compensation for her or his performance than the subordinate did. These substantially greater monetary benefits for the supervisor emphasized the status difference.

In all treatments, the participants received information about the performance of their partner, enabling them to perceive the fairness (unfairness) of the promotion decision. In advance, participants were only informed that they would be promoted to the role of the subordinate or the supervisor based on their performance. This experimental design was chosen to trigger the expectation that the high performer would be promoted. However, we did not say whether a high or a low performance would lead to the promotion. Hence, the promotion procedure was not transparent to the subjects, because they were not informed about the relevant promotion criteria prior to the promotion decision.

After the mathematical calculation task and the promotion decision, the participants had to perform the slider task (Gill and Prowse, 2011). The slider task is an effort task and measures the performance of the participants as a response to the fair and the unfair promotion decision. We decided to choose another

performance task rather than the mathematical calculation task because in practice a new role assignment often leads to other fields of activity. Furthermore, we chose a task where performance outcomes are driven by motivation (effort) and not by individual differences in skills. When performing the slider task, subjects position each slider at any integer location between 0 and 100. The goal of the slider task is to position as many sliders as possible at 50 during the given time. There were 48 sliders given and the participants had 120 seconds to perform the task. The task was played for four rounds, in which the first round served as a practice round, allowing participants to learn the task. The three subsequent rounds determined the performance of the subordinates and supervisors relevant to their payment. The number of correctly positioned sliders in each round measured the effort and the performance of the participants. For each slider, the subordinate earned 1 Franc (equal to 0.1 Euro). The supervisor received an advance of ten sliders and earned two Francs per slider (0.2 Euro). Additionally, all participants received a show-up fee of 30 Francs irrespective of their performance. The total performance of each participant resulted from the sum of all correctly positioned sliders in all three rounds of play.

In the sabotage treatments, the subordinate had the possibility to reduce the performance of the supervisor. S/he had to decide which percentage amount (0-100%) of her or his own correctly positioned sliders s/he wanted to subtract from the sliders of the supervisor. This decision had to be made before the subordinate performed the task. The better the subordinate performed and the higher the chosen percentage was, the more the supervisor was harmed. The chosen percentage indicates the share by which the subordinate's effort is motivated by sabotage, because it was generated in order to harm the supervisor. In summary, this procedure allowed us to measure the influence of the fair and unfair promotion procedures on the willingness to sabotage.

Additionally, we measured the SVO of the participants by using the SVO slider designed by Murphy et al. (2011). The SVO slider considers how people vary in their motivation or goals when evaluating different resource allocations between themselves and others. The SVO is a continuous construct that is measured with a continuous scale and results are expressed through the SVO angle. The higher the SVO angle, the more a person shows regard for others and minimizes the difference between her or his own payoffs and the payoffs of others.

To identify the personal factors that influence performance in the second round and the decision to sabotage, we included item batteries employing a Likert scale from 1 to 7 for the following constructs: altruism, competitiveness, status-seeking, benign envy, malicious envy, and negative emotions of subordinates (see Appendix 5.C). We used the principal-component factor (pcf) method with standardized items for the factor analysis and we only considered factors with an Eigenvalue higher than 1. We dropped items with a low item-test correlation, and required factor loadings that were higher than 0.5 (see Bryant and Yarnold, 1995). Based on the literature, we concentrated on constructs with a Cronbach's alpha higher than 0.7 (Nunnally and Bernstein, 1994). We also controlled for other constructs from the factor analysis such as altruism, competitiveness and status but did not find these factors to drive the results of the behavior of the subordinate.

For the factor "envy", we distinguish between benign and malicious envy as derived in the theoretical section. Consequently, we used the benign and malicious envy scale of Lange and Crusius (2015), which is based on the existing trait measures of envy (Gold, 1996; Smith et al., 1999; Veselka et al., 2014). The five items of benign envy measure whether a person is motivated to improve her- or himself when s/he feels envy. One statement, for example, is "When I envy others, I focus on how I can become equally successful in the future". The factor overall shows a cronbach's alpha of 0,8540. The five items of malicious envy measure whether people dislike the superior when they feel envy; so one statement is for example "I want superior people to lose their advantage". The cronbach's alpha for the factor of malicious envy is 0,7540.

The factor for the emotional response of a person is derived from Spector and Fox (2002) and Tzafrir and Hareli (2009) who describe how an unfair treatment influences the emotions of individuals. The items concerning emotional responses that are included in our factor variable "negative emotions" are: frustration, anger, sadness, and hopelessness. The cronbach's alpha for the factor including these four items is 0,7986. Spector (1978) suggests that job conditions that interfered with an individual's goal would induce feelings of anger and frustration, and subsequently lead to CWB. For example, anger is likely to arise due to the perception that the outcome is undeserved and that the manager is responsible for it (Tzafrir and Hareli, 2009). Hopelessness may arise if employees perceive the outcome to be uncontrollable and believe that this situation cannot be changed

(Tzafrir and Hareli, 2009). Because the items anger, frustration, sadness and hopelessness together measure negative emotions, that are related to promotion procedures, we summarize them by generating the factor of negative emotions.

The questions regarding competitiveness are based on the work and family orientation questionnaire of Helmreich and Spence (1978). The competitiveness factor consists of the enjoyment of interpersonal competition and the desire to win. The items for the factor "altruism" are based on the Self-Report Altruism Scale of Rushton et al. (1981), which asks about altruistic behavior in certain situations and, for example, considers donations to charity organizations. As mentioned before we controlled for these factors but did not consider them in further analysis.

We also included manipulation checks about the effects of unfairness on performance and sabotage. To measure the perceived fairness of the promotion decision, we included the justice measure items of Colquitt (2001) in the post-experiment questionnaire. Based on the justice literature (e.g., Leventhal, 1976, 1980; Thibaut and Walker, 1975), the author developed a 4-factor structure to measure distributive, procedural, interpersonal, and informational justice. Each justice factor is measured by items which describe the perceived fairness of a person or procedure, enabling a distinction to be made between the different justice dimensions. In our experiment, we do not have interactions and communication between subjects and therefore we did not consider interactional and informational justice. Instead, we concentrated on the fairness of promotion procedures. The perceived fairness includes items concerning control over a procedure as well as accuracy, morality, and consistency of the procedure. For example, we asked whether participants think that they have a strong influence on the results of the promotion procedure and whether they think that the procedure is unbiased and transparent.

Finally, we considered whether the subordinates attribute the unfair promotion decision to the organization or to the supervisor personally, because this may influence the decision to sabotage. We measured the attribution of the promotion procedure based on the Causal Dimension Scale (CDS II) from McAuley et al. (1992). Innovatively to the original CDS, the authors distinguish between controllability for oneself and controllability for other people. The locus of causality is measured by asking, whether the non-promoted subjects attribute the decision of the promotion procedure to the supervisor or to the company. After collecting

answers about these control factors, the experiment concluded with questions about demographic data, such as age, gender, degree program, and professional experience.

## **4. Results and Discussion**

### **4.1 Descriptive Analysis and Tests of Significance**

In the experiment, the subjects were randomly assigned to one of the four treatments. The relevant dependent variables and the focus of our analysis are the performance of the subordinate and the subordinate's willingness to sabotage the supervisor in the treatments where harming the supervisor was possible. We ran two sessions for each of the four treatments, and in sum we had 58 participants in the treatments with sabotage and 56 participants in the treatments without sabotage.<sup>1</sup> Overall, we had 228 participants; 47.37% of them were females. The average age was 23.15 (SD=3.11) years and the average practical experience was 1.48 years (SD=2.18).

