

Research Article

(09th April 2019)

WOULD YOU BRIBE YOUR LECTURER?

An international replication study on burnout and corruption in higher education

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Conflict of Interest: There are no conflicts of interest.

Funding: Nothing to declare.

Abstract

Corruption is a complex and critical issue in higher education (HE), causing severe economic and societal harm. Because of its delicacy and effects of social desirability, insights into the underlying causal mechanisms of HE bribery are virtually non-existent. This study investigates the connection between study related burnout and university students' willingness to offer bribes to their lecturers in order to pass important exams in Belgium, Germany and the Netherlands and whether ethical considerations influence this intent.

The findings are based on an innovative quasi-experimental research design in which graduate students ($N=624$) responded to systematically varied vignette-based scenarios revealing under which circumstances they found the use of different forms of bribery acceptable to achieve their ends.

Results show that students differentiate sharply between different shades of bribery and that a majority is okay with using emotional influence tactics to pass (failed) exams. In contrast, offering a helping hand or money to their lecturer was less acceptable. Furthermore, findings reveal a clear link between higher levels of burnout and the likelihood to demonstrate acts of bribery. Yet, we also found that a high commitment to the public interest might reduce the chances on engaging in acts of bribery.

In summary, this article provides solid empirical evidence that students are likely to use emotional influence tactics violating both the ethical codes of conduct and the formalized bureaucratic procedures of HE examination. Consequently, HE institutions might benefit from implementing the four-eye principle and from selective awareness campaigns that enable lecturers to better recognize these tactics and inform students about the unappropriated use of emotional influence tactics.

Keywords: Higher Education – Bribery – Burnout – Commitment to the Public Interest – Corruption

Introduction

Corruption is a substantial and severe problem in higher education (HE) worldwide. Literature shows that corruption is a cultural phenomenon deeply entrenched in the social, political, economic, and historical system of HE institutions (Johnson 2001; Heyneman 2011). Although corruption is often described as a “*victimless crime*”, von Arnim (2003) points out that this is, in fact, not true: Even though corruption – in contrast to other crimes like, for instance, robbery or murder – might not create *one* specific victim it is a crime that will always indirectly harm the welfare of a substantial number of people.

HE corruption involves acts of dishonest, unethical, and most often illegal behavior committed by both students and academic staff (Waite & Allen 2003; Chapman & Linder 2016). Among other forms, this behavior predominantly manifests in acts of bribery, for instance in buying personal favors and university degrees (Feoktistova 2014), undue promotion of faculty staff, and the corrupt management of public funds and public property (Osipian 2007). Other acts of HE corruption include embezzlement, fraud, patronage, favoritism, plagiarism, bureaucratic rule breaking, and ethical misconduct (Osipian 2007; 2008).

Among these manifold facets of HE corruption, bribery-acts committed by students attempting to influence their lecturers to their individual favor are likely to be the most serious issue since they enable people to receive HE degrees without the required intellectual capacities to effectively achieve them. As a result, incompetent and corrupt people might get access to powerful political and managerial positions (Heyneman et al. 2008). In this way, HE bribery is a fundamental problem for social coherence and public trust in political and governmental institutions (von Arnim 2003). Furthermore, on the long term, these acts are argued to also have a substantially negative effect on societal welfare since they threaten the quality of HE and the equal access to it (Osipian 2007). These acts also impede economic growth by relatively

slowing down the process of accumulating human capital of those left behind because they do not bribe, diminishing social progress, and inhibiting citizen equality (Osipian 2007; Heyneman 2011). Yet, because the damage done is distributed over a large quantity of people (i.e. all the students who do not bribe their lecturers will, hence, get no preferential treatment) estimating the exact extent and effect of HE bribery is a tough challenge (von Arnim 2003).

Since bribery is an illegal, unethical, and socially undesirable behavior, it is especially hard to study on the micro-level of individual behavior and empirical research is virtually non-existent despite its criticality (Waite & Allen 2003; Osipian 2007; 2008; Feoktistova 2014). This is particularly surprising since bribery is an alarming signal for the loss of HE's objectivity, its honesty, and of the ethical standards which lie at the very core of the traditional privileges and of the autonomy granted to institutions of HE by the general public (Altbach 2005; Heyneman 2011).

Given this severe lack of empirical research, the current study investigates the latent factors and motives why some students are more likely to engage in bribery-acts and how individual situational factors affect this likelihood. To better understand why some students would attempt to bribe their lecturer while others do not, we turn our attention towards its micro-behavioral (i.e. motivational and psychological) mechanisms. As such, we do not only aim to fill the gap of knowledge on personality aspects influencing the act of bribery in the HE context – see, for instance, Petrov, and Temple (2004) – but also – and more importantly – advance the field's theoretical insights on the antecedents of bribery. Consequently, the aim of the current study is to contribute to the micro-behavioral perspective of corruption in HE. As such, HE officials are able to better understand – and thus potentially prevent – acts of HE bribery in everyday interactions between students, lecturers, and staff.

The behavioral mechanisms that stand at the center of the current study originate from the current core of scholarship on bribery. In this way, this study sheds light onto the severely understudied phenomenon of micro-level bribery in HE from the grass-root, i.e. in the very peculiar situation of a private face-to-face consultation between lecturers and students in distress – a situation that is both very common and very likely to breed incentive and possibility for deviant behavior. Specifically, the current study seeks to find out whether university students find the use of bribery to achieve their individual study-related goals to be acceptable and whether the level of study-related distress – namely burnout (Misra et al. 2000) – influences this level of acceptability (Reynolds et al. 2013). More precisely, we argue that study-related burnout among students increases the chances on engaging in bribery since higher levels of burnout are associated with an increased likelihood of engaging in unethical behaviors (Everall & Paulson 2004). Furthermore, we follow prior ideas by Davis and Welton (1991), Glover et al. (1997), Fritz, Arnett, and Conkel (1999), and Moore (2007) by exploring whether students' commitment to the public interest moderates this likelihood, assuming that students who might feel emotionally drained by their studies would still refrain from engaging in bribery-acts if they hold a strong public values-related moral code.

These theoretical relationships are tested explicitly in the context of Western European countries because bribery in these countries is typified as illegal and unethical which implies that socially undesirable behavior might play an important role in obstructing empirical research. Consequently, empirical knowledge of HE-bribery within these countries is exceptionally scarce (Osipian 2007; 2008).

