The Look Over Your Shoulder:

Unethical Behaviour Decreases in the Physical Presence of Observers

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Abstract

Research in behavioural ethics repeatedly emphasizes the importance of others for people's decisions to break ethical rules. Yet, in most lab experiments participants faced ethical dilemmas in full privacy settings. We conducted three experiments in which we compare such private set-ups to situations in which a second person is co-present in the lab. Study 1 manipulated whether that second person was a mere observer or co-benefitted from the participants' unethical behaviour. Study 2 investigated social proximity between participant and observer –being a friend versus a stranger. Study 3 tested whether the *mere* presence of another person who cannot observe the participant's behaviour suffices to decrease unethical behaviour. By using different behavioural paradigms of unethical behaviour, we obtain three main results: first, the presence of an *observing* other curbs unethical behaviour. Second, neither the payoff structure (Study 1) nor the social proximity towards the observing other (Study 2) qualifies this effect. Third, the mere presence of others does not reduce unethical behaviour if they do not observe the participant (Study 3). Implications, limitations and avenues for future research are discussed.

Keywords: unethical behaviour, cheating, bribery, social control, reputation, mere presence effect

The Look Over Your Shoulder: Unethical Behaviour Decreases in the Physical Presence of Observers

Remember when you as a child were faced with a tempting situation, like stealing a piece of candy that you were not allowed to eat. Picture it lying on the shelf, within reach. What was the first thing you did when deciding whether to take it or not? You likely looked over your shoulder to inspect the social environment for cues of other people being present. Seeing another person that is equipped with the authority to punish your misbehaviour – like a parent – probably greatly reduced the chances of you taking the candy. Yet, what if the other person has no such means to formally sanction, could not even see you but was simply present?

To find an answer to this question we turn to behavioural ethics, the branch of experimental research on human behaviour in ethical dilemmas – situations in which behaving ethically clashes with immanent self-interest (Eisenberger & Masterson, 1983; Gino, Schweitzer, Mead, & Ariely, 2011; Shalvi, Weisel, Kochavi-Gamliel, & Leib, 2016). Thanks to recent methodological advances, thousands of participants around the world have been placed in such trade-off situations to find out when and how people break ethical (and legal) rules (Abeler, Nosenzo, & Raymond, 2016; Ariely, 2012; Köbis, Verschuere, Bereby-Meyer, Rand, & Shalvi, forthcoming). One of the main conclusions stemming from extensive research is that many people cheat but only to the extent that they can justify it – to themselves but also to others (Shalvi, Gino, Barkan, & Ayal, 2015). Although these studies underline the importance of "others", the overwhelming majority have studied individuals in isolation and, if any, only used non-human cues of observation such as cameras or watching eyes (Cai, Huang, Wu, & Kou, 2015).

To fill that gap, we conducted three experiments that explore the effect of actual physical presence of others on unethical behaviour. We test whether unethical behaviour differs if the other person stands to gain from unethical behaviour or not (Study 1), is a friend versus a stranger (Study 2) and cannot even observe the participants' behaviour (Study 3). In

the following sections, we outline the theoretical underpinnings for this research and derive specific hypotheses.

How the presence of others impacts unethical behaviour

Let us briefly go back to the initial example: One main explanation why a child might forego the opportunity to take the candy when somebody is around lies in the other person's ability to formally sanction and punish. Authority and the means to sanction exert a deterrent effect on unethical behaviour (Becker, 1968). Hence, in the most extreme case, the other person discourages unethical behaviour directly through social control (Gottfredson & Hirschi, 1990). With a threat of punishment lurking in the back of the mind, the likelihood of violating an ethical norm drops significantly. For example, a parent in sight likely deters the tempted child to take the candy in fear of being scolded. This direct deterrent of potential punishment by others has been theoretically outlined (Treviño, 1986; Van Prooijen, 2018) and empirically illustrated: for example, people cheat less frequently if their behaviour is traceable and punishable by others (Mazar, Amir, & Ariely, 2008), such as by a supervisor (Pascual-Ezama, Prelec, & Dunfield, 2013). Hence, in the presence of others, who might (formally) sanction a wrong-doer, ethical misconduct decreases.

Would the presence of another person who has neither the means nor the authority to punish suffice to activate psychological mechanisms that curb unethical behaviour? One reason why unethical behaviour may diminish in the presence of another person who observes the behaviour lies in the immense importance that people generally ascribe to what others think of them (i.e. their reputation). People usually want to appear in a favourable light towards others (Goffman, 1959) and abide to the respective social norms (Köbis, Iragorri, & Starke, 2017; Reno, Cialdini, & Kallgren, 1993). Evolutionarily, this mutual monitoring of behaviour in a group has assured cooperation in societies, especially when controlling institutions are not available or unable to be effective (Alexander, 1987; D'Arms, 2000; Haidt, 2007).

Empirical findings show that reputational concerns can propel cooperation (Fehr & Fischbacher, 2003; Milinski, 2016; Van Vugt et al., 2007) and enforce social and moral norms (Haidt, 2003; McElreath & Boyd, 2008; Wu, Balliet, & Van Lange, 2016). They also impact unethical behaviour: people cheat less when they stand to lose their reputation (Ayal & Gino, 2011; Gino, Gu, & Zhong, 2009; Kroher & Wolbring, 2015) and conversely show a heightened willingness to engage in corruption when others do so as well (Bicchieri & Xiao, 2009; Köbis, van Prooijen, Righetti, & Van Lange, 2015). The concern for one's reputation and the salience of social norms increase when people's public self-awareness is activated – that is, when they feel observed by others (Batson, Thompson, Seuferling, Whitney, & Strongman, 1999; Wicklund, 1975).

Previous lab experiments have triggered public self-awareness in multiple ways. Some studies have used moral reminders like prompts stating "Don't be a cheater" (Shu, Gino, & Bazerman, 2011), while others have asked for personal identification of the participants to make them more aware of their identity (Diener, Fraser, Beaman, & Kelem, 1976). More recently, studies have investigated whether the mere image of eyes suffices to enhance norm adherence (Haley & Fessler, 2005). Although some studies suggested that cues of watching eyes can reduce selfish behaviour (Haley & Fessler, 2005; Manesi, Van Lange, & Pollet, 2016; Nettle et al., 2013), others find no effect of watching eyes images on altruism (Vogt, Efferson, Berger, & Fehr, 2015). Research specifically scrutinizing unethical behaviour suggest that the artificial social cues of watching eyes do not reduce unethical behaviour (Cai et al., 2015).