#### **4.1.1 Performance of Subordinates**

First, we analyzed the effect of unfairness on the performance of the subordinate. We looked at the relative improvement of the performance calculated as the average increase in solved sliders in the three rounds of play in compared to the performance in the practice round. Through this procedure we were able to measure the motivation of the participants to increase performance in every round and put effort into the task. As Table 5.1 shows, the improvement of the subordinates is only within a range of 47.03% and 52.31% and does not differ significantly for the fair and the unfair treatments ( $t = -0.1697$ ,  $p = 0.8656$ ). This indicates that unfairness in the promotion procedure does not motivate subordinates to put more effort into the slider task to arrive at a more equal outcome compared to the payoff of the supervisor. Therefore, and according to our hypotheses, we expect other factors to influence the motivation of the subordinates.

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<sup>1</sup> In one treatment we excluded a team, because one member was missing.

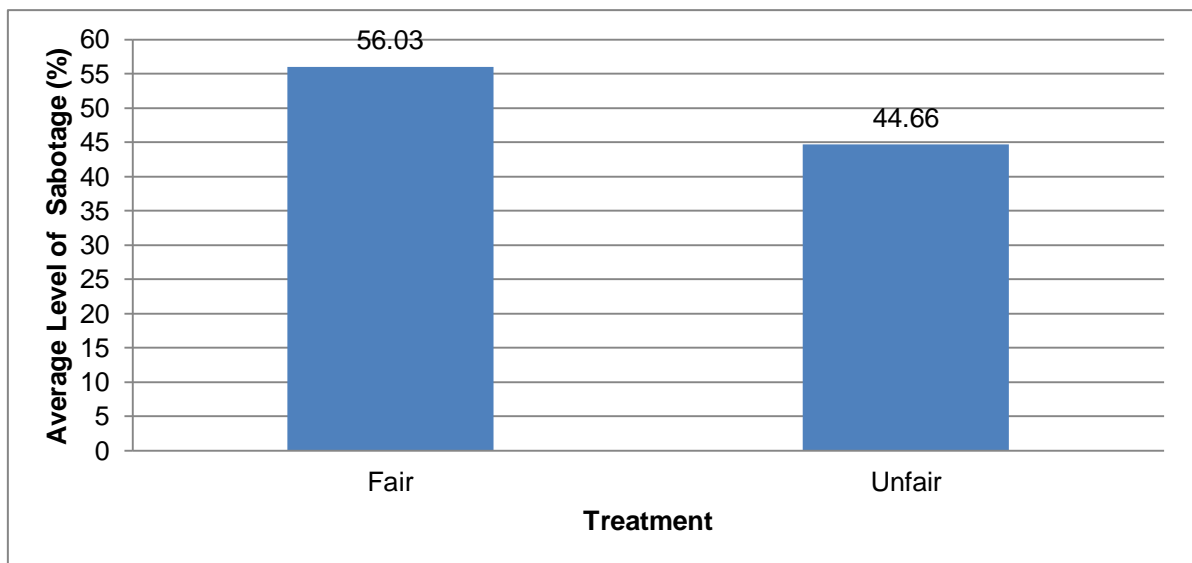


**Table 5.1: Average Increase in Performance of Subordinates**

Relative Performance	Mean	Std. Deviation
Fair, No Sabotage	0.4703	0.1359
Unfair, No Sabotage	0.5231	0.1316
Fair, Sabotage	0.4911	0.0560
Unfair, Sabotage	0.4772	0.1109

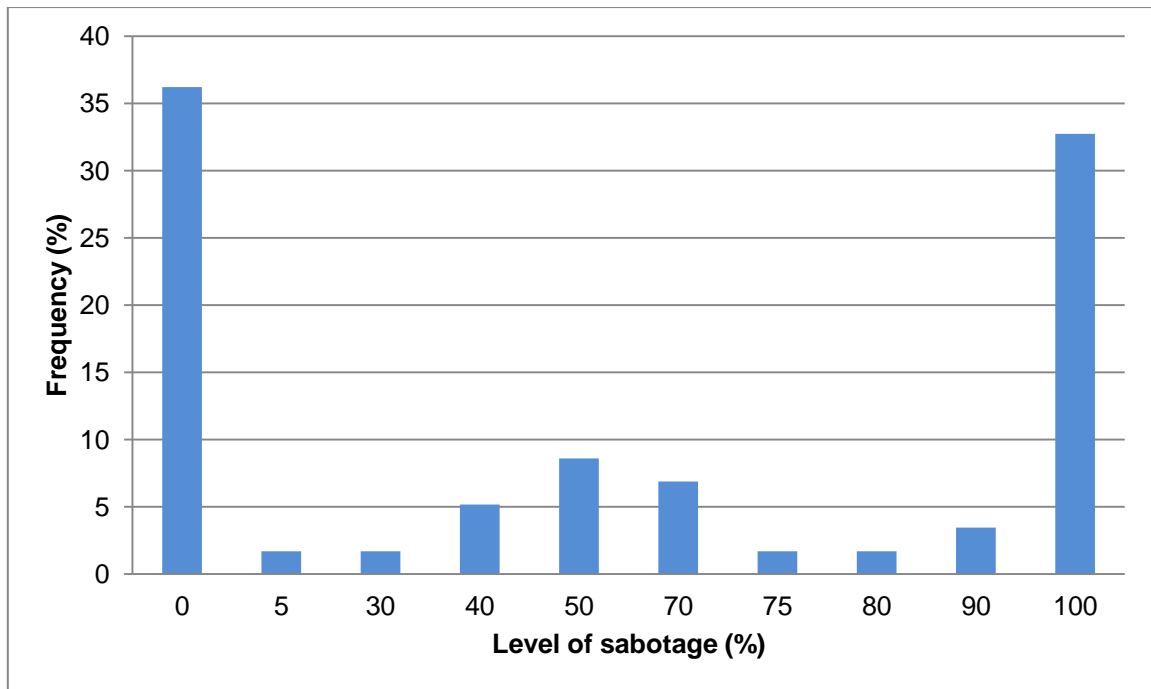
#### 4.1.2 Sabotage by Subordinates

Sabotage is calculated as the amount (as a percentage) of the subordinate’s correctly positioned sliders, which s/he wants to subtract from the correctly positioned sliders of the supervisor. As illustrated in Figure 5.2 there is a substantial but not significant difference in sabotage. On average, the sabotage level in the fair treatment is 56.03 % and 44.66 % in the unfair treatment.



**Figure 5.2: Level of Sabotage by Subordinates**

Figure 5.3 shows that 36.21 % of the participants decided against sabotage, while 32.76 % opted to conduct sabotage on a level of 100 %. The range between 0 % and 100 % was not chosen frequently. As we could not find a normally distributed propensity to sabotage, we therefore created a dummy variable (1 for “sabotage”, 0 for “no sabotage”). When testing for statistical differences, we did not find that the willingness to sabotage differed significantly in the fair and the unfair treatment ( $t = 1.3644$ ,  $p = 0.1779$ ). Again, this result indicates that there are other factors driving the results.