Respondents are students at three large public universities in three European countries: Belgium, the Netherlands, and Germany. The findings are based on a quasi-experimental research design in which the students' intent to bribe was measured with a pre-validated multi-

item factorial variable and systematically varied between-subject randomized vignette treatments. These vignettes differed regarding the seriousness of the bribery act to ensure sufficient contextual variance while being set in the typical situation of a one-to-one consultation between a student and a lecturer. These vignettes were complemented with a questionnaire on study-related burnout, commitment to the public interest, and attitude-based as well as socio-demographic control variables (risk propensity, gender, age, and field of study).

This original research design directly responds to recent appeals by Petrov and Temple (2004), Osipian (2008), and Chapman and Lindner (2016) for replicating studies by using experimental study designs and it comes with a number of key methodological advantages. First, this design employs a novel approach in the research field of HE by using a quasi-experimental method on the issue of HE bribery, allowing the identification of treatment-related causal mechanisms (Meyer, van Witteloostuijn, & Beugelsijk 2017). Second, by conducting corruption research in Western European countries, this project focuses on countries in which bribery in HE is often (falsely) perceived as a marginal problem (von Arnim 2003; Chapman & Lindner 2016), although it is likely that these countries' HE systems suffer from similar degrees of corruption as other OECD countries (Chapman & Lindner 2016). Third, since the findings of this study are based on a sample of university students in three countries, it ensures high internal and external reliability. Fourth, the findings of the study are not only relevant for academics, but also for practitioners who could refer to the results in order to develop more accurate awareness campaigns in order to ensure a more effective prevention of micro-level bribery in HE.

Theory

Bribery

Ramdani (2014: 1) defines bribery as “the corrupt payment, receipt, or solicitation of a private favor for actions or decisions from influential or powerful agents or authorities which could be

public officials, corporations or people inside corporations to generate private benefits of the briber.” Consequently, bribery involves two different agents: A briber tries to influence another agent, called the bribe-taker who has the power to perform a specific action in favor of the briber. In exchange for this action, the briber compensates the bribe-taker with incentives such as financial transfers, discounted access to services, or the prospect of similar reciprocal acts in the future (D’Andrade 1985). But the briber can also offer emotional stimuli that include the removal of undesirable sentiments such as guilt-feeling among the bribe-taker by soothing and reassuring narratives but also other emotional or physical gratifications (DesRoches 1995). Consequently, bribery is a transaction based on the prospect of a potentially reciprocal relationship between the bribe-offerer and the bribe-taker. This study takes the briber as the central point of interest since we are, firstly, especially interested in how HE students behave in situations of study-related stress in which they have the opportunity to offer a bribe to influence their lecturers’ decisions and, secondly, because the situation of eye-to-eye student-lecturer consultation creates an especially vulnerable space of discretion that can be abused to mantle corruption

The broader scientific discourse locates antecedents of bribery as mainly rooted in the socio-cultural, economic, ethical, and institutional environment (Osipian 2007; Ramdani & van Witteloostuijn 2012). While reliable evidence for Belgium, Germany, and the Netherlands is still missing, quantitative and qualitative data from Russia (Osipian 2007; Petrov & Temple 2004) and the countries of former Yugoslavia (Sabic-El-Rayess & Mansur 2016) show that next to plain monetary transactions, reciprocal bribery in the form of informal and non-monetary granting of favors is a very prevalent phenomenon in HE in these countries. Furthermore, Mohamedbhai (2016) studied bribery in HE-contexts in Africa, Australia, China, India, and Russia and refers to examples such as the transfer of money in exchange for a Ph.D. title, dubious promotions of professors, and the extortion of money for handouts and grades.

However, prior research by Martin et al. (2007), Ramdani and van Witteloostuijn (2012) and Jávör and Jancsics (2016) also emphasize the critical importance of individual micro-level attributes. Individual characteristics such as age, gender and education, but also personal risk preferences and psychological motivational factors such as stress and ethics are argued to have an effect on the likelihood that an individual will offer and / or accept bribes (Alatas et al. 2009; Nichols 2017). Yet, within the context of HE, there is only scant research that addresses these micro-level factors.

As a complex and multifaceted phenomenon, bribery comes in different shades of severity and visibility (Osipian 2007; Ramdani & van Witteloostuijn 2012). Heidenheimer (2009) for instance differentiates between *white*, *grey*, and *black* forms of bribery. *Black bribery* is what is the most direct form of exchanging money for any form of preferential treatment (i.e. the classic brown envelope in exchange for a favor). *Grey bribery* is also based on a direct reciprocal exchange between the briber and the receiver of the bribe. However, the trade is based on the exchange of non-monetary goods or services – often with temporal delay – and could, for instance, be characterized as students offering a “helping hand” to their professors. Osipian (2008) as well as Chapman and Lindner (2016) point out that reciprocity in the sense of an exchange of favors is just as much a common form of HE corruption as are monetary or nonmonetary forms of bribery. *White bribery* is the subtlest form of HE bribery because neither goods nor reciprocal services are exchanged for being granted a favor. In contrast, the briber (i.e. the student) uses emotional stimuli as a means to strategically manipulate another person who is in power (i.e. a professor or lecturer) to his or her advantage. In distress or if stakes are high, some people will go as far as to establish (fake and/or sexual) relationships to achieve their goal but softer forms such as crying, begging, and telling (fake) emotional family stories to cause compassion can also be subsumed under *white bribery* in HE (Chapman & Lindner 2016; Osipian 2007).

Following the Heidenheimer's (2009) differentiation and the notion of social desirability, we hypothesize that

Hypothesis 1 (H1): students are less likely to accept the use of darker shades of bribery (i.e. grey and black bribery) compared to lighter shades (i.e. white bribery).

Study-related Burnout

Being a university student can be extremely challenging. With the Bologna reforms in the early 2000s¹, students are increasingly faced with growing demands especially with a higher (perceived) quantitative work load and higher frequency of testing which can have devastating effects on students' emotional, social, and physical wellbeing. Following the stress-strain-outcome model, studies by Koeske and Koeske (1991) and Jacobs and Dodd (2003) revealed that study-related stress promoted by negative events such as failing exams was directly related to physical and psychological symptoms of burnout and a substantially higher likelihood of adverse outcomes such as intent to quit, poor academic performance (Schaufeli et al. 2002; Salanova et al. 2010), and low coping effectiveness (Dwyer & Cummings 2001; Gan et al. 2007). Yet, these strains and problems are not restricted to the context of European HE but affect university students worldwide. For instance, in a cross-sectional and longitudinal cohort study of more than 4,000 students in the U.S., Dyrbye et al. (2008) found that 49.6% suffered from symptoms of burnout which were also associated with severe psychological strains such as suicidal ideation (11.2% of students).

