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Honesty is the Strongest Policy

Can individual-norm following prevent the emergence of corruption?

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Abstract

Corruption scandals involving multinational companies are reported in the news on a yearly basis. The corruptive practices have a multitude of negative consequences for the companies, their clients and the rest of the world. Thus, the question remains what factors determine whether corruption will emerge. The present research studies the impact of trait-based rule adherence (i.e. individual factor) and group composition (i.e. situational factor) on the level of joint unethical acts in collaborative settings. As expected, the results indicate that individuals who tend to follow rules (i.e. rule-followers) engage in less dishonest behaviour than those with a tendency to defy rules (i.e. rule-breakers). However, group composition also affects one's willingness to behave unethically. More precisely, while the presence of rule-breakers does not affect the extent of unethical acts rule-followers exhibit, rule-breakers adapt to their surroundings. It seems that rule-followers do not send out clear invitations to lie which justify rule-breakers' unethical behaviour in collaborative settings. Consequently, rule-breakers engage in less dishonest acts in the presence of rule-followers. Thus, there is evidence that rule-followers can prevent the development of the norm of satisfying own self-interest and maintain the norm of honesty without the presence of sanctioning systems and introduction of punishment.

Keywords: trait-based rule adherence, rule-followers, rule-breakers, group composition, dishonest behaviour

Introduction

Every year we are confronted with multiple corruption scandals emerging all around the world from different corporations such as Enron, Tyco and Volkswagen. Enron was one of the largest energy trading companies voted “America’s Most Innovative Company” six consecutive years in a row by the business magazine Fortune. The company, however, misreported its financial situation by removing considerable debt off its balance sheet (Li, 2010). When the fraudulent practices were exposed, the company had to file for bankruptcy leading to one of the largest bankruptcy filings in the entire history of the US at the time. The scandal associated with Tyco, a security systems company, revolved around its CEO and CFO’s corporate theft and deception. The two were accused of giving themselves interest-free or low interest loans disguised as bonuses never approved by the board. The CEO and CFO’s corruptive practices such as security fraud, falsifying business records and conspiracy ended in the theft in the magnitude of \$600 million (Verschoor, 2006). Finally, the Volkswagen scandal, involving the manipulation of Volkswagen engine software so that it would pass key emission tests, resulted in both the loss of human lives and profit. The company incorporated the software in 11 million cars worldwide for six years. After their fraudulent practices were exposed, the company had to recall millions of cars. Volkswagen then experienced their first quarterly loss in 15 years of 2.5 billion euros. Moreover, the excess emissions produced by Volkswagen cars during these six years might lead to premature deaths and affect mortality rates (Barrett et al., 2015).

These companies and many others involved in corruptive practices, while different on the surface, share some commonality. Corruptive behaviour in all these cases involved people engaging in fraudulent practices to acquire monetary benefits. Such acts broke not only the companies’ policies but also the law. However, they also required multiple individuals willing to cooperate and coordinate the behaviours aimed at violating the rules. This raises the question what determines the likelihood an employee will behave unethically in the workplace. Factors that contribute to the willingness to engage in corruptive practices might be individual

characteristics and the environment in which the employee works. Thus, one might act fraudulently due to an individual trait to ignore and defy the rules, a company culture approving and promoting such behaviour or an interaction between the two.

People differ in their tendency to follow the rules (Gross & De Dreu, 2017). Some are more likely to adhere to societal rules and others tend to deviate from them. Hence, one might expect that individual's tendency to abide to the rules is associated to his or her likelihood of engaging in corruptive practices. For example, every Volkswagen employee was not equally likely to manipulate the engine software. Those with the tendency to disobey the rules might have also been more willing to engage in the fraudulent practice. However, is the likelihood of behaving unethically also a function of the social environment? Volkswagen engineers responsible for the engine software probably worked in teams. Thus, the employees differing in their rule-following tendencies had to coordinate and make a choice regarding the manipulation of the software. The question remains if the employees influenced each other's willingness to engage in corruptive practices. Did the majority of the team have to have a tendency to violate the rules for fraudulent behaviour to emerge? Or was a minority of engineers more likely to defy the rules enough to establish a prevailing unethical norm?

Thus, the main objective of this study is to gain insights into the transmission and dynamics of unethical behaviour. This research focuses on the impact of individual and situational characteristics on corruptive practices. More precisely, it studies the influence of trait-based rule adherence and group composition on the emergence of joint unethical acts. If we manage to understand how norms of unethical behaviour develop, we might find ways to prevent the emergence of corruption.

Social rules and norm-complying behaviour

Human societies revolve around norms which determine what behaviour is the most appropriate in social situations (Kimbrough & Vostroknutov, 2016). These implicit social rules develop through a repeated interaction between different individuals. Specifically, people

decide how they will act according to their current and previous experience with others (Young, 1996). Consequently, norms can develop and spread through the entire population by social learning (Sen & Airiau, 2007). Such social rules then play a large role in almost every aspect of our lives and govern our behaviour in a broad range of interpersonal settings.

Every day individuals encounter situations where they have a choice of following or violating a norm. On the one side, complying with social rules has a multitude of benefits. Norms allow individuals to predict other people's behaviours and avoid acting in ways that could lead to the exclusion from groups to which they belong (Gross & De Dreu, 2017). In addition, studies show that following these norms results in facilitation of coordination (Sen & Airiau, 2007). Therefore, people developed a preference for acting in accordance with societal rules. Specifically, human beings have a strong desire to maintain consistency between their behaviour, identity and cultural norms. There is evidence that when people judge their own behaviour, they compare it to internalized socially-defined norms and norm-complying behaviour then activates the brain centres implicated in processing of rewards (De Quervain, Fischbacher, Treyer, & Schellhammer, 2004; Kimbrough & Vostroknutov, 2016).

On the other side, breaking social rules can have positive consequences for the individual and the society as well. For example, teenage smoking behaviour is associated with the perception of social norms related to smoking (Eisenberg & Forster, 2003). However, teenagers who do not smoke despite high prevalence of smokers in their surroundings experience health and monetary benefits from their decision. Furthermore, women who first fought to participate in the labour market violated gender roles and social norms at the time. However, their actions had a profound impact on the equality of the entire society.

The decision to comply with or defy the norm is present in ethical dilemmas as well. When confronted with such dilemma, people have a choice between satisfying their self-interest by behaving unethically and maintaining their self-concept as honest individuals (Harris, Mussen, & Rutherford, 1976). For example, starting an affair or misreporting a financial

statement can result in emotional or monetary benefits. Thus, lying can be beneficial for a person. On the other hand, it is also morally wrong because telling the truth can be regarded as a moral rule. Hence, lying can impact individual's perception of themselves as an honest person (Shalvi, Dana, Handgraaf, & De Dreu, 2011). According to Mazar, Amir, and Ariely (2008a), maintaining an honest self-concept should be considered rewarding for an individual. On the other hand, changes in the self-concept resulting from lying could be considered highly aversive. Thus, dishonest behaviour is associated to psychological costs on the one side, and financial profits, emotional benefits and other personal advantages on the other.

Theory of Self-Concept Maintenance states that people solve this conflict by behaving in a way that will allow them to reap the benefits associated with immoral behaviour, but also to maintain their self-concept as honest individuals (Mazar et al., 2008a). Specifically, they will strike a balance between the two motivating forces. In a study conducted by Mazar et al. (2008a), the results indicate that people lie when given the opportunity to do so, although they do not take full advantage of their opportunity to cheat. More importantly, they do not update the part of their self-concept related to honesty despite knowing they overclaimed resources.