**Figure 5.3: Percentage Distribution of Sabotage**

#### **4.1.3 Envy and Negative Emotions**

We analyzed the level of envy and negative emotions of the subordinates. The results show that the average envy level for benign envy does not differ significantly in the fair and the unfair treatment ( $t = -0.3641$ ,  $p = 0.7165$ ). The same holds for malicious envy ( $t = 0.4354$ ,  $p = 0.6641$ ). This indicates that an unfair situation does not influence envy; rather, envy in this experimental setting seems to be an individual attitude toward a situation of perceived inferiority compared to a superior person, irrespective of the given (un) fair situation.

We also tested for the level of negative emotions. As the results show, negative emotions are significantly higher for the unfair promotion procedure than for the fair procedure ( $t = -3.2076$ ,  $p = 0.0017$ ). This indicates that unfairness generates negative feelings such as envy, which do not refer to the supervisor directly such as envy but rather to the unfair situation.

#### **4.1.4 Perceived Fairness and Attribution of Unfairness**

For the manipulation check, we asked whether overall the participants perceived the procedure of the promotion as fair. Further, we asked whether they perceived themselves as having a high degree of control over the outcome of the decision. This allowed us to test whether subjects perceived a controllable relationship between effort and output. The comparison of the average perceived unfairness shows that in the fair treatment overall the subordinates perceived a significantly higher level of fairness compared to the unfair treatment ( $t = 8.9156$ ,  $p < 0.0001$ ). Results also confirm a higher perceived controllability over the outcomes of the promotion process in the fair treatment than in the unfair treatment ( $t = 5.7532$ ,  $p < 0.0001$ ). We therefore conclude that our manipulation of unfairness influenced the perceptions of fairness of the participants.

With regard to the Attribution Theory, we found that, for the treatments with sabotage, the attribution of the promotion decision to the supervisor is significantly lower in the unfair promotion compared to the fair promotion ( $t = 3.7121$ ,  $p = 0.0005$ ), while the attribution of the promotion decision to the company is significantly higher in the unfair treatment compared to the fair treatment ( $t = -2.2056$ ,  $p = 0.0315$ ). The results indicate that the subordinates do not hold the supervisor responsible for the unfair promotion procedure. Rather they recognize that the company has established an unfair promotion procedure. Our results support the prediction by the Attribution Theory that (in the treatments with sabotage) the subordinates attribute outcomes more to their own effort in the fair treatment compared to the unfair one ( $t = 5.5757$ ,  $p < 0.0001$ ).

#### **4.2 Regression Analysis**

For testing the hypotheses, we applied a multiple regression analysis. With regard to our research question, the subordinates can compensate unfairness by changing their own input or by distorting the outputs of others (i.e. the supervisor). Therefore, we focus on two main dependent variables: relative performance and sabotage. As independent variables, we included fairness of the job promotion procedure as a dummy variable (fair = 0, unfair = 1), the SVO angle, the factor values of negative emotions and the factor values of benign and malicious envy.

#### 4.2.1 Performance of Subordinates

First, we analyzed the performance of the subordinate. We looked at the performance enhancement, defined as the average increase in the solved sliders compared to the practice round. The findings are summarized in Table 5.2.

**Table 5.2: Regression Analysis: Performance of Subordinates**

Relative Performance		Model 1	Model 2
	Hypothesis (predicted sign)	Coefficient (p – value, two-sided)	Coefficient (p – value, two-sided)
Intercept		0.7441 (0.000)***	0.7355 (0.000)***
Unfair		-0.0049 (0.960)	0.0359 (0.737)
Sabotage		-0.0839 (0.409)	-0.1009 (0.341)
SVO Angle		-0.0090 (0.024)**	-0.0095 (0.021)**
Malicious Envy		-0.0186 (0.757)	0.0191 (0.787)
Malicious Envy * Unfair	H1a (+)	0.3354 (0.000)***	0.3045 (0.002)**
Negative Emotions			-0.0893 (0.314)
Benign Envy * Unfair	H1b (+)		-0.0283 (0.709)
Benign Envy * Unfair			0.0559 (0.560)
Negative Emotions * Unfair			0.0371 (0.753)
		Number of Observations = 114 R-squared = 0.2343 Adj.R-squared = 0.1989	Number of Observation = 114 R-squared = 0.2469 Adj.R-squared = 0.1817

\*0.05 ≤ p < 0.1, \*\*0.01 ≤ p < 0.05, \*\*\* p < 0.01

The regression analysis in Model 1 in Table 5.2 shows that the unfair promotion procedure has no significant influence on the performance of the subordinate ( $p = 0.960$ ). We also found that the option to sabotage the supervisor does not motivate the subordinates to perform better ( $p = 0.409$ ). With regard to these results, we did not find any evidence that an increase in performance (as argued in the descriptive analysis) is motivated by the treatment effects but is in fact rather influenced by individual traits and emotional responses.<sup>2</sup> When testing H1a and H1b addressing the influence of benign and malicious envy on the performance of the subordinate, we found that overall malicious envy tends to result in a lower performance of the subordinate, while having a positive effect on performance in the unfair treatment ( $p < 0.0001$ ), as predicted in H1a. The findings support the view that malicious envy will occur in an unfair situation where the supervisor does not deserve her or his status and could have a motivational effect to increase performance in order to compensate inequity. When considering benign envy (H1b), we did not find any significant effect ( $p = 0.709$ ) on the subordinate's performance, for the fair or the unfair treatment. This indicates that in our experiment destructive feelings drive behavior more than constructive feelings (Baumeister et al., 2001).

In Model 2 in Table 5.2, we additionally tested for negative emotions which might arise from the unfair promotion procedure and which might therefore have an influence on effort. We did not find any significant effects, but the regression shows that the SVO angle overall has a significant negative influence on performance ( $p = 0.024$ ). It seems that prosocials have a lower motivation to increase performance after the promotion decision. One explanation could be that prosocials show lower competitive characteristics (Eek and Gärling, 2006; Van Lange et al., 2013). Thus, they are less motivated to increase their own payoff and reduce perceived inferiority through higher effort.

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<sup>2</sup> We also tested whether the interaction of the possibility to sabotage and unfairness in promotion has an influence on a subordinate's performance but did not find any significant effects.

#### 4.2.2 Sabotage by Subordinates

To analyze the sabotage behavior of subordinates we performed a logistic regression. The results are presented in Table 5.3.