¹ The Bologna Process is a stream of extensive reforms affecting HE policies and institutions in Europe and beyond. The process aimed to streamline and consolidate the international HE system of Europe, to standardized HE qualifications, increase student mobility, and realize economies of scale and scope through international collaboration and synergies. In order to implement this harmonization process, many universities used polities informed by New Public Management – see e.g. Bessant et al. (2015) – effectively resulting in increased quantification and micro-structuring of formally flexible course systems, creating higher (perceived) workloads, more frequent examination and evaluation, as well as inter-class rankings, and performance indicators.

Unsurprisingly, the concept of study-related burnout in higher education has recently gained considerable scientific attention (Neumann et al. 1990; Koeske & Koeske 1991; Jacobs & Dodd 2003; Dyrbye et al. 2008; Salanova et al. 2009; Stoeber et al. 2011) but its key foundations date back to Freudenberger (1974). In his pioneering work, Freudenberger (1974) conducted case studies among volunteers engaged in health centers that treated people from drug and alcohol abuse to explore the specific demands of this engagement. Freudenberger (1974) defines the concept of burnout as an amalgamation of various negative symptoms such as exhaustion, deprivation, headache, irritation, and frustration that were all related to the strains of his sample's voluntary work. Later, Maslach et al. (1986) and Maslach and Leiter (1997) developed the concept of burnout further by defining it as a syndrome of emotional exhaustion, depersonalization, and reduced personal ability to cope with job and life demands. In this context, it is important to note that burnout specifically affects people who do not suffer from clinical psychological disorders (Schaufeli & Enzmann 1998). The current consensus is that burnout comprises three different but interacting dimensions: (1) *exhaustion*, i.e. a person's fatigue, (2) *cynism*, i.e. a person's indifference towards work, and (3) professional *efficacy*, which encompasses the loss of both social and non-social aspects of occupational accomplishments (Leiter & Schaufeli 1996). There are many reasons that explain why people develop burnout symptoms but the existing body of scholarship points out that workload does not solely drive this development (Leiter & Schaufeli 1996). Instead, developing burnout is especially likely in contexts in which people experience substantial levels of emotional stress in executing their tasks and in which people's perceived locus of control is relatively low (Schmitz, et al. 2000) – a situation typically for students in HE.

Burnout has gained considerable attention in the research field of human resource management, but in many cases findings are transferable to the context of HE (Jacob & Dodd 2003): Even though students are (mostly) not formally employed by their universities, following a structured

study program encompasses coercive activities such as mandatory class attention and submitting scheduled assignments that can be very well considered as work (Stoeber et al. 2011). Yet, research on the adverse effects of burnout on behavior in the research field of HE remains fairly limited. For instance, Ross et al. (1999), Misra et al. (2000), Jacobs and Dodd (2003), and Robotham and Julian (2006) provide quantitative evidence in which increased (perceived) workload in class and getting lower grades than anticipated are identified as major sources of stress, potentially leading to burnout and adverse behavior as desperate measures of coping. Based on a large sample of both students and lecturers in the U.S., Misra et al.'s (2000) found that study-related stress strongly invoked negative emotional responses and symptoms that are significantly associated with burnout, varying from severe fear, anxiety, worry or anger to crying, to abusing themselves and others physically and emotionally. Prior studies on deviant behavior on the workplace show that such negative affectivity and burnout are strongly correlated with a higher likelihood for unethical behavior in the workplace (Penney & Spector 2005; Robotham & Julian 2006). Following these findings, it is logical to assume that burnout could be directly related with higher chances of acting corruptly, especially when individuals are agitated about their current study-related environment, e.g. in situations of failure (Penney & Spector 2005). An extensive review on the origins and consequences of stress for HE students by Robotham and Julian (2006) underlines these results. Based on the current – although limited – scientific body of knowledge we hypothesize that:

Hypothesis 2 (H2): Students are more likely to engage in bribery when they are affected by burnout.

Commitment to the Public Interest

A large body of scholarship grounded in the theory of planned behavior argues that personal values, ethics, and pro-social motives play an important role in guiding individual behavior

(Kwon 2012; Kim & Kim 2016; Wright et al. 2016). More specifically, developing a strong moral code directed toward the immediate and long-term interests of society as a whole is argued to assist individuals in self-regulating their behavior toward honest and socially desirable behavior so that they become less likely to engage in bribery (Ajzen 1991; Davis & Welton 1991; Glover et al. 1997). One potential explanation on why individuals with high moral standards are less likely to engage in corruption is provided by Fritz, Arnett and Conkel (1999) who observed that people characterized by high ethical standards were more committed to the public interest in general. This commitment enabled them to more effectively resist exploiting opportunities that might allow them to serve their own individual interests to the disadvantage to society, which include acts of bribery. This indicates that an individual's level of commitment toward the greater interests of society might play an important role in explaining whether or not some individuals engage in bribery. Consequently, we assume that students with a high commitment to the public interest (CPI) are less likely to engage in bribery even if they are at the edge of experiencing a burnout. We hypothesize that

Hypothesis 3 (H3): The relationship between burnout and students' likelihood to bribe is moderated by students' commitment to the public interest.

Methodological Approach

Quasi-experimental Research Design

As a very delicate issue, bribery is hard to measure because respondents are likely to consciously or unconsciously conform to norms of social desirability which will bias their response to explicit questions related to their likelihood to bribe and to accept bribes even in

the anonymity of online surveys (Petrov & Temple 2004). Quantitative quasi-experiments² using vignette-based treatments can be especially valuable in this context because they help reveal the (latent) mechanisms that determine people's likelihood to engage in bribery by circumventing this response bias in an elegant way: Vignettes are stimuli in the form of narrative scenarios that ask participants to imagine being *another* person, who has to act and make decisions within this certain context as specified within the narrative of the vignette (Hughes & Huby 2004). By asking respondents to state what this other person would or should do, effects of social desirability bias are greatly reduced because the (implicit) psychological burden of being the singled-out decision maker is greatly reduced for the respondent. Thus, vignettes have the power to systematically manipulate and trigger context-dependent behavior at high degrees of both internal and external validity (Aguines & Bradley 2014).