However, people vary in the degree to which they engage in dishonest behaviour as well as in the ease with which they can maintain their self-concept as honest individuals. This variation is determined by both personality and situational factors. Studies show that individual differences in the tendency to engage in dishonest behaviour could be explained by personal characteristics, differences in socialization and culture (Lewis, Carrera, Cullis, & Jones, 2009). A study conducted by Lewis et al. (2009) showed that the tendency to maximize one's outcomes is a personality characteristic unlikely to change over time. Furthermore, individuals are socialized differently at an earlier period of life when it comes to maximizing their income. For example, the process of socialization for men and women from an early age is not the same. They are raised to have different values and roles, and to think differently about a range of topics. One of these topics might be the appropriateness of maximizing own income. In

addition, culture also plays an important role in determining what behaviour one will perceive as moral. Such beliefs are reflected in cultural norms. Finally, the authors show that these three levels interact. People with a personality characteristic related to maximizing one's outcomes engage in tax evasion when given the opportunity. However, tax evasion was more common in Italy than in the UK. The authors explained that culture determines the acceptability of corruptive practices. Consequently, it impacts the likelihood an individual with high tendency to maximize own income will engage in tax evasion.

Therefore, personality is an important determinant for unethical acts. However, the likelihood one will exhibit fraudulent behaviour seems to also be influenced by situational context. The next sections explore personality and situational factors and consider their potential interactive effects on the emergence of dishonest behaviour.

Personality factors

Breaking the rules and behaving dishonestly can be beneficial for an individual. For example, academic plagiarism can result in higher grades while corporate theft is associated to monetary benefits. However, despite these positive consequences, not everyone is equally likely to exhibit unethical acts in the same situation. Studies, indeed, found that personality characteristics are associated to individual differences in the attitudes towards fraudulent acts and the tendency to engage in dishonest behaviour. For example, lower agreeableness, conscientiousness and intellect as well as emotional stability predicted positive attitudes towards shoplifting and unethical consumer behaviour (Egan & Taylor, 2010). Furthermore, there is evidence that demographic variables, academic orientation and academic self-efficacy predict academic dishonesty measured as cheating, plagiarism and falsification (Marsden, Carroll, & Neill, 2005). Thus, there is strong evidence that personality characteristics play a large role in the emergence of fraudulent behaviour.

One of the personality characteristics that could have an impact on the likelihood to act unethically might be trait-based rule adherence which is the focus of this research. Rules restrict

spontaneous approach behaviour. For example, misreporting a financial statement is punishable by law, thus interfering with the internal goal to obtain more monetary profits. However, people differ in the extent to which they act to achieve internal goals and to which they fear sanctions from violating the rules (Gross & De Dreu, 2017). Therefore, people experience distress when they are violating norms, but they differ in their level of sensitivity to norm violations. The implication is that those who are more sensitive to norm violations should be less likely to engage in fraudulent practices. It is likely that individuals scoring high on trait-based rule adherence follow established rules even when the behaviour is costly to them. On the other hand, those scoring low on trait-based rule adherence might be more likely to engage in self-serving activities even when they require rule-breaking behaviour (Gross & De Dreu, 2017).

People with high trait-based rule adherence have an inclination to follow rules, a behaviour that is often seen in individuals with high personal need for structure. Individuals scoring high on this characteristic tend to pay more attention to information relevant for and consistent with the structure, interpret ambiguous information as consistent with the structure and ignore structure inconsistent information (Neuberg & Newsom, 1993). Moreover, Rietzschel, De Dreu, and Nijstad (2007) found that high personal need for structure when combined with high levels of fear of invalidity impairs creativity and flexibility of creative performance. To specify, the combination impedes individual's ability to take a new perspective when confronted with a problem. Finally, there is evidence that individuals with high need for structure are behaviourally inflexible and that they prefer to utilize rules and schemata that have been proved useful and correct in the past (Gross & De Dreu, 2017).

Most importantly, it seems that people with high personal need for structure can influence others in their environment. The processes associated to high personal need for structure might end in a self-fulfilling prophecy during interactions with others. More precisely, since they behave in a structure-consistent manner, they might evoke structure-consistent behaviour from others (Neuberg & Newsom, 1993). This points to the potential importance of

situational factors for the emergence of unethical behaviour. Specifically, the environment could have an impact on innate tendencies to engage in fraudulent practices and consequently levels of dishonest behaviour individual exhibits.

Situational factors

According to the functionalist approach to morality, people judge morality of a certain behaviour in relation to the situation in which the behaviour appears (Weisel & Shalvi, 2015). That is, the behaviour that might be perceived as immoral in one instance, might be judged as moral in another. Therefore, the extent to which people engage in fraudulent practices depends on a multitude of situational characteristics. For example, a study conducted by Gino and Bazerman (2009) showed that people are more likely to accept unethical behaviour if this behaviour increases in magnitude over time than if the behaviour appears suddenly. Additionally, a decrease in self-control resources after an act of self-control makes people more likely to engage in unethical acts (Mead, Baumeister, Gino, Schweitzer, & Ariely, 2009).

One situational factor that impacts the perceived morality of the behaviour is collaboration with other people. In collaborative settings, individuals work together to achieve a common goal. As previously mentioned, Volkswagen engineers probably worked in teams whose goal was to improve the car's engine. However, fraudulent practices in collaborative settings increase not only individual profit, but the entire team's. Engineers confronted with a prospect of implementing the engine software designed to pass key emission tests had to make a choice between engaging in the fraudulent practice which would likely benefit the entire team or behaving honestly and sacrificing potential profits. Consequently, in collaborative situations, people are confronted with an additional conflict between two moral obligations – telling the truth and collaborating (Gino, Schweitzer, Mead, & Ariely, 2011). Both behaviours can be considered as a social norm; however, they create different incentives for honesty and should lead to either honest or dishonest behaviour.

In their study, Weisel and Shalvi (2015) used a sequential dyadic die-rolling paradigm

to demonstrate the effects of collaborative setting on the emergence of corruptive behaviour. The paradigm involves two players reporting the values of their die-roll to each other and results in payment if both players report the same value. The higher the reported value, the higher the payment they earn. Each player can misreport the outcome of the die-roll. However, while the first player dictates the potential value of their payment, the second player determines whether they actually receive it. Their results indicate that collaborative settings decrease the psychological costs of immoral acts because they benefit other people in addition to the individual in question. Thus, collaborative settings result in an increase in dishonest behaviour compared to individual settings (i.e. one player rolls the die and reports the outcome twice). Moreover, when individuals' incentives to lie are perfectly aligned, people cheat more than when either the first or the second player's incentives are increased or decreased.

In addition, according to Wiltermuth (2011), the perception of immorality of dishonest acts changes when it benefits others even though they might be complete strangers. Thus, people exhibit more unethical behaviour when it benefits others and this increase depends on the number of people that will experience the benefit (Gino, Ayal & Ariely, 2013). The phenomenon occurs for multiple reasons. Firstly, people do care about other people's outcomes (social utility) in addition to their own (non-social utility) (Loewenstein, Thompson & Bazerman, 1989). Secondly, when a dishonest behaviour benefits other, it provides an opportunity for people to justify their selfish and greedy behaviour. More precisely, it allows one to categorize his or her behaviour in positive terms and experience less guilt, thus, maintaining a moral self-image (López-Pérez, 2010). Mazar et al. (2008a) state that the process of categorization allows individuals to rationalize their actions without needing to modify their self-concept. Furthermore, the ease with which an action can be interpreted in a self-serving manner and the limit to which one can avoid categorizing an act as immoral (e.g. when it benefits other people) are important aspects of categorization.