**Table 5.3: Logistic Regression: Sabotage by Subordinates**

Dummy Sabotage		Model 3	Model 4
	Hypothesis (predicted sign)	Coefficient (p – value, two-sided)	Coefficient (p – value, two-sided)
Intercept		4.0116 (0.013)**	4.2582 (0.019)**
Unfair		-2.7937 (0.122)	-3.3626 (0.107)
SVO angle	H3a (-)	-0.1157 (0.027)**	-0.1128 (0.060)*
SVO * Unfair		0.0736 (0.233)	0.0795 (0.264)
Negative Emotions	H2b (+)	2.3441 (0.074)*	3.1808 (0.046)**
Negative Emotions * Unfair	H2c (+)	0.6283 (0.428)	-0.1068 (0.915)
Negative Emotions * SVO	H3b (-)	-0.0792 (0.049)**	-0.0893 (0.055)*
Benign Envy			0.1307 (0.855)
Malicious Envy			-0.5419 (0.361)
Benign Envy * Unfair			0.1835 (0.833)
Malicious Envy * Unfair	H2a (+)		0.7347 (0.319)
		Number of Observation = 58 Pseudo R-squared = 0.2299	Number of Observation = 58 Pseudo R-squared = 0.2510

\* 0.05 <= p < 0.1, \*\* 0.01 <= p < 0.05, \*\*\* p < 0.01

Model 3 in Table 5.3 shows that unfairness has no significant effect on the sabotage behavior of subordinates ( $p = 0.122$ ). One explanation is that the attribution of the promotion procedure to the organization is significantly higher in the unfair treatment compared to the fair treatment, while the attribution to the supervisor is significantly lower in the unfair promotion as showed in the descriptive analysis section. Therefore, the cause of unfairness could be a driver for the reactions of the subordinates not to punish the supervisor for unfairness.

We also analyzed which emotional responses and individual factors influence the sabotage behavior of the subordinates. For H2b, which hypothesizes that negative emotions in general increase sabotage behavior, we find supporting results ( $p = 0.074$ ). This provides further evidence for the emotion-centered model of Spector and Fox (2002), which indicates that destructive behavior helps to regulate such emotions. Our findings do not support H2c which predicts that negative emotions lead to higher sabotage in the unfair situation ( $p = 0.428$ ). The interpretation could also be that negative emotions triggered by the unfair promotion procedure are not attributed to the supervisor. In our case, the supervisor has no control over the promotion procedure and therefore s/he is not responsible for the promotion outcome. This would imply that the subordinate should not hold any negative emotions against the supervisor and as a consequence mitigates any intentions to harm her or him in retaliation to the promotion outcome (if s/he attributes the unfairness correctly to the promotion procedure). In contrast, in the fair treatment, when the supervisor performs better in the calculation task and deserves the position as supervisor under fair circumstances, the supervisor can be perceived to be more responsible for the promotion outcome than in the unfair treatment and therefore the negative emotions of the subordinate are related to the supervisor. This result reflects the findings related to the Attribution Theory which states that threats to self-esteem are more pronounced in a fair situation where the outcome is attributed to internal causes (e.g. low ability or effort).

Further, we analyzed the influence of SVO. Based on empirical findings, we assumed that prosocials would show more cooperative and helping behavior (De Cremer and Van Lange, 2001) and would therefore be less willing to sabotage the performance of the supervisor. We found support for H3a that the higher the SVO angle (more prosocial individuals), the lower the tendency to harm the supervisor ( $p = 0.027$ ). This supports the empirical findings that prosocials in general have a

greater aversion to harm, irrespective of a fair or an unfair situation. In this context, we also analyzed whether prosocials have a better self-regulation of negative emotions, as argued in H3b. The interaction term of negative emotions and the SVO angle shows that negative emotions lead to a significantly lower willingness to sabotage when the individuals are more prosocial ( $p = 0.049$ ). Overall, this result supports H3b and the respective argument by Karagonlar and Kuhlman (2013) that prosocials act less impulsively and have an increased self-control of their (negative) emotions in social relationships.

Model 4 does not support the theoretical predictions of H2a that malicious envy will lead to higher sabotage in the unfair job promotion treatment. The non-significant effects of envy could also result from the findings that envy does not differ significantly in the fair and the unfair treatment; rather, envy seems to be an individual characteristic irrespective of the fair or unfair situation.

## 5. Conclusions

This paper analyzes the effect of fair and unfair job promotion procedures on job performance and CWB in hierarchical relationships. In particular, we ask whether unfairness embedded in organizational procedures (unfair promotion) leads to destructive behavior on the part of the subordinates. According to Adams (1963), people try to reduce inequity either by inhibiting the other's performance or by increasing or decreasing their own effort. Our paper contributes to the identification of factors leading to CWB in the context of unfairness. In particular, we analyze individual traits and emotional responses, such as SVO, envy, and negative emotions that cause people to harm others instead of increasing their own performance. Such individual differences are usually difficult to observe in the workplace.

The results show that unfairness does not necessarily destroy motivation and does not increase the propensity to sabotage. Rather, the decision to sabotage the supervisor for a fair (unfair) job promotion procedure is primarily driven by the subordinate's SVO and emotions. In general, negative emotions increase the willingness to sabotage, and yet we were able to show that negative emotions lead to a lower willingness to sabotage for prosocial individuals. Furthermore, we found



that malicious envy had a motivational effect in the unfair treatment in increasing performance rather than harming the supervisor. Hence, the study implicates that in the long-term, it is important for organizations to identify those employees who are able to handle unexpected and especially (perceived) unfair situations. Employees who are prone to negative emotions are more likely to sabotage others and might even be harmful for an organization and their team members. Our study can help firms with the selection of its employees by identifying those characteristics that lead to less or more harmful behavior in organizations. The results indicate which individual emotions and traits are relevant for reactions in unfair situations and therefore emphasize how individual behavior can be regulated to avoid sabotage. Further, the analysis of the emotional side of an unfair promotion enables to distinguish between affective harmful behavior as a reaction to unfairness and strategic sabotage in order to harm others in the long-term. According to our results, affective harmful behavior is more likely to occur in individuals with less regard for others because these individuals show less control of their emotions and react immediately to a given situation. However, this does not necessarily mean that these people also have the intention to sabotage their co-workers in the long-term.

Our study has some limitations: First of all, we conducted an experiment that established the role of a supervisor based on a mathematical calculation task. In reality, promotion decisions are based on a variety of criteria (e.g. management skills). However, we believe that unfairness is likely to yield similar results, even in multi-criteria settings. Second, the performance and sabotage procedure were based on the independent behavior of both team members. We are aware that interaction processes might alter our results and that modeling these interaction processes requires further research. Moreover, a contribution to the justice literature would be to analyze how unfairness influences the relationships between subordinates and supervisors in the long run when employees are prone to negative emotional responses. In our setting we only measure whether the subordinate decides to sabotage the supervisor at one point in time. Dalal (2005) argues that harmful behavior could be followed by helping behavior because of feelings of guilt or because only harmful behavior was affective. Therefore it would be recommended to analyze sabotage behavior over a longer time period. Further, there are no costs for the subordinate to engage in sabotage behavior, which could enhance the probability of such behavior. Moreover, the subordinate can only harm

the supervisor for unfairness and not the organization. As our results indicate, the unfairness is attributed more to the company than to the supervisor, thus it would be interesting to analyze how the behavior of the subordinate changes when she or he could harm the organization (e.g. through reduced work quality).

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## Appendix

### Appendix 5.A. Performance of Supervisors

The main focus of our study lies on the subordinate's reaction to the job promotion; therefore, we only briefly report the results for the supervisor. The Figure below shows that the range of average performance improvement is wider (31.81% to 62.44%) than for the subordinate. Unfairness leads to a higher performance ( $p = 0.258$ ) as shown in the regression analysis. It seems that the supervisor does not exploit her or his higher status but is more motivated in the case of unfair job promotion. The possibility of being harmed in the unfair treatment does not affect the performance significantly ( $p = 0.709$ ). One explanation could be that the supervisor does not assume that the subordinate will punish her or him for the job promotion decision because the subordinate does not attribute unfairness to the supervisor.