The current study involves three quasi-experimental vignette treatments that differ regarding the information given to describe the form of corruption (see appendix A.1 for full detail). The vignettes were carefully designed by an international team of researchers to represent Heidenheimer's (2009) and Ramdani and van Witteloostuijn's (2012) three shades of corruption, ranging from *white* to *grey* and to *black* forms of bribery but within the specific context of HE. They comprise scenarios in which respondents are in the active role of a student proposing a specific form of a bribe to a lecturer in exchange for the reconsideration of an important exam score. The first vignette represents *white bribery* in the form of begging, crying, and getting emotional in order to persuade the lecturer to reconsider the grade. The second

² We label the research design of this study as a *quasi-experimental* design because we only randomized the treatment across respondents. In a full experiment, the different outcome-levels of the independent variable would also have to be randomized to strictly control for variance of this variable within treatment groups a-priori and assign treatments in a balanced way. In the scope of the current study, this is tricky because the independent variable of CPI is nested within individuals' character. One possible solution would have been to conduct a pre-study measuring individuals' levels of CPI and then – after a substantial temporal delay – invite students to the main wave of the experiment (multi-wave panel setup). Unfortunately, within the scope of our research, this was not possible because the ethical standards of using the sample at hand did not allow us to contact students directly in order to secure respondents' full anonymity.

vignette involves a form of *grey bribery*, which is offering a reciprocal service in exchange for reconsidering the grade. The third vignette represents the most commonly exposed form of bribery (*black bribery*) and involves offering the classic brown envelop with €500 in exchange for a pass.

The external validity of this approach was corroborated with an expert panel – as suggested by Gould (1996) – comprising both lecturers/professors and students of these faculties. Adequate pretests of the treatment stimuli were conducted before the experiment was rolled out (Wilson & White 1998). In the prospect of small to medium-sized effects (Cohen's $d \leq 0.3$; power = 0.8; $\alpha = 0.05$), sub-samples should comprise at least $n = 176$ respondents (Ellis 2010), which has been achieved for each country sub-sample. The raw data was strictly pre-stratified for missing values and responsive response patterns so that the final datasets comprise only complete responses.

The survey consists of four parts: A short introduction, a socio-demographic questionnaire with control variables (age, gender, religious beliefs, and field of study), independent variables, the vignette-treatment and dependent variable, and, lastly, a short debriefing.

<<< Please place Table 1 about here. >>>

Respondents were randomly assigned to two out of three bribery vignettes to reduce the absolute number of participants needed while guaranteeing a satisfactory high amount of treatment variance. Treatment randomization is an essential requirement for research seeking to infer causal relations (Meyer et al. 2017). The vignettes were designed with due diligence

following the suggestions by Hughes and Huby (2004) to make sure that the treatments are equally reliable, valid, and logical for the specific context of HE and for the specific target group of respondents (i.e. university students). The balance between treatment groups was strictly controlled for, with success (see Table 1).

Sampling Procedure

The data were raised with a voluntary online survey among university students in summer 2017. The study was conducted in several waves at two large Dutch, one Belgian, and one German university. Respondents were incentivized with the possibility of winning one of five significant gift vouchers for a popular online retailer in each country. The experiment was programmed and hosted with the software Qualtrics and distributed via e-mail invitation. The sample comprises $N = 624$ respondents and is slightly dominated by female participants (53.2%). Respondents are on average 23.2 (± 4.4) years old, predominantly nonreligious (52.1%), studying a variety of business-related studies and social sciences, predominantly Business Administration (41.1%) (see Table 1 for more detail). The resulting dataset was strictly stratified for missing data and, consequently, comprises only complete responses.

Dependent variable: Acceptability of Bribing (BRIBE)

We use De Waele et al.'s (2017) four item measure on the *acceptability of bribing* as our main dependent variable (*BRIBE*). This measure asks respondents to indicate how likely they were to act as depicted in a corruption-related vignette (see appendix A.1 for more detail) using four dimensions: *likelihood*, *justification*, *affect*, and *mistake* (reversed). These dimensions are coded as five-point Likert-type items ranging from 1 = 'absolutely disagree' to 5 = 'absolutely agree' and are then mean sum-scored. The validity of this aggregation procedure was controlled with a confirmatory factor analysis (*varimax* rotated with Kaiser normalization for item correlation, $\text{Chi}^2(6) = 2622.98$, $p < 0.000$; low factor item uniqueness ranges from $U = 0.27$ to

0.46; Kaiser-Meyer-Olkin $KMO = 0.83$), which confirmed high internal validity. The derived factor model is well specified and shows that the four items strongly and significantly load onto one single underlying factor (Cronbach's $\alpha = 0.874$), indicating high internal and external construct validity of the variable *BRIBE* with its four highly inter-correlated components. *BRIBE* is normally distributed across all treatment conditions [tested with Shapiro-Wilk; vignette 1: $W(409) = 0.991, p = 0.015$; vignette 2: $W(417) = 0.954, p = 0.000$; vignette 3: $W(415) = 0.892, p = 0.000$] and, thus, allows for linear regression analysis. As a control variable, respondents were asked to rate how realistic they found the scenario. Following recommendations by Krosnick and Presser (2010), we use an even four-point Likert-type single item, ranging from 1 = 'very unrealistic' to 4 = 'very realistic'.

Burnout Scale

We use Schaufeli et al.'s (2002) well-established *burnout scale* to assess the role of study-related stress as a factor influencing the likelihood that students accept the use of bribery. Schaufeli et al.'s (2002) scale is the result of a rigorous multi-national replication study based on the prior *Maslach Burnout Inventory* (Maslach et al. 1986) in a special adaption for students in HE. The scale measure is characterized by both high construct validity and high external reliability and consists of in total 15 seven-point Likert-type items clustered within three underlying dimensions (*exhaustion*, *cynicism*, and *professional efficacy*). In the current study, we use the scale as a compound measure that does not discriminate between the three sub-dimensions because all three of them are equally relevant for students' study-related stress promoting them to engage in unethical conduct.