Hence, much of the previous research has made assumptions about these social factors of unethical behaviour without studying the actual presence of others. Conversely, classical research on social facilitation investigated how the presence of others influence people's behaviours (Binet & Henri, 1894; Stroebe, 2012; Triplett, 1898; Zajonc, 1965) mostly testing the performance on various task comparing a solitary experimental set-up to one in which another person is present with the actual participant (Guerin, 1993). However, the effect of the

physical presence of observing others has – to the best of our knowledge – not yet been investigated in the context of behavioural ethics. The present research was designed to fill this void – providing first empirical insights into (a) whether the physical presence of an observer reduces unethical behaviour and (b) the conditions under which this effect is more or less pronounced.

Study 1

A variety of moral temptations arise when other people are present. Think for example of free-riding in public transport or receiving too much change at the counter. Being alone versus having spectators around likely sways the moral compass. Although most often no formal means of sanctioning exist, the outlined theoretical accounts of reputational concerns and public self-awareness suggest that the importance of appearing moral towards others who can observe the respective behaviour lowers the levels of unethical behaviour. Hence our first hypothesis states:

> H1: People engage in more unethical behaviour when being alone compared to when another observing person is present.

Besides examining this main research question whether the presence of another person curbs the level of dishonesty, Study 1 tested whether the payoff structure for participant and observer matter. Would people be more willing to cheat if another person stands to gain from it? To test this question, we compare a set-up where the observer co-benefits from the participant's unethical behaviour to one where the other person remains unaffected by the participants' unethical behaviour. Previous theorizing suggests that local social utility, i.e. co-beneficiaries of unethical behaviour facilitates unethical choices (Köbis, van Prooijen, Righetti, & Van Lange, 2016). Empirical support stems from experiments that show amplified cheating levels when two participants co-benefit from collaborative cheating (Shalvi et al., 2016; Weisel & Shalvi, 2015). Other research shows that co-beneficiaries of dishonesty can

reduce experienced guilt (Gino, Ayal, & Ariely, 2013) and perceived unethicality of cheating (Wiltermuth, 2011), in particular when the other person is an in-group member (Shalvi & De Dreu 2014). Although our set-up differs in one important respect – the observer being *physically* present with the participant – based on the previous studies we nonetheless hypothesize the following:

> H2: Participants engage in more unethical behaviour when an observing person co-benefits from their unethical behaviour compared to when an observing person is unaffected by their unethical behaviour.

Methods

Participants. In total, 134 participants (M_{age} = 23.19, SD_{age} = 7.07; 61.2% = female) took part in a lab study and were randomly assigned to one of the three conditions (*alone*, *n* = 45; *observer*, *n* = 45; *co-beneficiary*, *n* = 44). We aimed for a pre-specified cell size of 45 participants per cell based on previous experiments using the die rolling task (see for example, Shalvi, Eldar, & Bereby-Meyer, 2012).

Measures

Die-Rolling Paradigm. We used a modified version of the well-validated die-rolling paradigm (Fischbacher & Föllmi-Heusi, 2013). In this paradigm, a person rolls a six-sided die in private. Since the die roll happened outside of the view of the experimenter, participants could misreport the number they rolled. The modifications to the original version of the die rolling paradigm were the following: (1) Instead of paying each number, only reporting a six yielded a reward of 1.5€; (2) instead of rolling the die under a cup, participants rolled a virtual die, similar to previous studies (e.g., Kocher, Schudy, & Spantig, 2018). The instructions informed participants that they would be forwarded to an external website (random.org) on which they could roll the die by clicking on a “throw die” button and report the rolled number

to the experimenter. The rules clearly instructed participants to only roll the die once. The program recorded the number of times they rolled the die.

Demographics. We assessed standard demographics of age, gender, education level, as well as additional exploratory measures (see data set). Unless noted otherwise, we do not find an effect for the demographic measures on the dependent variable (*ps* > .218). The entire data sets of all studies as well as the R code to reproduce the results are freely available online on the Open Science Framework via https://osf.io/wzxcv/ .

Procedure and Conditions. The experiment entailed three conditions. First, in the alone condition, participants engaged in the die-rolling task in full privacy. Second, in the observer condition participants engaged in the die-rolling task while a second person was present with them in the lab. This second person could observe their behaviour. Participants' reporting of the die roll did not affect the other person (= only the participant potentially won €1.5). Third, the co-beneficiary condition was identical to the observer condition, except that the other person gained the same amount of money as the participant upon reporting a six (= both participant and second person each won €1.5).

Participants enrolled via an intra-university sign-up system (Sona) for the experiment. Upon arrival in the lab, a research assistant led participants to a closed research cubicle. In the *alone* condition, participants gave informed consent and completed the tasks outlined below. In the two presence of another person conditions (*observer* and *co-beneficiary*), a second person was also led to the cubicle. This second person was always a female confederate who acted according to the same pre-defined script. Concretely, after the experimenter led both to the cubicle, the confederate sat about 50-80cm to the right side behind the participant so that she could observe the screen over the shoulder of the participant. The confederate furthermore abstained from any communication with the participant. If the participant addressed her with a remark or asked her directly for advice, the confederate always answered that she was not allowed to speak to the participant. As an explanation for the presence of the observer, the

experimenter merely stated this experiment required a second person to be present in the cubicle for the first part of the study. The experimenter also stated that further instructions would be given on the screen. Once the experimenter left and closed the door, participants took part in the die rolling task (outlined above). Afterwards, participants reported the number they rolled to the experimenter and were paid out in cash when reporting a six. In the two presence of another person conditions the other person left the cubicle. By themselves, the participants then filled in a short questionnaire entailing post-game questions. The experiment took less than 10 minutes to complete.

Data exclusion and ethical approval. The faculty's ethical review board (VCWE) of VU University approved all studies reported in this manuscript. Thus, in both studies participants signed a written informed consent form prior to the study, and were debriefed and thanked for their participation upon completion. Two observations were excluded because their reported number was not recorded. No extra data were collected after the data analysis had commenced.