Collaborative settings provide justifications for joint unethical acts and modify the

perception of morality of dishonest behaviour. However, they also include interaction between group members and coordination of their behaviour. These interactions then allow people to influence each other's behaviour. Weisel and Shalvi (2015) showed that observing dishonest behaviour of the first player in a dyadic die-rolling game acts as an "invitation to lie" for the second mover. That is, the perception of the first player behaving unethically provides justification for dishonest acts of the second player. Consequently, the second player increases own unethical behaviour. Further support for the notion that individuals are influenced by others in their environment can be found in an article written by López-Pérez (2009). According to the author, shame is an emotion likely to arise when a person experiences dissonance due to a transgression of an internalized norm other people follow. This emotion arises if other people respect the norm, but it's intensity diminishes if others deviate from the norm. Thus, The Law of Reciprocal Norm Compliance states that people comply with a norm only in the case most people in their surrounding respect the norm.

Therefore, collaborative settings not only decrease psychological costs associated with lying but also provide an opportunity for group members to influence each other. Hence, the environment (e.g. group composition) might indeed affect one's innate tendency to follow or break the rules.

Interaction of personality and situational factors

Situational and individual factors exhibit influence over the extent to which a person engages in dishonest behaviour both individually and in collaborative settings. As previously mentioned, in collaborative settings individuals interact and coordinate to obtain a certain goal. Thus, in such contexts, cheating can increase the profit of all the parties involved. However, not all group members are equally likely to engage in dishonest behaviour. Some people tend to adhere to established rules while others tend to break them to satisfy own self-interest. The question remains do individuals differing in the tendency to follow rules influence each other's willingness to act unethically. Therefore, the goal of this research is to test the influence and

possible interaction of trait-based rule adherence (i.e. individual factor) and group composition (i.e. situational factor) on the emergence of joint unethical acts in collaborative settings.

It is likely that trait-based rule adherence is associated to joint unethical acts in collaborative settings. Thus, if we divide people into two categories based on their tendency to adhere to social norms, individuals who have an inclination to follow the rules (i.e. rule-followers) should be more likely to comply with the norm of honesty and refrain from behaving unethically. On the contrary, those who tend to break rules (i.e. rule-breakers) should be more likely to act in accordance with the norm of self-interest and engage in dishonest acts. Thus, groups whose members are rule-followers should exhibit less unethical behaviour than groups whose members are rule-breakers.

However, it is difficult to predict the prevalence of joint dishonest behaviour in groups with uneven mixed compositions (i.e. groups consisting of a majority of rule-followers and a minority of rule-breakers and vice versa). If personality is the only factor driving unethical behaviour, one can expect a linear increase in the level of joint unethical acts with each additional rule-breaker present in the group. On the other hand, it is likely that members differing in the tendency to follow rules affect each other's behaviour. What is uncertain is whether their mutual influence results in an increase or a decrease of observed joint unethical acts. Thus, a non-directional hypothesis is presented stating that trait-based rule adherence and group composition will interact and affect the level of group dishonest behaviour. There are three possible outcomes: 1) the presence of rule-followers affects the behaviour of rule-breakers lowering the levels of joint unethical acts; 2) the presence of rule-breakers affects the behaviour of rule-followers increasing the levels of joint unethical acts; 3) rule-followers and rule-breakers affect each other to a similar extent and the level of joint unethical acts depends on the identity of the group majority.

Firstly, high trait-based rule adherence might be associated to the rigid and inflexible thinking and behaviour of those with high personal need for structure. Since there is evidence

that those with high personal need for structure can evoke structure-consistent behaviour in others (Neuberg & Newsom, 1993), the presence of rule-followers might induce a self-fulfilling prophecy. That is, their consistently honest behaviour might provoke rule-breakers to decrease the level of dishonest behaviour they exhibit.

Secondly, since studies show that observing one's dishonest behaviour acts as an "invitation to lie" (Weisel & Shalvi, 2015), the presence of rule-breakers and their continuously unethical actions might help rule-followers justify dishonest behaviour. The available justifications might result in an increase in the level of dishonest behaviour they exhibit.

Thirdly, according to the Law of Reciprocal Norm Compliance, the willingness to engage in dishonest behaviour might depend on the number of people exhibiting unethical practices in one's surrounding (López-Pérez, 2009). Specifically, in uneven mixed group composition, the level of dishonest behaviour might depend on whether the majority of the members are rule-followers or rule-breakers.

To answer the research question, a two-part experimental study was conducted. In the first stage of the experiment, participants were categorized as a rule-follower or a rule-breaker based on the scores of a ball-sorting task designed to measure trait-based rule adherence. In the second part, they engaged in a dyadic die-rolling game in groups of four which differed in their constellation. During the game, participants were able to cheat by misreporting the outcome of the die-roll which allowed to evaluate their level of dishonesty and test the impact of trait-based rule adherence and group constellation on the emergence of joint unethical acts in collaborative settings.

The present research shows that the level of dishonest behaviour does indeed depend on both the individual tendency to follow rules and group constellation. More precisely, rule-followers are less likely to engage in joint unethical acts than rule-breakers. However, even groups whose members have a high tendency to adhere to rules exhibit more dishonest behaviour than what is expected if they were completely honest. Furthermore, there is evidence

that rule-followers affect rule-breakers to a greater extent than vice versa. That is, a minority of those with a tendency to break rules is not enough to establish a prevailing norm of satisfying own self-interest. On the other hand, a minority of rule-followers affects the behaviour of rule-breakers and lowers the observed level of dishonest behaviour in collaborative settings. This finding suggests that the norm of honesty can be sustained in collaborative settings without the presence of sanctioning systems or the introduction of punishment for corruptive practices.

Method

Participants

One hundred sixty-eight people (39 male, 128 female, 1 other) participated in the study advertised as an “Interactive decision-making experiment” and their data was used to conduct the statistical analysis. The average age of participants was 22.45 years ($SD = 4.392$). They were recruited from University Leiden through website SONA and recruitment leaflets distributed around the University. There were no requirements for the participation in the study.

Procedure

An experimental lab study was conducted to test the influence of trait-based rule adherence and group composition on the group dynamics of joint unethical acts. The experiment consisted of two parts. The first part lasted 10 minutes, while the second was 30 minutes long. The second stage of the experiment began 4 weeks after the start of the first part. All participants read an informed consent before the experiment and were presented instructions on screen. The general instructions informed participants that the study is composed of two parts and that they will earn money based on their performance in each stage. One hundred ninety-five people participated in the first stage of the study. However, out of them, twenty-two were not able to return for the second part, one person participated in the first part two times and was not allowed to return, and four people participated in a group composition which was not included in the analysis. Therefore, one hundred sixty-eight people participated in both parts of the study.

Two programs were designed for two parts of the experiment. The first program

encompassed a ball-sorting task designed to measure their level of trait-based rule adherence, Personal Need for Structure Scale (Thompson, Naccarato, & Parker, 1989) and Social Value Orientation Questionnaire (Murphy, Ackermann, & Handgraaf, 2011). The second programme consisted of a dyadic die-rolling game and general questions related to their age, sex, study, home-country, reasons for participation, number of similar experiments they participated in, whether they received information about the experiment other than those written in the instructions and whether they believed that they interacted with real people.

First part of the experiment.