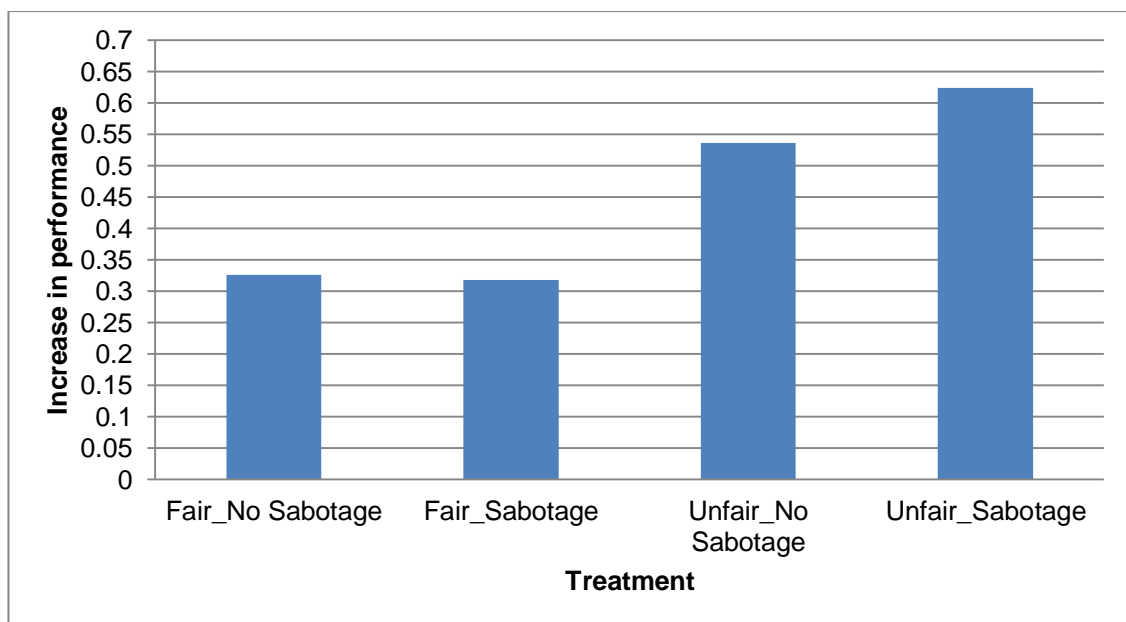


Figure A – 5.1: Increase in Performance

**Table A – 5.1: Regression Analysis: Performance of Supervisors**

	Coefficient (p-value, two-tailed)
Intercept	0.3268 (0.014)**
Unfair	0.2097 (0.258)
Sabotage	-0.0087 (0.962)
Unfair * Sabotage	0.0966 (0.709)

N=114

R-squared = 0.0372

Adj. R-squared = 0.0110

## Appendix 5.B. Factor Analysis

**Table B – 5.1: Factor Benign Envy**

<b>Benign Envy</b>	Item-test correlation	Item-rest correlation	Average interitem correlation	Cronbachs Alpha
When I envy others, I focus on how I can become equally successful in the future.	0.7800	0.6450	0.5487	0.8295
If I notice that another person is better than me, I try to improve myself.	0.7790	0.6436	0.5494	0.8298
Envyng others motivates me to accomplish my goals.	0.7468	0.5971	0.5707	0.8417
I strive to reach other people's superior achievements.	0.8398	0.7348	0.5091	0.8058
If someone has superior qualities, achievements, or possessions, I try to attain them for myself.	0.8270	0.7152	0.5176	0.8110
Cronbach's alpha: 0,8540				

**Table B – 5.2: Factor Malicious Envy**

<b>Malicious Envy</b>	Item-test correlation	Item-rest correlation	Average interitem correlation	Cronbachs Alpha
I wish that superior people lose their advantage.	0.7113	0.5215	0.3793	0.7096
If other people have something that I want for myself, I wish to take it away from them.	0.7231	0.5385	0.3723	0.7035
I have a bad feeling towards people I envy.	0.6169	0.3919	0.4351	0.7550
Envious feelings cause me to dislike the other person.	0.7342	0.5546	0.3657	0.6976
Seeing other people's achievements makes me resent them.	0.7643	0.5991	0.3479	0.6810
Cronbach's alpha: 0,7540				

**Table B – 5.3: Factor Negative Emotions**

<b>Negative Emotions Subordinate</b>	Item-test correlation	Item-rest correlation	Average interitem correlation	Cronbach's Alpha
I felt frustrated after the promotion decision.	0.8032	0.6325	0.4835	0.7375
I felt sad after the promotion decision.	0.8265	0.6714	0.4589	0.7179
I felt angry after the promotion decision.	0.7976	0.6235	0.4894	0.7420
I felt hopeless after the promotion decision.	0.7309	0.5189	0.5596	0.7922
I felt envy of the supervisor after the promotion decision.	eliminated			
I felt admiration for the supervisor after the promotion decision.	eliminated			
I felt shame after the promotion decision.	Eliminated			
I felt happy after the promotion decision.	Eliminated			
I felt proud after the promotion decision.	Eliminated			
Cronbach's alpha: 0,7986				

## Appendix 5.C. Nonparametric Tests

**Table C – 5.1: Nonparametric Tests for Performance and Sabotage**

Group	Dependent Variable “Increase in Performance“		Dependent Variable “Dummy Sabotage“		Dependent Variable “Sabotage (%)“	
	z	p	z	p	z	p
<b>(fair, unfair)</b>	0.303	0.7617	1,354	0.1757	0.950	0.3420

*Comparison of means for the basis treatment “fair“ and the manipulation treatment “unfair“. We performed a two-sample Wilcoxon rank-sum (Mann-Whitney) test, with p (two-tailed):*

\* 0.05 ≤ p < 0.1, \*\*0.01 ≤ p < 0.05, \*\*\* p < 0.01.

**Table C - 5.2: Nonparametric Tests for Perceived Fairness and Attribution**

Group	Dependent Variable “Perceived Fairness“		Dependent Variable “Attribution to Supervisor“		Dependent Variable “Attribution to Company“	
	z	p	z	p	z	p
<b>(fair, unfair)</b>	0.7078	0.0000***	4.626	0.0000***	-2.209	0.0272**

*Comparison of means for the basis treatment “fair“ and the manipulation treatment “unfair“. We performed a two-sample Wilcoxon rank-sum (Mann-Whitney) test, with p (two-tailed):*

\* 0.05 ≤ p < 0.1, \*\*0.01 ≤ p < 0.05, \*\*\* p < 0.01.

**Table C – 5.3: Nonparametric Tests for Envy and Negative Emotions**

Group	Dependent Variable “Benign Envy“		Dependent Variable “Malicious Envy“		Dependent Variable “Negative Emotions“	
	z	p	z	p	z	p
<b>(fair, unfair)</b>	-0.944	0.3454	0.366	0.7147	-3.212	0.0013***

*Comparison of means for the basis treatment “fair“ and the manipulation treatment “unfair“. We performed a two-sample Wilcoxon rank-sum (Mann-Whitney) test, with p (two-tailed):*

\* 0.05 ≤ p < 0.1, \*\*0.01 ≤ p < 0.05, \*\*\* p < 0.01.