Results

With only reported sixes resulting in financial rewards and the programs ability to record the number of die rolls, we are able to calculate an individual level cheating score. Similar to Shalvi and colleagues (2011), we operationalized cheating through rule-bending if participants rolled the die more than once and reported a "*6*".[1] Based on this classification we used the binary variable of cheating through rule-bending (0 = honesty; 1 = rule bending) as a dependent variable in a binary logistic regression model. Results comparing the *alone* condition to both presence of another person conditions collapsed reveals a significant difference (B = -1.524, *Wald* = -2.37, *Exp(B)* = 0.21, p = .018). Translated to odds ratios, this

[1] We also conducted analysis on the overall distribution of die rolls, which we report in the supplementary material. The results of this analysis are qualitatively similar, yet due to the higher statistical power, we merely report the rule bending analysis here.

means that the odds of cheating by rule bending were 4.45 times higher in the *alone* condition compared to the two *presence* conditions, which reflects a medium sized effect and supports the first hypothesis. Separate binary logistic regression analysis comparing the *alone* condition to both other conditions separately reveals that the difference between *alone* and *observer* condition is B = -1.537, *Wald* = -1.870, *Exp(B)* = 0.215, p = .062, while the difference between *alone* and the *co-beneficiary* condition was B = -1.513, *Wald* = -1.841, *Exp(B)* = 0.220, p = 0.66. Hence, separate group comparisons pointed in the expected direction but did not reach conventional levels of significance – one plausible reason being the low statistical power and infrequent occurrences of cheating through rule bending.

Table 1. Frequencies of cheating through rule bending across all three condition

	Honesty	Rule bending
Alone	35	8
Observer	43	2
Co-beneficiary	42	2

To substantiate the analysis, we additionally analyzed the number of clicks. Given the clear experimental instructions not to click more than once, repeated clicking serves as a measure of rule violations by participants. Linear regression analysis reveals significant differences in clicking between the *alone* condition and both other presence conditions combined (F(2, 132) = 6.758, t(132) = -2.600, p = .010). Although the studentized Breusch-Pagan test (Breusch & Pagan, 1979) examining hetereoskedasticity does not reach conventional significance level (*BP* (1, 132) = 3.719, p =.054), we nonetheless also ran the regression analysis with White's robust standard error estimations (White, 1980). The analysis

confirms the standard regression result, showing a significant difference in clicking levels between *alone* and both *presence* conditions ($t(132) = -2.102$, $p = .037$).

Regression analysis comparing all three conditions reveals that people clicked significantly more in the *alone* condition ($M = 4.46$, $SD = 7.75$) compared to the *observer* ($M = 2.13$, $SD = 4.55$, $t(88) = -2.407$, $p = .039$) and the *co-beneficiary* condition ($M = 1.75$, $SD = 1.90$, ($t(87) = -2.079$, $p = .017$), while no indication for heteroskdasticity exists ($BP = 4.108$, $p = .128$). Overall, we thus find twofold support for the first hypothesis that people are more willing to break ethical rules when alone compared to when in the presence of another person.

Testing the second hypothesis predicting that people would be more inclined to cheat when others stand to gain from it, we compared cheating levels in the *observer* and *co-beneficiary* conditions. We find no significant difference in the frequency of cheating through rule bending ($B = -0.023$, $Wald = -0.023$,, $p = .982$), nor in the number of clicks ($t(88) = 0.340$; $p = .734$). Hence, we find no support for Hypothesis 2.

Discussion

The results of Study 1 reveal two novel insights. For one, we find significantly more cheating when a person faces ethical temptations alone compared to in the presence of another person. Second, in contrast to our expectations, the results reveal that the stakes for the second person did not influence levels of cheating: People did not cheat more in the presence of a co-beneficiary compared to in the presence of a mere observer. One post-hoc interpretation may be that participants did not want to run the risk of being viewed as immoral, as the co-beneficiary was unknown to the participant and did not actively participate in cheating. It is especially the lack of participation that may explain why we did not find a local social utility effect, because past research in which the co-beneficiary did actively participate did reveal increases in unethical behavior (e.g., Weisel & Shalvi, 2015). Taken together, the findings underline the importance of reputational concerns.

Study 2

In Study 2, we move from generic forms of cheating to more societally impactful acts of unethical behaviour, namely corruption. Commonly defined as the abuse of entrusted power for private gains, corruption represents a key obstacle to the functioning of societies (Acemoglu & Robinson, 2012), leads to the depletion of natural resources (Ostrom, 2000) and reinforces (economic) inequalities (Stiglitz, 2012). At the same time, research on corruption that examines the social psychological elements such as the physical presence of others is relatively sparse (Heywood, 2018; Köbis, van Prooijen, Righetti, & Van Lange, 2016).

Besides testing the effect of physically present observers on people's inclination to act corruptly, Study 2 also aimed at gaining deeper insights into *how* others sway a person's moral compass. Therefore we designed an experiment to examine the quality of the relationship with that other person. To gain new insights into whether the social relationship between participants and observers matters, we manipulated the degree of proximity between the participant and the passive observer – either being a stranger like in previous research or as a novel treatment: a close friend. Previous research has argued that the relationship to the observing other greatly shapes people's behavioural inclinations. Namely, closer social ties towards the observer exert a stronger pro-social force on the behaviour of the decision-maker (Soetevent, 2005). In line with this account, meta-analytical evidence suggests that people care more about their reputation toward in-group members than strangers (Balliet, Wu, & De Dreu, 2014). This line of reasoning would predict lower levels of unethical behaviour in the presence of a friend (vs. a stranger) as behaviour visible to close others bears larger reputational concerns, hence:

> H3: People in the presence of a close other engage in less unethical behaviour than people in the presence of an unknown other.

However, a second opposing line of reasoning exists. The presence of a friend might unleash a person's unethical tendencies. Support for this argument stems from research showing that being around close versus distant others generally leads to more behavioural disinhibition (Prentice-Dunn & Rogers, 1982). Disinhibition, in turn, has been linked to unethical behaviour (for a review, see Lammers, Galinsky, Dubois, & Rucker, 2015). Knowing that a friend is peeking over the shoulder might disinhibit people to engage in behaviour that they otherwise abstain from doing, in this case offering a bribe. Thus, we formulate and test also a second competing hypothesis:

> $H3_{alt}$: People in the presence of a close other engage in more unethical behaviour than people in the presence of an unknown other.