In the first part of the experiment, participants engaged in a ball-sorting task. In the task, participants were presented with 30 balls on screen. Their task was to individually allocate each ball between two differently-coloured buckets by dragging the ball with their mouse. In the instructions, it was stated that they will receive payment for each ball they allocate to the bucket. Dragging the ball to the blue bucket earned them 5 cents, while allocating the ball to the yellow bucket, earned them 10 cents. Therefore, the maximum amount of money they could earn was 3 euros. Participants then read that the game had only one rule – to place all balls in the blue bucket. Their final payment was based on the sum of the payments from the blue and the yellow bucket (Kimbrough and Vostroknutov, 2016). Above each bucket, participants were able to see how much money they accumulated based on the number of balls in the bucket. There were no negative consequences in case they defied the rule. Consequently, complying with the rule resulted in a smaller payment than dragging the balls to the yellow bucket, thus, deviating from the rule. This manipulation allowed to measure the level of trait-based rule adherence based on their behaviour. Specifically, the number of balls allocated in accordance with the rule was a measurement of the tendency to comply with or deviate from the established rule. Since following the rule provides participants with less monetary benefits than breaking the rule, only participants who are indeed intrinsically motivated to follow the rule, will do so.

After finishing the game, participants filled out a Personal Need for Structure Scale

(Thompson et al., 1989; see Appendix I). Personal Need for Structure Scale is a 12-item questionnaire with items like “I enjoy having a clear and structured mode of life” or “I become uncomfortable when the rules in a situation are not clear” (1 = strongly disagree, to 6 = strongly agree). Finally, they engaged in a task measuring their social value orientation using the SVO slider measure (Murphy et al., 2011). In the task, participants made six decisions how to allocate resources between them and another person by indicating which of the nine distribution of resources they would prefer the most. Based on their decisions, they were able to earn money, such that for every 100 points, they earned 10 cents. The maximum amount they could earn was 1 euro. The task is designed to measure the extent of individual’s concern for other’s outcomes. The decisions were aggregated in an individual value categorizing the participants as competitive, individualistic, prosocial, or altruistic.

Second part of the experiment.

Dyadic die-rolling paradigm.

For the second part of the experiment, a modified dyadic die-rolling game was used (Weisel & Shalvi, 2015). The game was fully incentivized and interactive. In the traditional version of the game, participants are instructed to play the game in pairs. The first player rolls the standard six-sided die and reports the outcome by clicking on submit. The second mover is then shown the number which the first mover reported. He or she then rolls the die and reports his or her outcome. After both players report their outcomes, they are shown the outcome of the game and their payment. However, participants earn money only in case first and second mover report the same value (i.e. reported double). When a double is reported, their payment is based on the value they both reported (e.g. they earn the reported value in euros). In case the first and second mover report different values, they do not earn money. Therefore, lying is reporting a value the participant did not roll. The consequence of lying is receiving different and probably higher payment than the one an individual would obtain in case he or she responded truthfully. Additionally, cheating requires coordination between the two parties. To

earn the maximum amount of money, the first player has to report the highest value (i.e. 6) and the second player must claim he or she rolled the same number. Their die-rolls are not observed by the experimenter and the participants understand that their dishonest behaviour will not be punished. Since there are no incentives for honesty and no punishment for cheating, adhering to the norm of honesty and refraining from engaging in dishonest behaviour is determined by intrinsic motivation of the individual to follow the norm.

Dyadic die-rolling paradigm in groups of four.

A modified version of the dyadic die-rolling paradigm was used in the present research. The main difference between the original and the modified version is that participants are part of a four-person group. That is, they play the game in pairs, however, they switch partners after each round. In total, participants played 30 rounds of the die-rolling game and they interacted with each group member exactly 10 times. The groups of four were created before the start of the second part of the experiment and differed in their constellations depending on the number of rule-followers and rule-breakers present in the group.

Participants were categorized as a rule-follower (i.e. H – high trait-based rule adherence) or a rule-breaker (L – low trait-based rule adherence) based on their scores on the ball-sorting task. After finishing the first part of the experiment, the scores indicating rule-following were split in two according to the median value. The participants with scores above the median value were termed rule-followers and the participants with scores below the median value were categorized as rule-breakers. Participants were then randomly assigned to one of four conditions: rule-following control group (HHHH), rule-breaking control group (LLLL), predominantly rule-following group (HHHL) and predominantly rule-breaking group (HLLL). In total there were 9 groups consisting of only rule-followers, 9 groups consisting of only rule-breakers, 12 groups consisting of predominately rule-followers and 12 groups consisting of predominately rule-breakers. The main idea was that the preference for following the rule in the ball-sorting task would impact contexts outside the one measuring the preference.

When participants arrived at the laboratory, they were quickly ushered into separate computer cubicles where experimenters taught them the correct way of rolling a die. Before the beginning of the game, participants read the rules of the game and the payment which they could receive. The rules of the game explained that they will be playing in groups of four and that they will switch their partners after each turn; however, not always in the same order. The rules of the game were as in the original version of the dyadic die-rolling paradigm. The first player rolls the die and reports the outcome which is then shown to the second player. The second mover is then allowed to roll the die and report the outcome. Afterwards, they are both shown their payment. The potential payment was determined based on the value they both report (i.e. 1 = €0.5; 2 = €1; 3 = €1.5; 4 = €2; 5 = €2.5; 6 = €3). Participants were paid according to the outcome of one of the thirty rounds which was chosen at random. Therefore, the maximum amount of money they were able to earn in the game was €3. Before starting the game, they filled out comprehension questions. The participants were not allowed to continue with the experiment until they solved the comprehension questions correctly. Participants could cheat by misreporting the outcome of the die-roll which allowed for the evaluation of their level of dishonesty. The measurements of the dishonest behaviour were reported values of the die-roll and the number of reported doubles. The development of norms (i.e. norm of honesty or norm of satisfying own interest) was considered as the agreement of the participants on the appropriate behaviour during the experiment. This norm-development was tacit since participants were unable to see or communicate with each other.

After finishing the dyadic die-rolling game, participants answered several general questions and were debriefed that the goal of the study was to evaluate the degree to which people follow rules and coordinate with others in breaking rules. The participants were instructed not to leave the cubicle when they were finished, but to wait until the experimenters led them outside. This step was taken to ensure the anonymity of the participants. The experimenter then asked them whether they want money or credits for participation.

Participants received payment of maximum 13.50 euros - 6.50 euros or 2 credits for participation, and a maximum of 7 euros based on their performance (i.e. maximum of 3 euros for the die-sorting task, maximum of 1 euro based on the social value orientation questionnaire and maximum of 3 euros for the dyadic die-rolling game).

Results

Description of the results

The tendency to follow rules, measured by the number of balls allocated in accordance with the rule, varies across participants. As seen in Figure 1, the scores range from 0 as the minimum value implying complete rule-breaking and 30 as the maximum value indicating complete rule-following. A minority of people completely followed or violated the rule (36.9%), while a majority (63.1%) strikes a balance by breaking the rule in some cases and following the rule in others. The results on the ball-sorting task have a mean value of 19.92 ($SD = 10.299$) and median value of 20.50. In addition, the distribution of the results has two peaks. 13.7% participants sorted 20 balls and 29.8% sorted all the balls in the box in accordance with the rule. Therefore, based on the percentage of the results it is noticeable that a majority of the people have a greater tendency to follow rules than to break them.