Commitment to the Public Interest

We measure respondents' commitment to the public interest (CPI) with Kim et al.'s (2012) well-established and internationally validated scale on public service motivation (PSM) in

which CPI is one central dimension. Kim et al.'s (2012) full scale comprises four sub-dimensions to explain why some people are more motivated to engage in activities that are beneficial to the public interest (Perry & Wise 1990; Grant 2008). From these sub-dimensions – namely: *compassion*, *interest in policy-making*, *self-sacrifice*, and *commitment to the public interest* – we use *commitment to the public interest* (CPI) as a proxy to determine how individuals' ethical standard might inhibit or escalate their likelihood to bribe. CPI is measured as the weighted geometric mean of three Likert-type statement items with answer values ranging 1 (= 'absolutely disagree') to 7 (= 'absolutely agree'). Explicitly, these items asked respondents to indicate their personal opinion on (1) the relevance of civic duty, (2) the relevance of public service in general, and (3) the relevance of ethics in public institutions.

Probability Discounting Questionnaire

Since most shades of bribery are illegal and violate the common ethical standards of HE, offering bribes is a risky and psychologically stressful endeavor. Consequently, it is important to control for individual differences regarding risk attitudes between study participants. We assess individuals' risk propensity with Madden et al.'s (2009) *Probability Discounting Questionnaire*, a behavioral measure that estimates revealed risk propensity based on responses to a systematic and randomized set of 30 economic trade-off tasks. Payouts are hypothetical, but Madden et al.'s (2009) measure is very reliable in predicting not just preferences but also real choice under risk (Green & Myerson 2004), while at the same time being very robust against conscious manipulation. Following the aggregation algorithm of Weißmüller (2016), the questionnaire results in one characteristic discounting parameter (h) which describes individual students' likelihood to act risk-averse or risk-affine, respectively. The parameter h is exponential in scale and was, consequentially, centralized by taking its logarithm. Since

higher discounting parameter values indicate that respondents devalue risky options more strongly, individuals with $\ln(h) > 0$ are characterized as risk-averse.

Model estimation

Because study participants always responded to *two* vignettes, we conducted a linear regression analysis clustered at the subject level to ascertain that standard errors are robust against heteroscedasticity.³ Consequently, the number of observations in the model amounts to 1,241 observations nested in $N = 624$ individuals. Model *I* is specified as follows:

$$BRIBE = \beta_1 Burnout + \beta_2 Treatment + \beta_3 Realism + \beta_4 CPI + \beta_5 Burnout + \beta_6 Risk\ Aversion + \beta_7 Age + \beta_8 Female + \beta_9 Country + \varepsilon$$

Model *I* tests the effect of study-related stress (*Burnout*) on the likelihood bribing (*BRIBE*) controlling for three different shades of bribery (*Treatment*; coded with 1 = ‘white bribery’, 2 = ‘grey’, and 3 = ‘black’) to test *H1* and *H2*. Based on prior empirical research pointing out that individuals’ personal characteristics influence their likelihood of engaging in acts of bribery (see e.g. Glover et al. 1997), the model includes a series of control variables to guarantee high ecological validity of the model (i.e. respondents’ individual revealed *risk propensity*, their *age*, their gender (with *female* set as the arbitrary default), and a binary indicator for high (i.e. larger than average) perceived *realism* of the treatment condition). The pairwise correlation matrix for all study and control variables is presented in appendix A.3. In a second model (Model *II*) we subsequently add an interaction term between CPI and burnout to investigate *H3*. In the following section, we first analyze each country’s sample individually

³ Appendix A.2 provides the results of extensive post-hoc analyses to control for order and spill-over effects potentially resulting from randomization-based latent secondary treatment-clusters between respondents. These results show that both the experimental setup and the randomization procedure are robust against these latent secondary treatment-clusters and that procedure-based order and spill-over effects are not an issue.

and then pool the data for a combined model in which Germany arbitrarily serves as the reference category to investigate cross-country effects.

Results

Study 1: Germany

The data of study 1 comprises responses by $n = 211$ participants (54.8% female) who are on average 25.84 ± 4.82 years old, mainly non-religious (40.8%) or of protestant faith (33.7%), and who predominantly study business administration (35.6%) or other social sciences (47.7%) at a large German university. Participants score above average on Schaufeli et al.'s (2002) burnout scale (3.02 ± 0.87), hold relatively high levels of CPI (5.63 ± 1.06) and are revealed to be relatively risk averse (0.62 ± 0.59) but with a high degree of variance within the sample.

For this sub-sample, Schaufeli et al.'s (2002) burnout scale is highly reliable and robust with Cronbach's $\alpha = 0.86$ and a very satisfactory level of inter-item covariance (IIC) of 71.5% on average). Factor analysis on the three items of CPI confirms that all items are highly correlated and load unto one single underlying factor (Cronbach's $\alpha = 0.72$; average IIC: 0.818; Bartlett's test for sphericity: $\text{Chi}^2(3) = 296.25$, $p < 0.000$; all mean KMO > 0.61), indicating high measurement reliability.

Robust linear regression analysis on *BRIBE* (clustered at the level of the individual for conditional contribution) shows that the contextual treatment (i.e. darkening shades of bribery; $\beta_{I,1} = -0.373$, $p = 0.000$) and the perceived realism of the treatment vignettes ($\beta_{I,2} = 0.416$, $p = 0.000$) created a substantial amount of variance which adds to the robustness of the findings. Since respondents differentiate sharply between the three shades of bribery and are substantially more likely to engage in lighter shades ($\beta_{I,1} = -0.373$, $p = 0.000$), *H1* cannot be rejected. *H2* postulates that students are more likely to engage in bribery if they are affected by burnout. Model II (see table 2) reveals that higher levels of burnout are directly associated with

a higher likelihood of offering bribes ($\beta_{II,4} = 0.156, p = 0.094$). Although this association is only statistically reliable on the 10% level, $H2$ cannot be rejected because the relation is positive. Furthermore, model I reveals that higher commitment to the public interest is directly and negatively associated with students' likelihood of engaging in acts of bribery ($\beta_{I,3} = -0.076, p = 0.067$) but – contrary to $H3$ – model II shows that this effect is a direct effect rather than being filtered through an interaction between burnout and *BRIBE* ($\beta_{II,3} = -0.020, p = 0.144$). Consequently, $H3$ has to be rejected.

<<< Please place Table 2 about here. >>>

Study 2: Belgium

Study 2 was conducted at a large Belgian university and comprises data of in total $n = 220$ respondents (51.8% female; on average 22.47 ± 3.65 years old) who mainly study for degrees in business administration (46.8%) and business engineering (24.1%). Study participants are mainly non-religious (49.6%) or of roman-catholic confession (40.0%), report relatively high CPI (5.78 ± 0.94) and an above-average level of study-related burnout (3.01 ± 0.51).