## Appendix 5.D. Experimental Instructions

Note:

Red information: Information for the treatment with sabotage

Green information: Information for the fair promotion treatment

### Procedure

During the experiment you are going to form a team with another person in this room. Neither you nor the other person will know who the other person is.

You will work in a company where you will have the role of the subordinate or the supervisor. To become the supervisor or subordinate you will have to solve some mathematical problems. Your performance in this task will determine whether you will have the role of the subordinate or the supervisor. One supervisor and one subordinate build a team.

You and your partner will have to solve another task after the promotion decision. It is a Slider Task. Your and your partner's payment will depend on your results in this task and the decision on promotion.

Regardless of the results of the experiment you will receive a show-up fee of 30 Franc.

**Note: 1 Franc equals 0,1 Euro!**

Continue

### Your Task – mathematical problem

The experiment starts with a mathematical task. You will have to solve as many mathematical problems as possible within the given time of seven minutes. One task always includes one of the basic mathematical operations. You do not need other calculation rules such as point before line calculation or parentheses. Only integer numbers can be correct solutions. Enter your result in the box without using decimal points.

On the screen you will see four areas each with five problems. They will be displayed as follows:

$$19 \cdot 8 = \boxed{\phantom{000}}$$

You do not need to solve the problems in the given order. You can also skip questions. You only get points for entering the correct result. For entering nothing or the wrong result you will not lose any points. You are allowed to use the given materials on your desk.

For solving a problem correctly, you get points depending on the calculation type:

Addition:	1 point
Subtraction:	2 points
Multiplication:	3 points
Division:	4 points

Continue

### Your Task - mathematical problem (Continuation)

Once you have answered all the mathematical problems on the screen or cannot answer them anymore, press the button "Continue". You will then see the next task. By pressing the button "Back" you can get back to the previous screen.

Down to the right you can see your remaining time in seconds. Once the time is over there will be a message displayed and you will not be able to work on the mathematical task anymore. By pressing the button "Finish task" you finish and continue with the experiment. The order in which you work on the tasks is not important. Furthermore, all problem sheets are valued equally. It is not possible to solve all the mathematical problems in the given time. Solve as many problems as you are able to within 7 minutes.

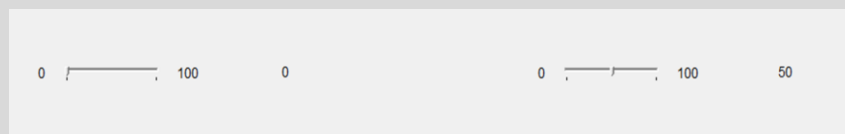
Continue

Your performance in solving the mathematical problem will determine whether you get the role of the supervisor or the subordinate. After solving the mathematical problems you are going to solve the Slider Task. In the following the Slider Task will be explained.

Continue

### Your Task – Slider Task

The goal of the Slider Task is to move the computer mouse between the values 0 and 100. You can see a slider below, that is positioned on the value 0 (initial value) on the left and on the value 50 (target value) on the right.



It is going to be your task to move as many sliders as possible to the value 50 within 120 seconds per round. You will get 48 sliders per round. You will play 3 rounds.

**Your overall performance is the sum of the correct positioned sliders in either of the three rounds.**

The supervisor as well as the subordinate has to perform the Slider Task. The subordinate will earn 1 Franc for each correct positioned slider and the supervisor will earn 2 Franc per correct positioned slider.

Continue

### Your Task – Slider Task (Continuation)

On the next screen you will see an example of the Slider Task. There are 48 sliders depicted from which four are exemplary positioned at the value 50.

During the Slider Task you will receive the following information on your screen:

- your remaining time to solve the task
- the number of sliders moved correctly
- the round

Later you will get the chance to practice the Slider Task before you begin with the actual task.

Continue

Remaining Time (sec): 116

**Example screen:** round x out of 3  
Amount of correct positioned sliders: 4

Continue

The following information was only provided in the treatment with sabotage

### Decision from the subordinate

The subordinate gets the chance to influence the supervisor's overall performance in the Slider Task and therefore his/her payment.

Thereby the subordinate can choose between 0% and 100%, which percentage of his/her own correct sliders will be subtracted from the supervisor's overall performance. He/She has to make this decision before starting the Slider Task and it will remain for all rounds.

The amount of sliders, that will be subtracted from the supervisors overall performance, are calculated as follows:

**Sum of the subordinate's correct positioned sliders \* percentage of the sliders that should be subtracted**

Continue

### Your payment

The decision on promotion as well as your performance in the Slider Task will determine the amount of your payment.

The supervisor will be paid twice as high as the subordinate. **However, the subordinate gets the chance to increase the payment difference between him/her and the supervisor.**

**Note: The payment of the subordinate and the supervisor cannot be less than 30 Franc because of the show-up fee.**

You will get more information about your payment on the next page.

Continue

**Your payment  
(Continuation)**

Subordinate:

Due to his/her role the subordinate gets half of the payment per correct positioned sliders in comparison to the supervisor. This equals 1 Franc per slider. Regardless of his/her performance he/she gets a show-up fee of 30 Franc.

Therefore, the payment is calculated as follows:

**Sum of the subordinate's correct positioned sliders from all rounds \* 1 Franc + 30 Franc**

Continue

**Your payment  
(Continuation)**

Supervisor:

Due to his/her role the supervisor gets an advance of 10 sliders compared to the subordinate. In addition, he/she gets twice of the payment per correct positioned slider compared to the subordinate. This equals 2 Franc per slider. Regardless of his/her performance he/she gets a show-up fee of 30 Franc.

The subordinate can choose in an area between 0-100% which amount of his/her own correctly positioned sliders he/she wants to remove from the supervisor's overall performance. This amount will influence the supervisor's overall result and payment negatively.

Therefore, the payment is calculated as follows:

**(Sum of the supervisor's correct positioned sliders from all rounds + 10 - sum of the subordinate's correct positioned sliders \* percentage of the sliders, that should be subtracted) \* 2 Franc + 30 Franc**

Continue

**Comprehension Questions**

Please answer the following comprehension questions!

Continue

1. Your job promotion depends on your performance in solving the mathematical calculations.	Yes / No
2. For each solved task you receive a different number of points depending on the calculation type.	Yes / No
3. You will lose one point for every wrong answer in the mathematical tasks.	Yes / No
4. One supervisor works together with two subordinates.	Yes / No
5. You will get 7 minutes to solve the exercises.	Yes / No
6. The mathematical tasks consist of the four basic arithmetic operations and their combination.	Yes / No
7. The Slider Task's goal is to move the slider to the number value 50.	Yes / No
8. You have 1 minute per round to move correctly 48 sliders.	Yes / No
9. Your payment depends on your performance in the Slider Task.	Yes / No
10. The subordinate is paid twice as much as the supervisor (per correct positioned slider).	Yes / No
11. The supervisor receives an advance in the form of sliders.	Yes / No
12. The subordinate's correct positioned sliders have a negative influence on the supervisor's payment to a certain extent chosen by the subordinate.	Yes / No

Continue



### Example

Please calculate the following payment examples to demonstrate that you understood the experiment.