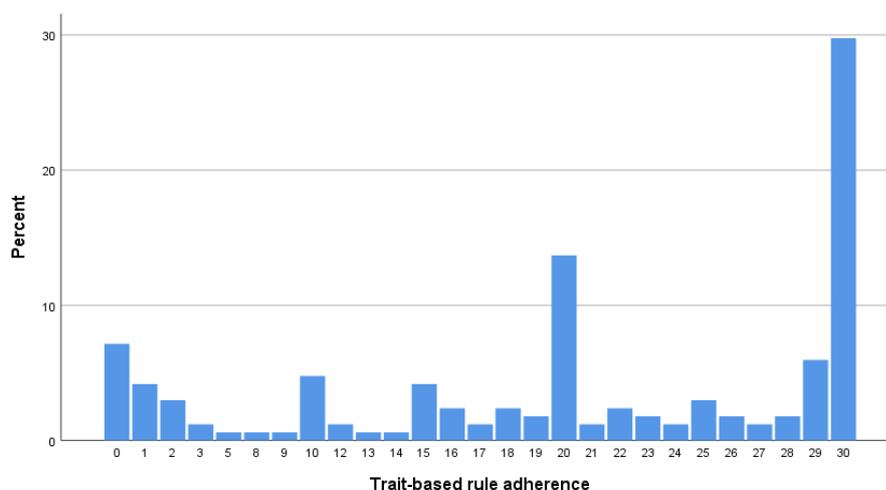


Figure 1. Percentage of participants as a function of the number of balls out of 30 they sorted in accordance with the rule.

As previously mentioned, there were four group compositions consisting of individuals with high trait-based rule adherence (H) and individuals with low trait-based rule adherence (L). The four compositions were as follows: rule-following control group (HHHH), rule-breaking control group (LLLL), predominantly rule-following group (HHHL) and predominantly rule-breaking group (HLLL). The two outcome variables measuring the level of dishonest behaviour were reported values and reported doubles. Reported values ranged from 1 to 6, while the values indicating reported doubles range from 0 to 1 and represent the percentage of reported doubles.

Table 1

Mean value of reported values and reported doubles depending on the group composition.

Composition	Mean values	
	Reported values	Reported doubles
HHHH	3.82	.37
HHHL	3.74	.38
LLLH	4.13	.50
LLLL	4.31	.64

As seen in Table 1, the mean of reported values of rule-following control groups ($M = 3.82$) is lower than the mean value of rule-breaking control groups ($M = 4.31$). Furthermore, there is a trend indicating an increase in the means of the reported values with the number of rule-breakers present in the group. Similarly, the mean value of reported doubles of rule-following control groups ($M = .37$) is lower than the mean value of rule-breaking control groups ($M = .64$). Furthermore, it is evident that the mean values of reported doubles per composition increase with the number of rule-breakers in the group. Therefore, based on the rank-order of the averages, one might conclude that personality factors alone drive the effect.

On the other hand, for personality factor to be the only one influencing the differences in mean values between each composition, one should observe a linear increase. Every additional rule-breaker present in the group should increase the level of dishonest behaviour equally. That is, the percentage change should be the same with every additional rule-breaker. Therefore, one might expect that the difference in reported values and reported doubles between rule-following control groups and predominantly rule-following groups is the same as the difference between rule-breaking control groups and predominantly rule-breaking groups. However, as seen in Table 1, the difference between mean values of rule-following control groups and predominantly rule-following groups is smaller than the difference between mean values of rule-breaking control groups and predominantly rule-breaking groups. This observation is true for both reported values and reported doubles. Interestingly, the mean value of predominantly rule-following group ($M = 3.74$) is lower than the value of rule-following control group ($M = 3.82$) for variable reported values. Hence, there seems to be an interaction of personality and social factors.

Hierarchical linear modelling

To test the interactive influence of trait-based rule adherence and group composition on the emergence of unethical acts in collaborative settings, hierarchical linear modelling was used to analyse the two outcome variables. This way, I accounted for possible interdependencies caused by the hierarchical structure of the data as well as the repeated measure. A restricted maximum likelihood linear mixed-model analysis was run on the variables reported values and reported doubles. This procedure adjusted the estimation of variance resulting in more conservative results. However, the specific model used was different for each variable.

Since each individual reported value was nested within dyads (i.e. any two same people playing the game together regardless of who was the first and who was the second mover) and then within groups (i.e. any four same people playing the dyadic die-rolling game together), both individuals and dyads were specified as random effects and round (30 rounds in total) as

a repeated measure. Group composition was treated as fixed effect in the model. On the other hand, reported doubles was a categorical variable with two possible scores (0 = double was not reported, 1 = double was reported). Therefore, to analyse this variable, scores in each round were first aggregated over individuals. A mixed model was then run treating group number (42 groups in total) as a random effect and group composition as fixed effect.

A significant main effect of group composition was found for both reported values, $F(3, 5004.618) = 30.55, p < .001$ as well as reported doubles, $F(3, 164) = 19.14, p < .001$. Reported values and the percentage of reported doubles increase with the numbers of rule-breakers present in the group.

Table 2

Estimates of fixed effects from hierarchical linear models for variables reported values and reported doubles.

		Estimate	Std.Error	t-value	Sig
Reported values	Intercept (LLLL)	4.32	.05	82.81	< .001
	HHHH	-.50	.07	-6.72	< .001
	HHHL	-.58	.07	-8.39	< .001
	LLLH	-.18	.07	-2.58	.010
Reported doubles	Intercept (LLLL)	.64	.03	21.58	< .001
	HHHH	-.27	.04	-6.50	< .001
	HHHL	-.25	.04	-6.49	< .001
	LLLH	-.14	.04	-3.48	.001

An overview of the fixed effects presented in Table 2 shows that rule-following control groups report .5 points lower values and 27% less doubles than rule-breaking control groups ($t(5004.618) = -6.72, p < .001$ and $t(164) = -6.50, p < .001$). Furthermore, the other two group constellations significantly differ from the rule-breaking control group as well. Predominantly rule-following groups report 0.58 points lower values and 25% less doubles than rule-breaking

control groups ($t(5004.618) = 8.39, p < .001$ and $t(164) = -6.49, p < .001$). Finally, predominantly rule-breaking groups report 0.18 points lower values and 14% less doubles than rule-breaking control groups ($t(5004.618) = -2.58, p < .001$ and $t(164) = -3.48, p < .001$).

Thus, there is evidence that trait-based rule adherence indeed affects the level of dishonest behaviour in collaborative settings. Not only do rule-following groups exhibit less dishonest behaviour than rule-breaking control groups, but it also seems that dishonest behaviour increases with the number of rule-breakers present in the group. However, to establish if there is an interaction between trait-based rule adherence and the environment on the level of joint unethical acts, I tested for significance of the difference between rule-following control groups and predominantly rule-following groups and the difference between rule-breaking control groups and predominantly rule-breaking groups. As previously mentioned, if there is no interaction effect, we would expect a linear increase in the dishonest behaviour with the number of rule-breakers present in the group. That is, one might expect that both differences should be significant.

However, if there is an interaction, at least one of the differences shouldn't be significant. That is, in accordance with the hypotheses, there are three possible outcomes:

- 1) A significant difference between rule-breaking control groups and predominantly rule-breaking groups, and a nonsignificant difference between rule-following control groups and predominantly rule-following groups;
- 2) A significant difference between rule-following control groups and predominantly rule-following groups, and a nonsignificant difference between rule-breaking control groups and predominantly rule-breaking groups;
- 3) Nonsignificant difference between both rule-following control groups and predominantly rule-following groups, and rule-breaking control groups and predominantly rule-breaking groups.

In one of these cases, one can presume that the environment has an impact on the innate tendencies associated with different levels of trait-based rule adherence. Thus, only by comparing the two differences we can establish the existence of an interaction.

Table 3

Mean difference, standard error and significance of planned comparisons for variables reported values and reported doubles.