Across all vignette treatments, respondents in study 1 score below the scale's medium on *BRIBE* ($M = 2.03, SD = 0.97$). Two-tailed t -testing reveals that the bribery vignettes create significant variance across the three treatment groups, with the likelihood to *BRIBE* strictly and transitively decreasing from the *white* ($M = 2.65, SD = 0.94$) to the *grey* ($M = 1.86, SD = 0.85$) and to the *black* bribery scenario ($M = 1.56, SD = 0.78$). This indicates a strong and robust treatment effect ($F(1, 387) = 105.24, p = 0.000, adj. R^2 = 0.213; t = -10.26, p = 0.000, \eta^2 = 0.215$) and shows that $H1$ cannot be rejected.

For the Belgian sample, the burnout scale is highly reliable and robust with Cronbach's $\alpha = 0.85$ and an acceptable level of IIC (47.1% on average). Factor analysis on the three items of CPI confirms that all items are highly correlated and load onto one single underlying factor (Cronbach's $\alpha = 0.67$; average IIC: 0.60; Bartlett's test for sphericity: $\chi^2(3) = 185.32, p < 0.000$; all mean KMO > 0.62), indicating an acceptable level of measurement reliability.

Robust linear regression analysis on *BRIBE* (clustered at the level of the individual; see table 2) reveals partially dissimilar results compared with study 1: The contextual bribery treatments ($\beta_{I,1} = -0.435, p = 0.000$) and the perceived realism of the treatment vignettes ($\beta_{II,2} = 0.433, p = 0.000$) explain a substantial amount of variance and higher levels of burnout are directly associated with a higher likelihood of offering bribes ($\beta_{II,4} = 0.216, p = 0.114$) but this association is not statistically reliable on the 5%-level. In contrast to study 1, model II shows a small interaction effect between students' level of CPI and burnout on *BRIBE* ($\beta_{II,3} = -0.017, p = 0.041$), while the direct effect of CPI is both small and statistically non-reliable ($\beta_{I,3} = -0.043, p = 0.172$). Consequently, *H2* had to be rejected but *H3* cannot be rejected for study 2.

Study 3: The Netherlands

The results of study 3 are based on a sample of university students ($n = 193$; 51.8% female) mainly pursuing degrees in business administration (40.1%) and socioeconomics & economic policy (31.3%) at two large Dutch universities. Respondents are on average a little bit younger than respondents in studies 1 and 2 (21.13 ± 2.82), and predominantly non-religious (67.7%). They report above average levels of study-related burnout (3.16 ± 0.56) and a relatively high level of CPI (5.50 ± 1.10). Similarly to study 1, the scale measures are highly reliable and robust (Burnout: Cronbach's $\alpha = 0.88$, average IIC = 58.5%; CPI: Cronbach's $\alpha = 0.86$, average IIC = 70.6%, $\chi^2(3) = 258.69, p < 0.000$, all mean KMO > 0.61).

The clustered robust linear regression models on *BRIBE* (see table 2) reveal very similar results compared with both studies 1 and 2: The contextual bribery treatments created a substantial amount of variance and together with the perceived realism of the treatment vignettes ($\beta_I = 0.501, p = 0.000$) explain a high amount of variance. Respondents' likelihood to *BRIBE* decreases transitively from white to black shades of bribery ($\beta_{I,1} = -0.341, p = 0.000$) so that *H1* cannot be rejected. Higher levels of burnout are directly associated with a higher likelihood of offering bribes ($\beta_{II,4} = 0.251, p = 0.011$). Contrary to study 1 but in line with the results of study 2, higher CPI is directly related with a lower likelihood of offering bribes ($\beta_{I,3} = -0.080, p = 0.034$) but model II also shows that this relation is partially moderated by an interaction between CPI and Burnout ($\beta_{II,3} = -0.025, p = 0.041$). Consequently, both *H2* and *H3* cannot be rejected for study 3.

Pooled data

Pooling the data of all three country samples ($n = 1,169$), linear regression analyses clustered on the level of the individual further substantiates the results presented in the previous sections, with respondents being linearly and transitively more willing to engage in lighter shades of bribery compared to darker shades ($\beta_{I,1} = -0.390, p = 0.000$) so that *H1* cannot be refuted. Higher levels of burnout are directly related to a higher likelihood of students being willing to engage in activities of bribery ($\beta_{II,4} = 0.200, p = 0.000$), thus further supporting *H2*, and higher CPI is associated with a lower likelihood of *BRIBE* ($\beta_{I,3} = -0.069, p = 0.001$) with parts of this effect channeled through an interaction between CPI and burnout ($\beta_{II,3} = -0.021, p = 0.003$). Consequently, neither *H2* nor *H3* can be rejected.

The models indicate no substantial country effects which underlines the high ecologic reliability of our three country findings. Across all three studies, we find that students are far less likely to accept the use of darker shades of bribery compared with lighter shades ($\beta_{I,1} = -$

0.390, $p = 0.000$); see figure 1 for the marginal effects plot of treatment variation on *BRIBE*. This implies that respondents are much more accepting of the use of “white” influence tactics to promote their lecturers to reconsidering their grades and to hence achieve their ends of passing an important exam. This means that students will be substantially more likely to use emotional please such as becoming emotional, begging, and pleading than using reciprocal or frank monetary means of persuasion.

<<< Please place Figure 1 about here. >>>

Curiously, and across all three studies, respondents who perceived the scenario presented in the vignettes as more realistic were actually *more* likely to accept the use of bribery as a means to improve their failed exams ($\beta_{I,2} = 0.443$, $p = 0.000$). This is an intriguing finding because it substantiates the high ecological validity of both the quasi-experimental procedure and the findings since it indicates that in these cases respondents were especially less likely to answer in a socially desirable way. Furthermore, in each study, both regression models are well specified [$F(9, 385 - 1,169) = 47.91 - 139.11$, $p = 0.000$] and explain a large share of variance ($R^2 = 0.410 - 0.524$), indicating robust and reliable findings. Multi-collinearity was not an issue (all $VIF = 1.11 - 1.42$). In summary (see table 3), the empirical results show that the quasi-experimental approach used in the current treatment was successful in revealing actual intention to *BRIBE* and none of the three hypotheses could be rejected: Some shades of bribery are more likely to occur, especially emotional influence tactics, burnout increases the likelihood of offering bribes, and students’ commitment to the public interest is minor but influential factor.