Methods

Participants. In total, 96 participants (M_{age} = 22.60, SD_{age} = 2.55; 64.1% = female) took part in the study conducted in a psychology laboratory in the Netherlands. Based on previous studies using the same bribery corruption game (Köbis et al., 2017), we aimed for 35 participants per cell. Demographic information for seven participants was not recorded and coded as missing. Participants either received course credit or money (€2) as a compensation for participation.

Procedure and conditions. Participants first answered several questions unrelated to the purpose of this study and then played the corruption game in one of three experimental conditions. We asked all participants to bring a close same-sex friend with them to the lab. First, in the *friend* condition (n = 35), participants were led to a cubicle together with that friend and subsequently played the corruption game. Second, in the *stranger* condition (n = 30), we randomly paired participants with another participant who they did not know prior to the experiment. This pair was then led to the cubicle and the participant completed the study

under identical instructions as in the *friend* condition. In both conditions, the second person was instructed to stand behind the participant and observe the behaviour of the participant yet refrain from communicating or otherwise influencing the participant. Finally, akin to Study 1, in the *alone* condition, participants completed the tasks while being alone in the cubicle.

Measures

Bribery Corruption Game. We used a recently developed corruption game (Köbis et al., 2015; Köbis, et al., 2017) to examine corrupt behaviour. The basic structure of the game is a three-player auction game (see Figure 1). Two players which we call the competing players are endowed with a budget. To win a price, they each make competing bids to a third player (institution player). In the fair version of the game, this institution player allocates the price to the highest bidder. Credits not allocated in a bid are kept by the player. If both players offer the same bid, the price is split equally between the two. All possible outcomes of this bidding process are shown in a payoff matrix (see for more details SOM). The game is structured as such that bidding the entire budget for each round marks the dominant strategy, constituting the only strict Nash equilibrium. That means, that for both players allocating their entire endowment in the bidding yields the best payoff independent on the bid of the other player.

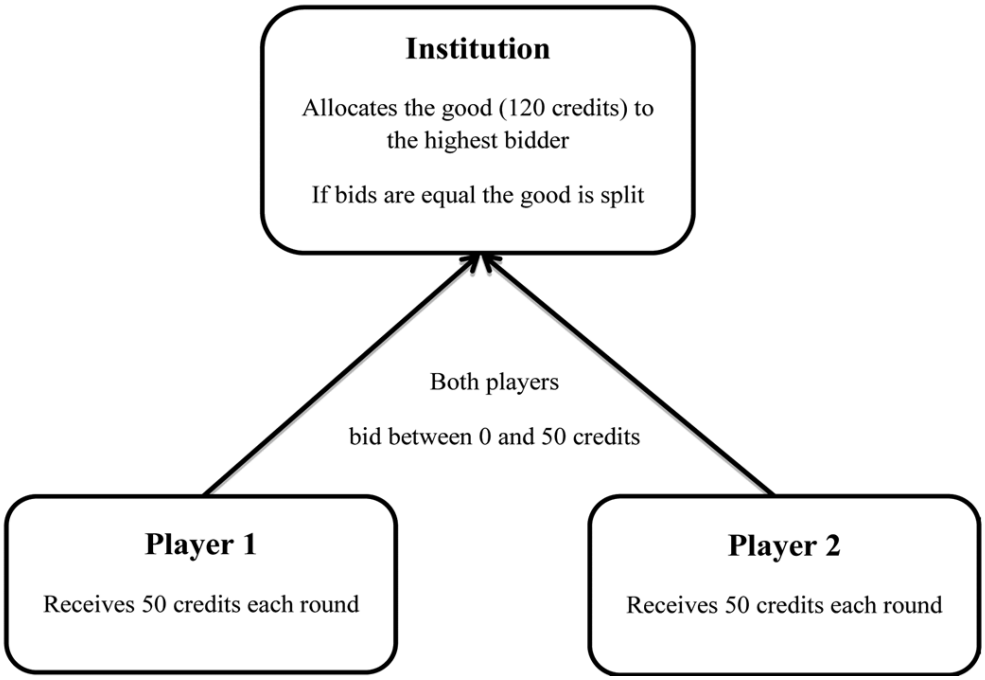

Figure 1. Basic structure of the bribery corruption game.

To transform the fair version of this auction game into a model of corruption we give one of the two competing players the chance to bribe the institution player. This bribe circumvents the even splitting of the good with the other bidding player. The other player does not have this option. The potentially corrupt player can thus decide to initiate a corrupt transaction with the Institution Player resulting in negative externalities for the second competing player.

The participant took the role of the potentially corrupt player. The other competing player as well as the institution player were simulated by a computer program to act strictly rational to reduce complexity. We addressed social desirability concerns and increased comprehensibility by translating the basic structure of the game into a real-life economic framework (Köbis et al., 2015; 2017). Hence, the competing players were asked to take the roles of CEOs of construction companies. The price was a construction contract. The institution player was labelled as the "Minister of Public Affairs. And most importantly, instead referring to the transfer as "bribes" we dubbed it "invitation to a private banquet". We

set up two test questions using example cases to ensure that participants sufficiently understood the rules of the game. Giving a wrong answer to the test questions resulted in the display of an explanation. The vast majority of the participants (> 88.0%) answered both questions correctly – independent of the condition they were in (p = .60). After making sure that participants understood the logic of the game, they faced the decision whether to bribe and thus to gain an advantage over the other player in the game. The only difference between the conditions was whether they made that decision in the presence of a friend, a stranger or alone in the cubicle.

Results

In the first step of the analysis, we again tested H1 comparing whether unethical behavior was more pronounced in the *alone* condition compared to both other conditions. A binary logistic regression revealed significant group differences (B = 1.17, *Wald* = 2.14, *Exp(B)* = 3.25, p = .032), supporting H1. Thus, the odds of bribing were 3.25 times higher when the participants faced this decision alone compared to when another person was with them in the cubicle. This can be classified as a small to medium effect size (see Chen, Cohen, & Chen, 2010).