		Mean difference	Std. Error	Significance
Reported values	HHHH-HHHL	.08	.069	.228
	LLLH-LLLL	-.18	.069	.010
Reported doubles	HHHH-HHHL	-.02	.039	.645
	LLLH-LLLL	-.14	.039	.001

As seen in Table 3, planned comparisons indicate that the comparisons between rule-following control groups and predominantly rule-following groups are not significant on both dependent variables - reported values ($p = .228$) and reported doubles ($p = .645$). Rule-following control groups report similar values and percentage of doubles ($M = 3.82$ and $M = .37$) as predominantly rule-following groups ($M = 3.74$ and $M = .38$). On the other hand, the differences between rule-breaking control groups and predominantly rule-breaking groups are significant on both dependent variables – reported values ($p = .010$) and reported doubles ($p = .001$). Rule-breaking control groups report higher values and more doubles ($M = 4.31$ and $M = .64$) than predominantly rule-breaking groups ($M = 4.13$ and $M = .64$). This suggests that a minority of rule-breakers does not have a significant impact on the levels of joint unethical acts in groups comprised of a rule-following majority. On the other hand, the presence of rule-followers can decrease the level of dishonest behaviour in groups comprised of a rule-breaking majority.

Comparison of rule-following control groups with values under complete honesty

Even though, my analysis so far revealed that a group of rule-followers misreported the die-roll outcomes significantly less than a group of rule-breakers, this does not imply that rule

followers are completely honest. Studies focusing on the emergence of dishonest behaviour indicate that people are more likely to engage in joint unethical acts in collaborative than in individual settings (Weisel & Shalvi, 2015). Therefore, it is likely that even groups consisting of rule-followers will engage in dishonest behaviour regardless of their high tendency to follow rules. To further investigate the levels of dishonest behaviour, I conducted a one-sample t-test comparing rule-following control groups with the values under condition of complete honesty. I aggregated the data over each individual and tested whether the participants as a group report higher values and more doubles than what is expected by chance. That is, I compared the distribution of outcomes to theoretical distributions under condition of complete honesty.

The differences between values and number of doubles reported by rule-following control groups and values and number of doubles expected under condition of complete honesty were statistically significant, $t(35) = 4.27, p < .001$ and $t(35) = 8.35, p < .001$. Rule-following control groups on average reported higher values ($M = 3.83, SD = .457$) than those expected under condition of complete honesty ($M = 3.50$). Furthermore, rule-following control groups had a higher percentage of reported doubles ($M = .37, SD = .17$) than those expected under condition of complete honesty ($M = .17$). These results show that even groups comprising of only rule-following individuals tend to engage in joint unethical acts in collaborative settings.

Potential underlying mechanisms

Based on the statistical analysis until this point, there is evidence that personality and situational factors interact and influence the level of dishonest behaviour in collaborative settings. More precisely, the presence of a rule-follower is enough to decrease the level of dishonest behaviour, while the presence of a rule-breaker does not affect the group level of joint unethical acts. The finding is in accordance with the hypothesis stating that rule-following would be positively associated to personal need for structure. Because individuals with high personal need for structure are behaviourally inflexible, they might contribute a self-fulfilling prophecy. That is, their rigid behaviour might induce rule-following behaviour in rule-breakers.

To test this hypothesis, I calculated a Pearson's correlation coefficient between variable personal need for structure and variables trait-based rule adherence, reported values and reported doubles. However, contrary to the hypothesis, none of the variables had a significant correlation with personal need for structure. Personal need for structure was not related to the value participants report, $r(168) = .069, p = .378$, the percentage of reported doubles, $r(168) = .055, p = .486$, or their level of trait-based rule adherence, $r(168) = -.066, p = .400$.

Thus, the question remains why the presence of rule-followers in groups results in a decrease in overall level of dishonest behaviour. It is possible that when rule-followers observe rule-breakers dishonest behaviour, it makes the dishonest behaviour salient. Studies show that in such cases, people start paying more attention to their moral standards which prevents them from engaging in any kind of dishonest behaviour (Gino, Ayal & Ariely, 2009). On the other hand, even though there is no evidence that the rule-following tendency is associated to personal need for structure, it is likely that rule-followers are indeed less behaviourally flexible than rule-breakers. Therefore, rule-breakers should be more influenced by their environment, that is, by the honest behaviour of the rule-followers. Both mechanisms would result in a decrease of joint unethical acts, however, while the first affects rule-followers, the second affects rule-breakers.

To test these assumptions, four t-tests were conducted comparing rule-breakers from the predominantly rule-following groups with rule-breakers from the rule-breaking control groups, and rule-followers from the predominantly rule-breaking groups with rule-followers from the rule-following control groups. The comparisons were conducted for both variables reported values and reported doubles. This allowed me to compare the scenarios where both rule-following and rule-breaking individuals were surrounded by their own type with situations where they were surrounded by the other type.

The differences between rule-followers from rule-following control groups and rule-followers from predominantly rule-breaking groups in reported values and reported doubles are not significant, $t(46) = -.42, p = .675$ and $t(46) = -1.91, p = .063$. Rule-followers from rule-

following control groups and predominantly rule-breaking groups reported similar values ($M = 3.83$ and $M = 3.90$) and number of doubles ($M = .37$ and $M = .47$). Thus, rule-followers from the two groups do not engage in different levels of dishonest behaviour.

On the other hand, the difference in reported values between rule-breakers from rule-breaking control groups and predominantly rule-following groups is statistically significant, $t(46) = -2.28, p = .03$. Rule-breakers from rule-breaking control groups reported higher values ($M = 4.31$) than rule-breakers from predominantly rule-following groups ($M = 3.86$). In addition, the difference in the number of reported doubles between rule-breakers from rule-breaking control groups and predominantly rule-following groups is statistically significant as well, $t(46) = -3.90, p = < .001$. Rule-breakers from rule-breaking control groups reported more doubles ($M = 3.86$) than rule-breakers from predominantly rule-following groups ($M = 4.31$). Thus, it seems that rule-followers indeed have a stronger influence on rule-breakers than vice versa. The presence of rule-followers results in a decrease of rule-breakers dishonest behaviour.

Discussion

The goal of this research was to study the impact of individual and situational characteristics on the transmission of unethical behaviour. More precisely, this study focused on the interactive effect of trait-based rule adherence and group composition on the level of joint unethical acts in collaborative settings. The results support the hypothesis that trait-based rule adherence is associated to dishonest behaviour. Specifically, groups whose members tend to follow rules (i.e. rule-followers) engaged in less dishonest behaviour than groups consisting of those who tend to defy rules (i.e. rule-breakers). This result corroborates the view that rule-followers experience a higher disutility from breaking both explicitly stated as well as moral rules which prevents them from engaging in unethical behaviour.

However, even groups whose members have high trait-based rule adherence do not always behave honestly. Rule-following control groups reported higher values and more doubles than what was expected under the condition of complete honesty. This finding is in

accordance with two previous studies. Firstly, Mazar et al. (2008a) proposed that people's ability to categorize their behaviour as moral has a threshold. That is, individuals can only act unethically to a certain extent before having to confront their dishonesty. Thus, even though people are aware that they cheat, they do not have to update their self-concept in terms of honesty unless they cross this threshold. Secondly, people are more likely to engage in unethical behaviour when it improves not only their own but also others' outcomes (Weisel & Shalvi, 2015). The likelihood of dishonest behaviour is even higher when individuals share these profits equally as was the case in the present study. Since the behaviour benefits others, it provides justification for the unethical action and reduces psychological costs associated with lying. More precisely, collaboration allows even individuals with high trait-based rule adherence to lie without crossing the aforementioned threshold and confronting their dishonesty.