Please enter the supervisor's and the subordinate's payments in the table. Please enter decimal numbers with dots instead of a comma.

Please calculate in Franc.

Reminder:

The subordinate's payment is calculated as follows:

**Sum of the subordinate's correct positioned sliders from all rounds \* 1 Franc + 30 Franc**

The supervisor's payment is calculated as follows:

**(Sum of the supervisor's correct positioned sliders from all rounds + 10 - sum of the subordinate's correct positioned sliders \* percentage of the sliders, that should be subtracted) \* 2 Franc + 30 Franc**

Continue

The following screen was only provided in the treatment with sabotage

	Example 1		Example 2	
	Subordinate	Supervisor	Subordinate	Supervisor
Sum of correct positioned sliders	20	30	40	60
Payment with 0 % deduction of sliders (incl. show-up fee)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Payment with 50% deduction of sliders (incl. show-up fee)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Payment with 100% deduction of sliders (incl. show-up fee)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Continue

The following screen was only provided in the treatment without sabotage

	Example 1		Example 2	
	Subordinate	Supervisor	Subordinate	Supervisor
Sum of correct positioned sliders	20	30	40	60
Payment (including show-up fee)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

**Next you have to solve mathematical problems in order to be promoted.  
You have 7 minutes to complete the exercises.**

This is an example screen for the mathematical task and it is repeated five times with different exercises.

$50 : 5 =$	<input type="text"/>	$172 + 584 =$	<input type="text"/>
$417 + 318 =$	<input type="text"/>	$75 * 2 =$	<input type="text"/>
$578 - 519 =$	<input type="text"/>	$27 - 208 =$	<input type="text"/>
$861 + 599 =$	<input type="text"/>	$908 - 974 =$	<input type="text"/>
$110 + 762 =$	<input type="text"/>	$543 + 37 =$	<input type="text"/>
$126 + 323 =$	<input type="text"/>	$734 + 117 =$	<input type="text"/>
$15 * 3 =$	<input type="text"/>	$672 - 47 =$	<input type="text"/>
$12 : 2 =$	<input type="text"/>	$8 * 7 =$	<input type="text"/>
$1 : 1 =$	<input type="text"/>	$605 + 283 =$	<input type="text"/>
$19 * 2 =$	<input type="text"/>	$30 * 3 =$	<input type="text"/>

Remaining time in seconds: 412

### Your role in the experiment (Supervisor)

You have scored 0 points, your partner have scored 4 points.

You solved the mathematical problems worse than your partner. Nevertheless, the company chose you to be the supervisor.

Fair promotion treatment: You have scored 4 points, your partner have scored 0 points.

You solved the mathematical problems better than your partner. Thus, the company chose you to be the supervisor.

### Your role in the experiment (Subordinate)

You have scored 4 points, your partner have scored 0 points.

You solved the mathematical problems better than your partner. Nevertheless, the company chose you to be the subordinate.

Fair promotion treatment: You have scored 0 points, your partner have scored 4 points.

You solved the mathematical problems worse than your partner. Thus, the company chose you to be the subordinate.

Continue

You will practice the Slider Task in one practice round before starting the actual Slider Task.

The practice round consists of 48 sliders and you have 120 seconds to move the actual slider correctly to the value of 50.

You and your partner each earn 1 Franc per correct positioned slider. After the practice round the payment function, that depends on your hierarchical position (supervisor or subordinate), applies as before.

Start practice  
round

Remaining Time (sec): 116

Amount of correct positioned slider: **Practice Round**  
0

Continue

You positioned 3 sliders correctly in the practice round.

**Therefore, at the end, you earn 3 Franc additionally to your payment.**

Continue

Please do the Slider Task now.

Note: You have 120 seconds to position sliders (up to a maximum amount of 48) to the value 50. There are three rounds.

Your overall performance is the result of all correct positioned sliders in each of the three rounds. You will get to know your payment amount at the end of the experiment.

Continue

The following information was only given to the supervisor in the treatment with sabotage

Before you solve the Slider Task the subordinate has to decide which percentage of his/her correctly positioned sliders he/she will subtract from your overall performance.

Start round 1

The following information was only given to the subordinate in the treatment with sabotage

Before you start the Slider Task, you have to decide which percentage of your correct positioned sliders in all three rounds will be subtracted from the supervisor's overall performance. Your decision applies to all three rounds.

Your decision and your performance in the Slider Task will determine how many sliders will be subtracted from the supervisor's sliders and therefore his/her payment.

Reminder: The amount of sliders subtracted from the supervisor is the result of:


**Sum of the subordinate's correct positioned sliders \* percentage of the sliders, that should be subtracted**

**Enter the integral value for the percentage between 0-100%.**

Start round 1

ReRemaining Time (sec): 117

Example screen: round 1 out of 3  
Amount of correct positioned sliders: 0



Continue

Your time has expanded. You positioned 9 sliders correctly.

In the next part of the experiment you have to make a decision about different distribution possibilities between you and another person.

Continue

### **Hypothetical decisions**

Please make the following hypothetical decisions independently of the other participants' choices.

You have to decide between different distributions of money between you and another person.

Your input has no influence on your previous decisions and your payment.

Afterwards, you have to answer a questionnaire and you will get to know your payment.

OK



Based on the SVO Slider the distribution preferences were asked for 15 different cases of distributions.

Please enter the distribution you prefer for the following situation.

You receive	85	85	85	85	85	85	85	85
Someone else receives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	85	76	68	59	50	41	33	24

OK

## Questionnaire

Seat number

Continue

Please indicate the extent to which you agree with the following statements. There are no wrong or right answers. Therefore, please indicate what you think best characterizes your response.

	<b>Strong disagreement</b>						<b>Strong agreement</b>	
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	
I enjoy working in situations involving competition with others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is important to me to perform better than others on a task.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that winning is important in both work and games.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It annoys me when other people perform better than I do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I try harder when I'm in competition with other people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

OK

Please indicate the extent to which you agree with the following statements. There are no wrong or right answers. Therefore, please indicate what you think best characterizes your response.

	<b>Strong disagreement</b>						<b>Strong agreement</b>	
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	
I'm always willing to actively help friends even if it consumes a lot of time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I donate blood regularly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I work voluntarily in charity.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I give a part of my monthly budget to charity organizations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I always offer my seat to elderly people when they had to stand in a train or bus otherwise.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm always willing to borrow valuable belongings even if I don't know the borrower well.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

OK

Please indicate the extent to which you agree with the following statements. There are no wrong or right answers. Therefore, please indicate what you think best characterizes your response.

	Strong disagreement			Strong agreement			
	1	2	3	4	5	6	7
I put a lot of effort in solving the mathematical task.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I had a strong influence on the decision based on the promotion process.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
During the promotion process ethical and moral standards were met.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think the promotion process was applied uniformly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think the promotion process was unbiased.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think the promotion process was based on correct information.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The explanation concerning the promotion process was transparent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall I feel like the promotion process was fair.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The promotion decision reflects the effort I put into the mathematical task.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

OK

Please indicate the extent to which you agree with the following statements. There are no wrong or right answers. Therefore, please indicate what you think best characterizes your response.