Moreover, we conducted a binary logistic regression analysis using all three conditions (*friend* vs. *stranger* vs. *alone*) as a multi-categorical predictor. The analysis revealed significant group differences between the *alone* and *friend* condition (B = -1.243, *Wald* = -2.079, p = .038, *Exp(B)* = 0.288; see also Table 2). The odds of bribery were 3.47 times higher in the *alone* condition compared to the *friend* condition, reflecting a medium effect size. The difference between the *alone* and the *stranger* condition is B = -1.10, *Wald* = -1.78, p = .075, *Exp(B)* = 0.33, with the odds of bribery being 3.01 times higher when participants were alone than when an unknown other was present in the cubicle. Overall, we thus find empirical support for the first hypothesis: less ethical rule violations occur in the presence of other people compared to alone, in particular when the other person is a friend.

Table 2. Overview of the bribery decisions across the three treatments in Study 2.

Condition	Decision			
	No Bribery		Bribery	
	N	%	*N*	%
Alone	5	16.1	26	83.9
Friend	14	40.0	21	60.0
Stranger	11	36.7	19	63.3

Testing H3a and H3b by comparing the level of unethical behavior between the *friend* and the *stranger* condition, reveals no significant differences (*Exp(B)* = 1.15, p = .783). Neither supporting H3 nor $H3_{alt}$, the results suggest that people are equally likely to engage in unethical behavior in the presence of a friend or a stranger.

Discussion

Study 2 replicates and extends the findings of Study 1, providing additional evidence that people engage in more unethical behaviour (here, the initiation of a bribe, rather than lying as a form of cheating) when being alone compared to when another person directly observes their behaviour. In Study 2, the presence of an observing other reduced the frequency of bribes even though that other person again had no (formal) means of sanctioning the behaviour of the participant. While people were significantly more likely to engage in corruption when alone compared to when a friend peaked over their shoulder, the difference between being alone and in the presence of a stranger was not statistically significant. Moreover, we do not find group differences between friends and strangers.

Like in Study 1, it appears that our novel experimental set-up of combining behavioural ethics with physical presence of others leads to a cancellation of two previously identified forces: The higher reputational concern towards close others versus the disinhibiting effect that close others exert (Romano, Balliet, & Wu, 2017). The obtained

results provide first indications that the presence of another person reduces bribe levels in the game independent on the relationship to the other person. This finding is in line with previous research that shows no diminishing effect of deception when deceptive decisions are disclosed to strangers (Van de Ven & Villeval, 2015).

Study 3

Across two studies we find empirical support that the physical presence of observing others reduces people's inclination to break ethical rules. Study 3 explored the boundary conditions of this effect by testing whether the *mere* presence of another person suffices to reduce unethical behaviour. We therefore conducted a third experiment in which a second person was present in the lab. Yet this time, the second person could *not* observe the participants' decisions. This third study provides some information about whether the mere presence of a second person is enough to lower unethical behavior or whether the observation of the behavior is the crucial determinant.

The argument that the mere presence of others shapes human behavior has been repeatedly made in the literature (Parks, Joireman, & Van Lange, 2013), even going back to classical work in social psychology arguing that others' presence alone can set off a cascade of psychological processes such as diffusion of responsibility or audience inhibition (Latané & Darley, 1968). Another stream of research suggesting that minimal cues of being observed can influence behavior is the aforementioned research on "watching eyes" (Manesi et al., 2015). Taken together, these streams of research suggest that reputational concerns are easily triggered and at the same time can have discernable effects on human behavior.

However, in these instances and in our previous two experiments, presence and ability to observe are confounded. Little research has looked at presence of others who are *not* able to observe the behavior (for exceptions, see; Rajecki, Ickes, Corcoran, & Lenerz, 1977) and to the best of our knowledge no study has studied mere presence of others in the context of

unethical behavior. Based on previous theorizing, we therefore predict that a second person merely being present suffices to lower unethical behavioral inclinations:

H4: Participants engage in less unethical behavior in the mere presence of another person compared to when they are alone.

Methods

Participants. A total of 68 students (M_{age} = 21.99, SD_{age} = 2.6, 55.8% = female) took part in the experiment. Participants were recruited on campus and received both participation credits and a financial reward up to €16 depending on their behavior in the game. Participants were randomly assigned to the *alone* condition (n = 37) or the *mere presence* condition (n = 31), in which a second person was present with the participant in the room but could not see their behavior.

Measures

Embezzlement Game. All participants played a one-shot version of a corruption game that models embezzlement (see Iragorri-Carter, Dores Cruz, & Köbis, 2018). It is a four-player game consisting of two parts. The first part follows the basic procedure of a public goods game (Offerman, Sonnemans, & Schram, 1996), in which participants decide how to invest an endowment. They can choose between a private account (i.e. their own pockets) and a public account (i.e. an envelope that would be combined with other players' envelopes). While all money invested in the private account is theirs to keep, money in the public account is doubled by the experimenter. The second part deviates from a standard public goods game in that the public good is not (equally) distributed by the experimenter. Instead, a lottery determines which of the four participants will be entrusted with the public account. This person becomes the allocator and distributes the public account among all four participants (see for more details on the procedure below).

Extra Measures. As outlined in the accompanying data set (see https://osf.io/wzxcv/), we assessed several exploratory measures besides standard demographics. To assess whether self-favoring behavior in the game was perceived as corrupt we asked participants to rate the corruptness of their own behavior after the embezzlement game was finished (1 = not corrupt at all / 7 = very corrupt).

Procedure and Conditions. Upon arriving, the experimenter led the participant to the psychology interaction group lab. There, three other people, who belonged to the experimental staff, acted as fellow participants and were already seated. Each player was assigned to a player number and privately made the investment decisions. Next, the experimenter staged a lottery in which the actual participant always won, hence became the allocator. While the other three players were asked to leave the room to fill in post-game questionnaires in separate cubicles, the allocator was then instructed to remain in the room.