Furthermore, a non-directional hypothesis was formulated stating that both individual (i.e. trait-based rule adherence) and situational characteristics (i.e. group composition) would interact and affect the level of dishonest behaviour. There were three possible outcomes. Firstly, it was proposed that rule-followers would affect rule-breakers, lowering their level of dishonest behaviour. Secondly, it was possible that rule-breakers would influence rule-followers, increasing their level of unethical acts. Final possibility was that rule-follower and rule-breakers affect each other to the same extent. Thus, the level of dishonest behaviour in uneven mixed compositions would depend on the identity of the group majority.

The results showed that trait-based rule adherence and group composition indeed interact and affect the decision to adhere to the norm of honesty or to satisfy own self-interest in collaborative settings. While the level of dishonest acts increased with the number of rule-breakers present in the group, this increase was not linear. Therefore, personality on its own could not explain the present findings. Instead, a minority of rule-breakers did not increase the level of unethical acts in groups with a rule-following majority compared to rule-following control groups. On the other hand, a minority of rule-followers decreased dishonest behaviour

in groups with a rule-breaking majority compared to rule-breaking control groups. Hence, social environment affected individual's willingness to engage in dishonest behaviour and, consequently, it influenced group levels of unethical acts.

It is necessary to consider and dismiss some of the potential explanations of the results. Firstly, since high trait-based rule adherence shares a multitude of commonalities with high personal need for structure, it seemed likely that the two concepts were related. Since individuals with high personal need for structure can induce structure-consistent behaviour from others (Neuberg & Newsom, 1993), the predominantly honest behaviour of rule-followers should have then resulted in a self-fulfilling prophecy. That is, rule-breakers should have exhibited less unethical acts. This pattern was indeed observed in the present study. Unfortunately, personal need for structure was not associated to rule-adherence, reported values or number of reported doubles and could not explain the present findings.

Therefore, the difference between the two concepts should be further studied. It might be that the tendency to follow rules does not necessarily mean one enjoys them and the structure they provide. In addition, it might be that trait-based rule adherence is more related to the norm of honesty than personal need for structure. In an environment where norms of satisfying own interest and collaborating are clear rules, individuals with high personal need for structure might be more likely to follow them than people with high trait-based rule adherence. Thus, future research should disentangle the similarities and differences between the two concepts.

Secondly, Weisel and Shalvi (2015) showed that, in addition to the collaborative setting, observing another person consistently engage in unethical acts provides an additional justification for one's dishonest behaviour. The presence of rule-breakers should have then contributed to rule-followers' increase in joint unethical acts and, consequently, more group dishonest behaviour. However, this pattern of results was not observed.

Thirdly, according to the Law of Reciprocal Norm Compliance (López-Pérez, 2009), there was a possibility that rule-followers and rule-breakers affect each other to a similar extent.

Thus, the group level of unethical acts would depend on the identity of the group majority. Since predominantly rule-breaking groups significantly differed from the rule-breaking control groups, this hypothesis received no support from the data.

Behavioural inflexibility and available justifications

The present research showed that the presence of rule-followers in mixed group compositions had a stronger affect on the level of joint unethical acts exhibited by the group than did the presence of rule-breakers. However, the question remained whether the observed pattern of results was a product of less unethical acts exhibited by rule-followers or rule-breakers. To test the impact of the environment on the individual willingness to engage in unethical acts, I compared dishonest behaviour exhibited by rule-followers and rule-breakers surrounded by either their own rule-following category or the opposite one.

Since it was established that even groups consisting of only rule-followers engaged in some dishonest behaviour, it was possible that rule-followers exhibited less unethical acts in mixed group compositions. Noticing rule-breakers' dishonest behaviours might have made such behaviours salient to the rule-followers. When a dishonest behaviour is made salient, people focus their attention to their moral standards and any unethical act results in the update of their self-concept. This makes people more reluctant to engage in such behaviours (Gino et al., 2009). Specifically, not even to the extent which allows one to retain his or her self-concept as an honest individual. However, this pattern was not observed. Rule-followers from predominantly rule-breaking groups reported similar values and number of doubles as rule-followers from rule-following control groups. On the contrary, rule-breakers from predominantly rule-following groups reported lower values and less doubles than rule-breakers from rule-breaking control groups.

Thus, potential underlying mechanism might be the difference in behavioural flexibility between rule-followers and rule-breakers. As previously mentioned, personal need for structure and trait-based rule adherence share some commonalities, one of which is inflexible behaviour.

Rule-followers might be less behaviourally flexible and more likely to follow rules even if it hurts their self-interest. Therefore, they should be less affected by their environment. On the contrary, rule-breakers might be more adaptive. Specifically, their decision to comply with or defy rules might be more influenced by available justifications for dishonest behaviour.

As previously stated, even rule-followers engaged in dishonest behaviour because collaborative settings provide justification for unethical acts. However, rule-breakers might allow themselves more leeway in terms of cheating than rule-followers. Rule-breakers might be able to engage in more self-serving rationalizations which reduce experienced guilt and help them maintain honest self-concepts despite breaking the rules (López-Pérez, 2010). While rule-followers can only lie to a certain extent despite the amount of available justifications, rule-breakers might be able to increase their dishonest behaviour with each additional justification. Noticing others consistently acting unethically should serve as an invitation to lie and act as an additional self-justification (Weisel & Shalvi, 2015). Since rule-followers follow rules most of the time, they do not send clear signals to rule-breakers that provide the necessary justification for unethical acts. Thus, rule-breakers can behave unethically to the extent they do not need to update their self-concept in terms of honesty. Therefore, the presence of individuals with high trait-based rule adherence can help maintain the norm of honesty and disrupt the emergence of corruption without the presence of sanctioning systems. It seems that in an environment without invitations to lie, even the rule-breakers follow the rules.

Limitations

Like any study, this one has limitations that need to be discussed. Firstly, the study was conducted inside a laboratory environment. This allowed for greater control over factors that might influence the behaviour; however, it also affected ecological validity. Research has shown that observed behaviour regarding a coin-toss in real-life situations does not differ significantly to the distribution of outcomes under condition of complete honesty. On the other hand, in lab experiments subjects engage in more lying regarding the outcomes of the coin toss

(Ablér, Becker, & Falk, 2014). It seems that the costs associated with lying are greater outside the laboratory environment because the familiar environment might make the identity and internal moral standards more salient. Therefore, it is possible that the overall level of dishonest behaviour would be lower outside the laboratory. However, the question remains if we would obtain the same pattern of results.

Furthermore, one of the limitations of the die-rolling paradigm is that one cannot know whether subjects actually lied. Lying was measured indirectly by comparing the distribution of outcomes to theoretical distributions under condition of complete honesty (Shalvi et al., 2011). However, the certainty that they were not being observed, that no one would be able to trace their answers back to them, and that their dishonest behaviour could not be discovered was a necessary condition to test the hypotheses.

Another limitation is associated to the method of categorization of participants as rule-followers or rule-breakers. As previously mentioned, participants first finished the die-sorting task and were then split into two groups based on the median value. There are several potential problems due to such categorization. Firstly, the median value was closer to the rule-following extreme making the definition of rule-breakers and rule-followers blurry. Specifically, is one a rule-breaker because he or she defies the rules or because he or she follows them less often? Secondly, some people who had the same score on the ball-sorting task belonged to different categories. Thus, it is difficult to say if the people around the median value actually belong to the category in which they were sorted. In the future, one can determine the value based on which the participants will be categorized prior to the experiment or choose the participants with extreme scores on both sides. However, this approach leads to a greater loss of participants in the second part of the experiment.

The final limitation is related to the sample itself and affects the generalizability of the findings. Even though Ablér et al. (2014) did not find that students differ from the general population regarding dishonest behaviour, the results of the study stem from students at an elite

university. Furthermore, the majority of the participants was from Western Europe. Studies show that culture is related to the prevalence of dishonest behaviour (Gino et al., 2009) and it might contribute to a different pattern of results.