<<< Please place Table 3 about here. >>>

Discussion

The empirical results of this study point out three things: Firstly, that lighter shades of bribery – especially emotional influence tactics – are more likely to occur in student-lecturer consultations than darker shades of bribery. Secondly, that burnout increases the likelihood of students offering bribes. Thirdly, that students' ethical stance regarding their commitment to the public interest is a rather weak but influential remedy.

Our respondents in three countries revealed that they perceived engaging in white bribery and even grey bribery as a relatively well acceptable tactic to convince their lecturers to change a failed mark to a pass if it serves their personal advantage. This finding does not only reveal that university students indeed distinguish sharply between different shades of bribery but also, that lighter shades – especially white bribery's emotional influence tactics – are hardly perceived as corrupt behavior at all and are, hence, socially acceptable for most students in our sample. This is a troubling finding because it indicates that students are largely unaware that this kind of behavior is already a substantial form of ("white") HE corruption: Even if regarded as socially acceptable, applying manipulative emotional influence tactics still aims at granting individuals illegitimate privilege compared to their fellow students, undermining the principles of equal treatment and trust in the fairness of examination in HE.

Furthermore, quasi-experimental results reveal that students who are on the edge of a burnout are more likely to use bribery as a means to pass an exam: Pooled analyses indicated a robust and significant effect between burnout and the acceptability to bribe. This finding is in line with prior research by Penney and Spector (2005), Robotham and Julian (2006), and Reynolds

et al. (2013) who found that higher levels of stress in students are positively correlated with a higher likelihood of engaging in risky and deviant behaviors (such as bribing). At the country-level, the replications showed a significant effect in Germany and the Netherlands. However, surprisingly, the effect in Belgium proved to be non-significant, which might be caused by country-specific differences. A potential reason could be that, according to Hofstede (1991), the level of uncertainty-avoidance in Belgium is considered as rather high (94 versus 65 in Germany and 53 in the Netherlands), which has been also illustrated by the relatively high level of risk-aversion within the Belgian sample, compared to Germany and the Netherlands. Since bribery is typically a risky endeavor, respondents in Belgium might be less willing to engage in bribery acts so that the relationship between burnout and acceptability of bribery was being disrupted.

Furthermore, findings show that students with high ethical standards in the sense of being strongly committed to the public interest are only marginally less likely to engage in bribery. This is surprising and stands in contrast with classic predictions on the importance of students' personal ethics and believes in directing individual behavior in a social context as well as with prior empirical research by, for instance, Trevino (1986), Ajzen (1991), Glover et al. (1997), and Ritter (2006), but it is in line with comments by Heyneman (2011). In his essay on the corruption of ethics in HE, Heyneman (2011) points out that even though university students worldwide feel uncomfortable about engaging in corrupt study-related behavior – for instance by cheating in their examinations – the individuals who do engage in this adverse behavior will *still* report that they are satisfied with their behavior from an ethical perspective. This idea resonates loudly with the theory of cognitive dissonance, a theory less frequently used in the context of HE but one that has been popular in explaining deviant or corrupt behavior in the context of organizations for decades (Moore 2007). Following this theory, human beings strive for internal psychological consistency in order to mentally function in the real world (Festinger

1962). People who are aware of internal inconsistencies are likely to feel psychologically uncomfortable which motivates them to reduce the cognitive dissonance by consciously or unconsciously rationalizing their behavior and thus justify it for themselves and others, either by adding new parts to the cognition causing the inconsistencies or by avoiding social situations that would result in discomfort and emotional and cognitive burden (Festinger 1962). A second explanation of the small correlation between holding high ethical standards and the likelihood of engaging in study-related bribery observed in the current study might relate to the phenomenon of moral disengagement. Moral disengagement describes a conscious or unconscious process of dissociating individuals' own behavior from the standards of morality they would normally deem legitimate thus suspending the power of high ethical standards on behavioral self-regulation (Tsang 2002; Moore 2007). The result that personal ethical standards are only marginally related with the likelihood of engaging in corrupt behavior emphasizes the weakness of merely reinforcing ethical appeals to prevent corrupt behavior and it shows how limited the effect of such appeals is. This is an important result for practice because it shows that cases of bribery in student-lecturer consultation can hardly be prevented by moral appeals but should rather be tackled by adaptations in procedural and organizational structures, for instance, by introducing the four-eye principle in these potentially vulnerable situations or by evaluating student appeals in a formalized double-blind procedure.

Although commitment to the public interest only marginally decreases the chances to engage in bribery, pooled analyses confirmed that higher levels of commitment to the public interest moderate the relation between burnout and the likelihood of bribery, which confirms the third hypothesis. At the country-level, these findings were confirmed by our sample in Belgium and the Netherlands. In Germany, this hypothesis was rejected, however, which might be explained by potential country-specific differences. Looking closer at Hofstede's (2010) dimensions, within our sample, Germany scores the lowest on individualism (67, versus 75 and 80 in the

Netherlands and Belgium), which indicates that Germany is a slightly more collectivist country. Consequently, German respondents might be more socialized into suppressing their own needs and issues (burnout and study failure in this case) in order to preserve the ‘greater good’ (observed by CPI in this case) so that these variables are not significantly correlated. These assumptions resonate with Williams (2017) who argues that the German culture is more widely influenced by Kantian philosophy compared to the Netherlands and Belgium. As a result, German respondents within our sample might be more likely to rationalize and minimize personal issues in order to preserve morality compared to the other country samples.

Conclusion

The motivation of this study was to explore the connection between study-related burnout and bribery in a higher education context, shedding light onto the latent micro-foundations of HE corruption. Using a quasi-experimental study design and a multi-national replication approach, the findings of this study do not only show that university students’ level of burnout is partially associated with their intent to bribe their lecturer for passing important exams, but also that the overall intent to use emotional influence tactics is much higher compared to other forms of bribery and that it is perceived as much more acceptable as a means to manipulate their lecturer.