	Strong disagreement						Strong agreement	
	1	2	3	4	5	6	7	
It was important to me to be promoted.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I expected to be promoted.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The decision on promotion had a positive influence on my self-image.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoyed being the supervisor.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think it was fair that I was chosen to be the supervisor.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would have liked to be the subordinate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

OK

Please indicate the extent to which you agree with the following statements. There are no wrong or right answers. Therefore, please indicate what you think best characterizes your response.

	<b>Strong disagreement</b>						<b>Strong agreement</b>	
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	
It was important to me to be promoted.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I expected to be promoted.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The decision on promotion had a positive influence on my self-image.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoyed being the subordinate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think it was fair that I was chosen to be the subordinate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would have liked to be the supervisor.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

OK

Please indicate the extent to which you agree with the following statements. There are no wrong or right answers. Therefore, please indicate what you think best characterizes your response.

	<b>Strong disagreement</b>						<b>Strong agreement</b>	
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	
I felt frustrated after the promotion decision.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt sad after the promotion decision.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt angry after the promotion decision.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt hopeless after the promotion decision.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt guilty towards the subordinate after the promotion decision	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt shame after the promotion decision.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt happy after the promotion decision.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt proud after the promotion decision.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

OK



Please indicate the extent to which you agree with the following statements. There are no wrong or right answers. Therefore, please indicate what you think best characterizes your response.

	<b>Strong disagreement</b>						<b>Strong agreement</b>	
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	
I felt frustrated after the decision on promotion.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt sad after the decision on promotion.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt angry after the decision on promotion.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt hopeless after the decision on promotion.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt envy of the supervisor after the decision on promotion.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt admiration for the supervisor after the decision on promotion.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt shame after the decision on promotion.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt happy after the decision on promotion.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt proud after the decision on promotion.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

OK

Please indicate the extent to which you agree with the following statements. There are no wrong or right answers. Therefore, please indicate what you think best characterizes your response.

	<b>Strong disagreement</b>						<b>Strong agreement</b>	
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	
I attribute the promotion decision to my effort on the mathematical task.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I attribute the promotion decision to my skills.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I attribute the promotion decision to the task.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt like it was coincidence that I was chosen to be supervisor.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I attribute the promotion decision to the company's promotion system.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

OK

Please indicate the extent to which you agree with the following statements. There are no wrong or right answers. Therefore, please indicate what you think best characterizes your response.

	<b>Strong disagreement</b>					<b>Strong agreement</b>	
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
I attribute the promotion decision to my effort on the mathematical task.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I attribute the promotion decision to my skills.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I attribute the promotion decision to the task.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt like it was coincidence that I was chosen to be subordinate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I attribute the promotion decision to the supervisor.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I attribute the promotion decision to the company's promotion system.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

OK

Please indicate the extent to which you agree with the following statements. There are no wrong or right answers. Therefore, please indicate what you think best characterizes your response.

	<b>Strong disagreement</b>						<b>Strong agreement</b>	
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	
I had a strong influence on the result of the Slider Task.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think it is fair that I was higher rewarded than the subordinate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The results of the decision on promotion motivated me to put more effort into the Slider Task.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I put more effort into the Slider Task to get a higher payment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I put more effort into the Slider Task to solve the task well.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I put more effort into the Slider Task to compensate possible damage caused by the subordinate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I put less effort into the Slider Task to reduce the inequalities between the subordinate and me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I put less effort into the Slider Task because I had an advance comared to the subordinate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

OK

Please indicate the extent to which you agree with the following statements. There are no wrong or right answers. Therefore, please indicate what you think best characterizes your response.

	<b>Strong disagreement</b>						<b>Strong agreement</b>	
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	
I had a strong influence on the result of the Slider Task.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think it is fair that the supervisor was rewarded higher than me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The results of the decision on promotion motivated me to put more effort into the Slider Task.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I put more effort into the Slider Task to get a higher payment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I put more effort into the Slider Task to solve the task well.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I put more effort into the Slider Task to reduce the inequalities between the supervisor and me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

OK

The following questions were only asked in the treatment with sabotage.

Please indicate the extent to which you agree with the following statements. There are no wrong or right answers. Therefore, please indicate what you think best characterizes your response.

	<b>Strong disagreement</b>						<b>Strong agreement</b>	
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	
I put less effort to the Slider Task in order to not harm the supervisor.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The result of the promotion decision motivates me to harm the supervisor.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I wanted to harm the supervisor in order to take revenge on him/her.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I wanted to harm the supervisor in order to reduce the inequality between us.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Are there other reasons why you wanted to harm the supervisor? (maximum 100 characters)	<input type="text"/>							

OK

Please indicate the extent to which you agree with the following statements. There are no wrong or right answers. Therefore, please indicate what you think best characterizes your response.

	<b>Strong disagreement</b>						<b>Strong agreement</b>	
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	
When I envy others, I focus on how I can become equally successful in the future.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I wish that superior people lose their advantage.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I notice that another person is better than me, I try to improve myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Envyng others motivates me to accomplish my goals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If others have something that I want for myself, I wish to take it away from them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have a bad feeling towards people I envy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I strive to reach other people's superior achievements.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Envious feelings cause me to dislike the other person.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If someone has superior qualities, achievements, or possessions, I try to attain them for myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Seeing other people's achievements makes me dislike them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

OK

Please indicate the extent to which you agree with the following statements. There are no wrong or right answers. Therefore, please indicate what you think best characterizes your response.

	<b>Strong disagreement</b>						<b>Strong agreement</b>	
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	
Justice means to me that everyone is being rewarded proportional to his/her efforts.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Justice means to me that everyone gets an equal share.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am not comfortable with getting more than others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am not comfortable with getting less than others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

OK



Please indicate the extent to which you agree with the following statements. There are no wrong or right answers. Therefore, please indicate what you think best characterizes your response.

	<b>Strong disagreement</b>						<b>Strong agreement</b>	
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	
It is important to me what others think of me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recognition and respect by others is important to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is important to me to be able to influence others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

OK

Please enter how strong you agree with the following statements. There are no wrong or right answers. Therefore, please specify in which way the statements represent your attitude the most.

	<b>Strong disagreement</b>					<b>Strong agreement</b>	
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
I enjoyed participating in this experiment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I understood the instructions concerning the experiment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have the feeling that the staff that was present during the experiment influenced my answers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

OK

What is your gender?

- male
- female

What is your age?

What is your major area of study?

How many years of work experience for private / public firms do you have  
(including the time of your apprenticeship but not school or study times)?

OK

### **Your payment (Supervisor)**

You positioned 9 sliders in the Slider Task correctly. Additionally you receive 10 sliders. You receive 2 Franc per slider.

The subordinate chose to subtract 50 percent of his/her correct positioned sliders from yours. The subordinate positioned 4 sliders correctly. Therefore 2 sliders will be subtracted from yours.

Furthermore you receive 3 Franc from the practice round and the show-up fee of 30 Franc.

Therefore your payment is 67.00 Franc.

1 Franc equals 0.1 Euro so you receive 6.70 Euro.

Leave experiment

### **Your payment (Subordinate)**

You positioned 4 sliders correctly. You receive 1 Franc per slider.

Additionally you receive 1 Franc per practice round in the Slider Task and the show-up fee of 30 Franc.

Therefore your payment is 35.00 Franc.

1 Franc equals 0.1 Euro so you receive 3.5 Euro.

Leave experiment