Future research

According to Gino et al. (2009), the ethical culture is an important factor which determines the frequency of dishonest behaviour in groups and organisations. Cultural characteristics such as individualism and collectivism influence perception of people's moral responsibilities in these cultures (Gächter & Schulz, 2016). Consequently, they may have an impact on the prevalence of dishonest behaviour. Cultures with higher material security, which are generally more individualistic as well, tend to have less corruption than individuals from collectivistic and more traditional societies (Gächter & Schulz, 2016).

Furthermore, the prevalence of norm violations in a culture also affects the extent to which people are willing to follow rules (Gächter & Schulz, 2016). In cultures where norm violations are frequent and as such go unpunished, people might justify more easily their dishonest behaviour without having to change their self-concept as honest individuals. In addition, people are more likely to conform to norms and values exhibited by high-status individuals such as politicians (Gächter & Schulz, 2016). In a culture where such individuals engage in corruption or nepotism, it is likely to expect higher levels of dishonest behaviour in all parts of the society. Being surrounded by people exhibiting such unethical behaviour makes the behaviour more acceptable and may provoke parents to teach their children that the only way to succeed is to engage in the same behaviour (Gächter & Schulz, 2016).

Since most of the participants was from Western Europe, the findings of this study might not be replicated in a cross-cultural study. The culture's prevalence of rule-violating acts determines the willingness to break rules and the ease with which one can justify rule-breaking. Thus, one can expect different levels of dishonest behaviour in all groups depending on the culture. On the other hand, dishonesty can also become a well-respected norm in society.

Therefore, engaging in dishonest behaviour can be an act of rule-following. If this indeed is the case, we might expect a reversal of the present results. For this reason, it is necessary to replicate this experiment in other cultures to establish the robustness of these findings.

Theoretical significance and practical implications

The present study explored the dynamics of corruptive practices in collaborative settings and showed that both individual and situational characteristics play a role in the emergence of joint unethical acts. Due to the importance of the topic on both individual and social scale, it is necessary to discuss its theoretical significance as well as practical implications.

This research demonstrated that trait-based rule adherence has an impact on the amount of dishonest behaviour individual exhibits. As such, it contributes to the knowledge of the psychology of personality. The research distinguished personal need for structure from trait-based rule adherence and associated the latter, but not the former, with corruptive practices. Furthermore, it explored possible differences in characteristics of rule-breakers and rule-followers. It is possible that rule-breakers and rule-followers differ in the amount of self-serving rationalizations they can engage in to justify their dishonest behaviour. More precisely, while rule-followers can act dishonestly to a certain extent regardless of the amount of available justifications, rule-breakers allow themselves more leeway. That is, they can increase the level of dishonest behaviour with each additional justification.

Furthermore, the present research showed that group composition differing in the tendency to follow rules can indeed affect member's level of dishonest behaviour. Therefore, it adds value to the area of social psychology by emphasizing the importance and impact of the environment on one's innate tendencies and behaviours. Following prior research focusing on the importance of collaboration for the emergence of corruption, this study indeed shows that collaboration reduces psychological costs associated with dishonest behaviour for both rule-followers and rule-breakers. However, it adds an additional insight that the constellation of the environment does not affect rule-followers who tend to adhere to rules in most cases despite

others in their environment. However, social environment influences the behaviour of the rule-breakers depending on whether it provides them with justification for their dishonest acts.

Moreover, it adds another finding to the norm-development literature. As previously mentioned, collaborative settings decrease psychological costs associated with lying and contribute to the development of the norm of satisfying own self-interest. However, rule-followers are able to maintain the norm of honesty because they are less influenced by their environment. By not engaging in corruptive practices frequently, they prevent rule-breakers from justifying their behaviour. Thus, it seems that it is easier for rule-breakers to adapt to the norm of honesty than it is for rule-followers to develop the norm of satisfying own self-interest.

This leads to potential practical implications. The present findings indicate that the norm of honesty can be maintained without the presence of sanctioning systems. There is evidence that the presence of a rule-following minority is enough to decrease the level of dishonest behaviour without introduction of punishment. Only groups where all members are rule-breaker might demand heightened control over their behaviour and sanctioning systems. Without them, all the members might engage in group-serving behaviours. Such contexts might have been crucial for the emergence of corruption in large international companies such as Enron, Tyco or Volkswagen. Thus, even though behavioural flexibility is an attractive trait in employees, it has its disadvantages for companies. To prevent the emergence of corruption without the implementation of punishment for dishonest behaviour, employers should hire at least a minority of employees who tend to follow the rules despite their behavioural inflexibility.

Furthermore, in a company culture whose norms emphasize honesty, rule-breakers should adapt to their environment and refrain from dishonest behaviour. Cultural norms and the strength of one's moral standards have a profound influence on the level of dishonesty in which people engage (Mazar, Amir & Ariely, 2008b). Therefore, a company culture must promote high moral standards to strengthen its internalization and integrate them into the cultural norms. In such culture, even the rule-breakers will comply with the norm of honesty.

Finally, it seems that collaborative settings are contexts which allow individuals to find justifications for their dishonest behaviour. Thus, it might be possible to decrease the levels of joint unethical acts by emphasizing how dishonest acts will negatively affect the group. For example, emphasizing the long-term effects of corruption on the company might remove the available justifications. Asserting that corruptive practices have a negative impact on company's and personal reputation, clients and, consequently, profits might increase the psychological costs associated with unethical acts and help maintain the norm of honesty.

In his book *Lucifer Effect*, Zimbardo (2011) raises the question how ordinary and good people engage in horrendous acts. The book and his research resulted in a great deal of pessimism regarding human nature. However, this study shows that rule-followers seem to have a stronger effect on rule-breakers than vice versa. That is, it shows an optimistic finding that even the rule-breakers in the right environment can willingly adhere the norm of honesty.

Conclusion

The current work contributes to our understanding of unethical behaviour in collaborative settings by examining the interactive influence of trait-based rule adherence (individual factor) and group composition (situational factor). While individual's tendency to follow rules is associated to dishonest behaviour he or she exhibits, the presence of rule-followers inhibits rule-breakers from engaging in fraudulent practices. It seems that rule-followers do not provide rule-breakers with justifications for their unethical behaviour, thus, maintaining the norm of honesty. Therefore, individual rule-following tendency can prevent the development of the norm of satisfying own interest and the emergence of corruption without introduction of sanctioning systems. Since rule-breakers do not influence the level of unethical acts rule-followers exhibit, it seems that honesty indeed is the strongest policy.

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Appendix I

Personal Need for Structure Scale

Read each of the following statements and decide how much you agree with each according to your attitudes, beliefs, and experiences. It is important for you to realize that there are no "right" or "wrong" answers to these questions. People are different, and we are interested in how you feel.

Please respond according to the following 6-point scale:

- 1 = strongly disagree 4 = slightly agree
2 = moderately disagree 5 = moderately agree
3 = slightly disagree 6 = strongly agree

1. It upsets me to go into a situation without knowing what I can expect from it.
2. I'm not bothered by things that interrupt my daily routine.
3. I enjoy having a clear and structured mode of life.
4. I like to have a place for everything and everything in its place.
5. I enjoy being spontaneous.
6. I find that a well-ordered life with regular hours makes my life tedious.
7. I don't like situations that are uncertain.
8. I hate to change my plans at the last minute.
9. I hate to be with people who are unpredictable.
10. I find that a consistent routine enables me to enjoy life more.
11. I enjoy the exhilaration of being in unpredictable situations.
12. I become uncomfortable when the rules in a situation are not clear.