The amount contributed to the public account by the participant was multiplied by eight.[2] This rule was applied to create a public account size that suggested that all other players had contributed the same amount as the participant did, hence emphasizing an equal distribution norm. The participant then received an envelope containing this total public account, as well as four empty envelopes – one for each player. After the experimenter left the room, the allocator distributed the shared resource among all four players by placing the money in the respective envelopes.

In the *mere presence* condition, the experimenter informed the allocator, prior to the distribution decision, that the lab facilities were completely full and that one of the participants would have to complete the questionnaire in the group experiment room. To

[2] If the participant contributed nothing, the experimenter inserted €1.2 into the shared account as this represented the minimum size of the public account.

replicate previous studies on mere presence (Rajecki et al., 1977), this second person could not observe the allocators' decision. This second person sat with their back turned towards the allocator and was completing a questionnaire on a computer. Akin to Studies 1 and 2, communication between the two was not allowed. In the *alone* condition, the allocator decided in full privacy. Finally, participants filled in post-questionnaires, received their payoff, and were thanked and debriefed.

Results

The novel embezzlement game provides two indicators of corruption, according to current theories that conceptualize corruption as an impartiality violation of entrusted and shared resources (Kurer, 2005; Rothstein, 2014). First, as a binary variable of corruption, we employed a conservative criterion and categorized allocations of more than 30% to oneself as "corrupt", those below 30% as "non-corrupt". As a second outcome variable indicating the degree of corruption, we used the continuous variable of how much the allocator allocated to himself/herself.

On average, participants invested 67% of their endowment in the public account (*M* = €1.35, *SD* = 0.59) and, as allocators, kept on average 36% of the public resource for themselves (*M* = €3.77, *SD* = 2.88), while distributing the public account equally was the modal choice (66.7%, see also Figure 2). The more participants allocated to themselves, the more corrupt they perceived their own behaviour to be ($r = .68$, $p < .0001$).

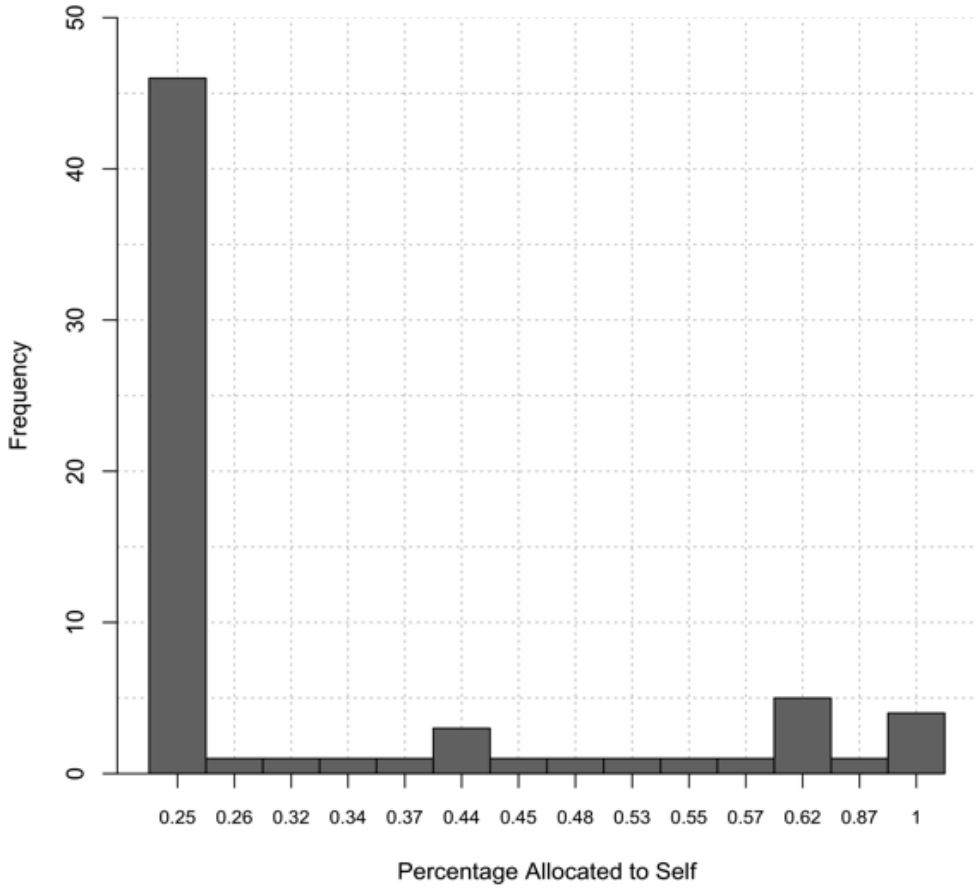

Figure 2. Histogram plotting the relative share of the public account that the allocator allocated to oneself and the frequency of each allocation decision.

To test the fourth hypothesis whether unethical behaviours is lower in the mere presence of others, we conducted a binary logistic regression using the condition as a dummy predictor variable on the binary corruption choice. The analysis revealed no significant effect (p =.822, see Figure 3).

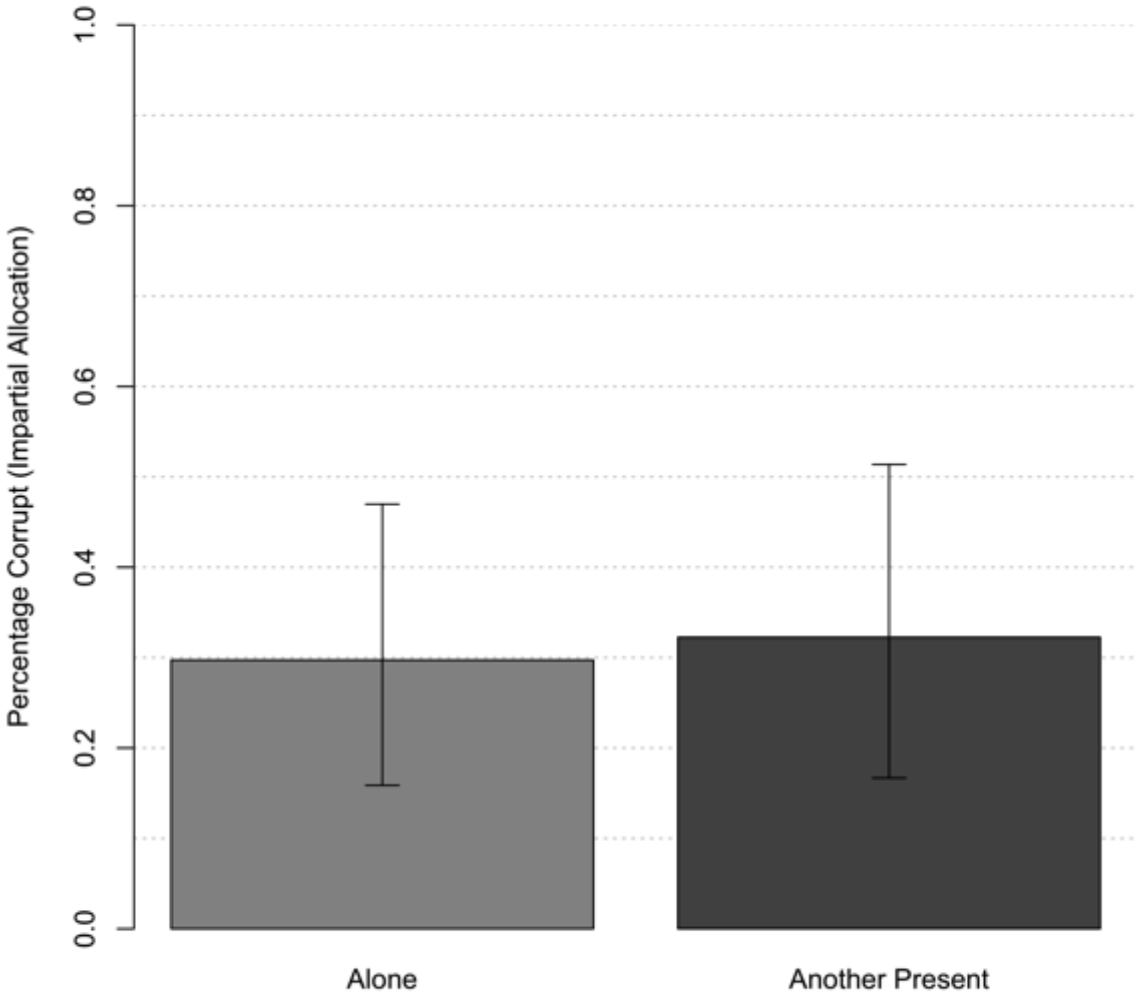

Figure 3. Bar plot of the percentage of corrupt decisions in the alone and presence of another condition. Error bars represent exact 95% binomial confidence interval.

Second, a linear regression with the same predictor on the degree of corruption also revealed no significant group differences ($p = .920$, see Figure 4). Hence, no differences appear in frequency and magnitude of corruption across both conditions, not confirming the fourth hypothesis.

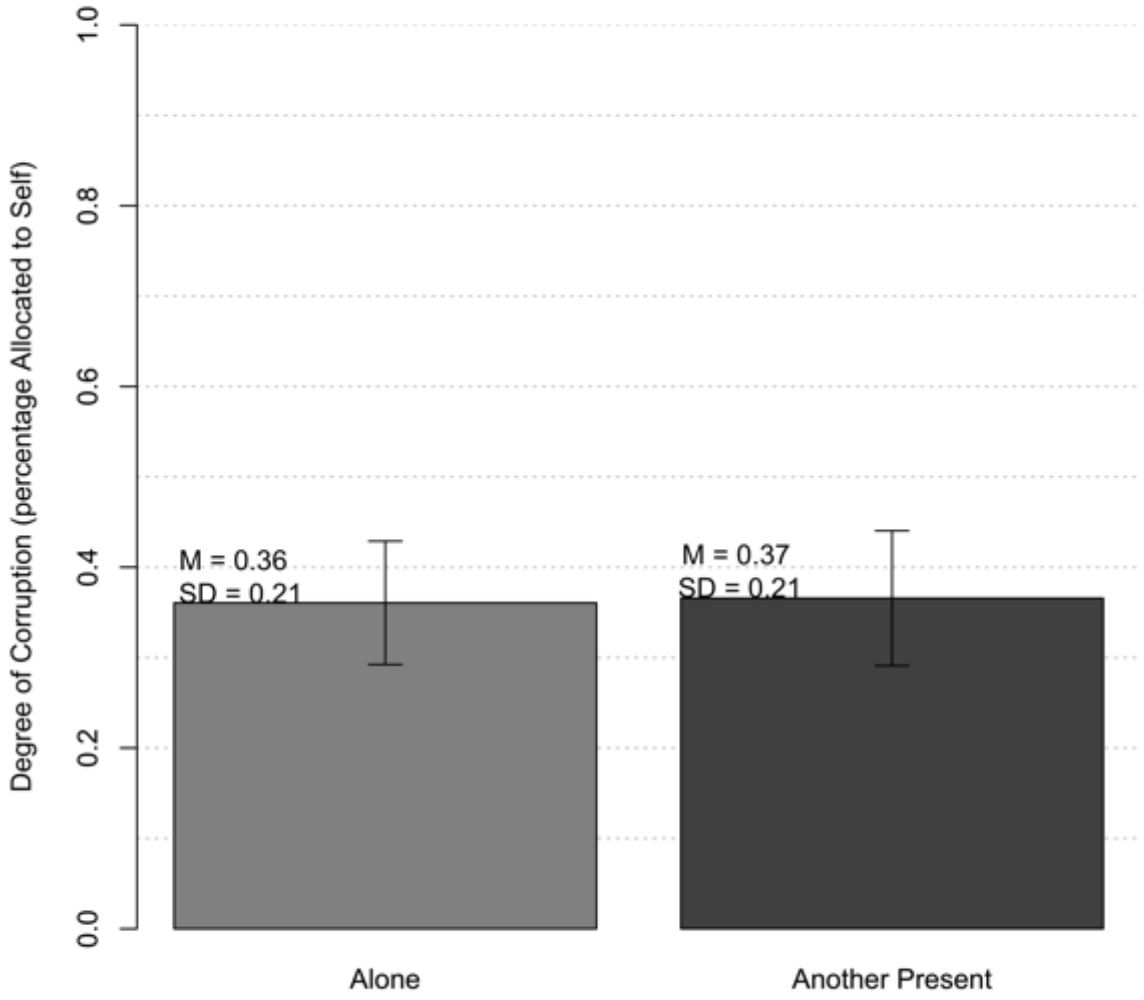

Figure 4. Bar plot of the mean degree of corruption in the alone and presence of another condition. Error bars represent 95% confidence interval.

Discussion

The results indicate that the mere presence of another person does not suffice to curb unethical behavior. Although participants did perceive selfish deviations from impartiality as more corrupt, being in the presence of another person did not influence their behavior. That is, people who face the choice to engage in corruption alone do so as often and as much as people who are facing this choice alone. The results of Study 3 therefore add credence to the view that it is the reputational component – and not the mere presence – of others who are physical present that curbs unethical behavior.

General Discussion

Taken together, the results of three experiments suggest that the physical presence of others reduces unethical behaviour, yet only if that other person can actually observe the behaviour. Even though the second person had no means to formally sanction wrong-doing, onlookers' presence curtailed unethical behaviour while the local social utility (*co-beneficiary* or *observer*, Study 1) and the level of proximity (*friend* vs. *stranger*, Study 2) played a less important role. When others are merely present without being able to observe, no such attenuating effect on unethical behaviour occurs (Study 3). Introducing the physical presence of another person to the rapidly growing stream of behavioural ethics research, our experiments provide some of the first empirical insights into the *actual* social aspects of unethical behaviour.

Humans are social animals who spend a substantial proportion of their time in company. Many decisions are made while being in the presence or in the gaze of others. At the same time, the overwhelming majority of lab experiments in behavioural ethics consists of individuals making decisions in isolation (for a meta-analysis, see Abeler et al., 2016). Also field experiments have sparsely looked at the impact of the tangible social elements of unethical behaviour (for a review, see Pierce & Balasubramanian, 2015). Nevertheless, the behavioural ethics literature emphasizes that appearing moral towards others is one of the main explanatory factor to explain when and how people break ethical rules (Mazar, Amir, & Ariely, 2008; Pillutla & Murnighan, 1995). Yet, so far behavioural research on the presence and observability of actual others remains sparse. Providing some of the first insights into how the physical presence of others shape our moral compass can contribute to the advancement of behavioural ethics and potentially inform the design of practical interventions.

So why exactly does the presence of an onlooker reduce unethical behaviour in the first two experiments? Being observed by others likely triggers the salience of reputational concerns, social norms and public self-awareness (van Bommel, van Prooijen, Elffers, & Van

Lange, 2012). When in the presence of another person who observes oneself one might simply be more aware and concerned about the prevalent social norms (Köbis, et al., 2016; Reno et al., 1993). Violating the existing social norms, results in reputational loss because both bribing a public official in the corruption game and deceiving the experimenter about the die roll in the die rolling paradigm are considered as unethical (Köbis et al., 2015; Shalvi et al., 2015). We find indirect evidence for this line of reasoning using two different paradigms. Yet, given that we do not find such corruption-reducing effects when the other person cannot observe the unethical deeds, it is conceivable that the activation of social norms and the threat of reputational loss is only activated upon actual scrutiny. Others being merely present does not seem sufficient to produce any effect. This finding fits squarely with research using poster with eye cues – Manesi and colleagues found a poster with eyes only influenced (prosocial) behaviour when the eyes were watching, yet not when they were closed or looking away (Manesi et al., 2016).

This promising trend allows for some speculative thoughts on ways in which unethical behavior in society can be reduced. One particularly effective tool may be to think in terms of rotating individuals operating in dyads rather than alone (Poerting & Vahlenkamp, 1998, however see also, Gross, Leib, Offerman, & Shalvi, 2018;). For example, those responsible for cash flow in organizations may work in dyads rather than alone. Or closer to home, it may be a wise policy for students and scientists to work together on data collection (and analysis). This may attenuate serious fraud but also more mundane bad practices. The physical presence of observers may perhaps also be psychologically extended to transparent office walls, such that people in fraud-sensitive environments have a stronger feel that others can see them. Generally, our findings suggest that removing the “illusion of anonymity” (Yap, 2016) could reduce the level of unethical behavior.

Limitations and future research

A first limitation worth mentioning is the choice to use different behavioural paradigms of unethical behaviour across the three studies. Such methodological heterogeneity represents a double-edged sword. On the positive side, it enables generalizability: Our results suggest that the presence of observing others curbs both cheating and bribery. On the downside, however, Study 3 entails a different form of unethical behaviour – embezzlement – and does not contain an observing other, and therefore we can neither conclude that the mere presence of others does not influence cheating and bribery, nor do we know if observing others reduce embezzlement. Yet, the fact that all tasks share substantial overlap in modelling a choice between self-favouring rule violations that come to a cost for others alleviates these concerns.

Moreover, due to the labour- -intense study designs which include the actual physical presence of another person, the studies focused on establishing main effects, not providing insights into moderating processes. Multiple moderating factors deserve empirical scrutiny in future studies. For example, which of the proposed mechanisms drives the effect: reputational concern, adherence to (salient) social norms, public self-awareness or a combination of all three? Moreover, how does the presence of another person compare to other previously used cues of public self-awareness like images of eyes on the wall or mirrors in the room? And, is the effect of observing others stronger in rural areas in which reputational concerns play on average a larger role compared to urban areas (Henrich et al., 2001)?

Conclusion

The present research emphasizes the importance of the *social* aspect in behavioural social science research, illuminating when the physical presence of another person does – or does not – reduce unethical behaviour. Experiments on corruption and cheating have largely limited their attention to decisions made in isolation (Serra & Wantchekon, 2012), while at the same time the roles of other people as role-models or “partners in crime” have become

increasingly recognized as powerful triggers of unethical behaviour (Gächter & Schulz, 2016; Gross et al., 2018; Weisel & Shalvi, 2015). As among the first experiments in the field, the present studies investigate unethical behaviour in the *actual* presence of others. It demonstrates a basic yet extremely relevant aspect of social life in general, and unethical behaviour in particular: the importance of the presence of other people who can see what we do. The studies on the *look over your shoulder* might be a first glance into how the presence of observing others influences people's inclinations to act unethically.

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