Like any empirical study, this research is subject to limitations. First, this study uses data from a vignette-based survey (quasi-)experiment and does not directly examine real-life behavior but behavioral intent. Yet, stated intentions to bribe still largely correlate with actual behavior and, hence, grant very valuable insights into the delicate topic of HE bribery (Ajzen 1991). Given the issue of social desirability, the effect sizes of the results might actually be under-reported, thus, calling for future research (Randall & Fernandes 1991). Future studies might want to manipulate other contextual aspects such as the effect of the four-eye principle by manipulating the effect of witnesses or by including information about peer feedback. Future

studies could also opt to investigate whether other character traits influence students' likelihood to use bribing for instance by using the BIG-5 personality inventory. While behavioral intent is a good indicator for actual real-life behavior, more quantitative behavioral and qualitative observational research is needed to further substantiate the ecological validity of our results. Furthermore, the current study solely follows the perspective of the agent offering a bribe. Consequently, the current study cannot make assumptions about the extent to which this act of one agent (the briber) would effectively lead to a transaction since the viewpoint of the potential acceptor of this very bribe was not explicitly examined. Future studies conducting dynamic lab-based choice experiments will close this gap. Lastly, the current study explicitly focusses on the context of the HE systems in Belgium, Germany and the Netherlands, calling for future replication studies in two ways: First, exact replications of this study's design could be conducted in countries with a dissimilar cultural perception of bribery to determine whether the effects revealed by the current study are idiosyncratic or generalizable. Second, replications in countries with a dissimilar background regarding the structure and the institutional logics of HE will yield valuable insights into the role of formalized structures on the likelihood of bribery in HE as a means to "cut the corner" for taking individual advantage.

In summary, our findings are especially relevant for practice. We advise practitioners to keep an open eye on more subtle forms of bribery such as emotional pleading or offering a helping hand because people are much more susceptible to those 'white' and 'grey' forms of bribery than for the classic brown envelop. HE institutions might therefore benefit from selective awareness campaigns that enable lecturers to better recognize this behavior and advert students about the unappropriated use of emotional influence tactics. Furthermore, practitioners seeking to diminish the likelihood of bribery who prefer to meet with students wishing to discuss their exam results might ask another colleague to join them, which could serve as an additional barrier towards students who are willing to use bribery-acts.

The research design presented in this paper came with a few methodological advancements. On the one hand, the replications added to the robustness and external validity of the findings. On the other hand, taking into account the specific institutional contexts from the different countries enabled us to construct more nuanced findings. As a result, unexpected inconsistencies in the findings between the countries were easier tracked down which resulted in a more reflexive approach. Consequently, the combination of replicating research, based on (quasi-)experimental data proves to be a promising research design also for future (replication) studies elaborating our initial take on HE bribery on the level of student-lecturer interaction.

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TABLE 1: Descriptive sample statistics

Sample	Germany	Belgium	The Netherlands
N	211	220	193
Vignette treatment^a			
Treatment 1: “white” bribery	33.8%	34.7%	34.2%
Treatment 2: “grey” bribery	33.8%	34.8%	31.4%
Treatment 3: “black” bribery	34.2%	34.9%	30.8%
Gender, male (n)	45.2% (95)	48.2% (104)	48.2% (93)
Age in years	25.84 ± 4.82	22.47 ± 3.65	21.13 ± 2.82
Burnout	3.02 ± .87	3.01 ± .51	3.16 ± .56
CPI	5.63 ± 1.06	5.78 ± .94	5.50 ± 1.10
Religion (n)			
Non-believer	40.8% (86)	49.6% (109)	67.7% (130)
Catholic	14.7% (31)	40.0% (88)	20.7% (40)
Protestant	33.7% (71)	2.3% (5)	6.7% (13)
Muslim	6.6% (14)	5.9% (13)	.5% (1)
Jewish	.	.5% (1)	.5% (1)
Buddhist	.	.5% (1)	1.6% (3)
Other	4.3% (9)	1.4% (1)	2.6% (5)
Field of study (n)			
Business Administration	35.6% (75)	46.8% (103)	40.1% (79)
Socioeconomics & Economic Policy	9.9% (19)	10.0% (22)	31.3% (66)
Political Science	3.6% (7)	7.3% (16)	5.7% (12)
Business Engineering	.	24.1% (53)	4.3% (9)
Other Social Sciences	47.7% (92)	11.8% (26)	21.3% (45)

Notes: Items are either reported with geometric means and standard deviations ($M \pm SD$) or proportions (%) and frequencies (n). ^a Treatment distribution controlled for balance with two-tailed t -tests (on 5% level of significance) both within and between studies; all non-significant.

TABLE 2: Regression analysis on *BRIBE* by study

	Germany				Belgium				The Netherlands				Pooled data			
	I		II		I		II		I		II		I		II	
Treatment effect																
Bribery vignette	-.373***	(.05)	-.373***	(.000)	-.435***	(.05)	-.435***	(.000)	-.341***	(.06)	-.342***	(.000)	-.390***	(.03)	-.391***	(.000)
Realism	.416***	(.05)	.415***	(.000)	.433***	(.04)	.433***	(.000)	.501***	(.05)	.501***	(.000)	.443***	(.03)	.443***	(.000)
CPI	-.076†	(.04)			-.043	(.03)			-.080*	(.04)			-.069**	(.02)		
Two-way interaction																
CPI x Burnout			-.020	(.144)			-.017*	(.041)			-.025*	(.041)			-.021***	(.000)
Control variables																
Burnout	.045	(.05)	.156†	(.094)	.118	(.07)	.216	(.114)	.115	(.07)	.251*	(.011)	.083*	(.04)	.200***	(.000)
Risk aversion	.063	(.07)	.070	(.342)	.010	(.05)	.009	(.856)	-.013	(.06)	-.013	(.832)	.020	(.03)	.021	(.535)
Age	.018*	(.01)	.018*	(.028)	.005	(.01)	.006	(.576)	-.002	(.01)	-.003	(.755)	.010†	(.01)	.001†	(.095)
Female	-.101	(.10)	-.106	(.268)	-.170**	(.07)	-.169*	(.011)	-.102	(.08)	-.103	(.219)	-.134**	(.05)	-.135**	(.003)
German													– reference category for country effects –			
Belgian													-.076	(.07)	-.077	(.261)
Dutch													-.061	(.06)	-.059	(.334)
Intercept	1.703***	(.44)	1.271**	(.001)	1.685***	(.37)	1.423***	(.000)	1.770***	(.41)	1.348***	(.002)	1.781***	(.25)	1.393***	(.000)
Observations	385		385		430		430		354		354		1,169		1,169	
F	49.23***		47.91***		80.04***		79.74***		62.42***		62.24***		139.11***		137.88***	
VIF ^a	1.13		1.59		1.11		1.40		1.16		1.42		1.35		1.62	
R ²	.412		.410		.524		.524		.488		.488		.474		.473	
Adj. R ²	.401		.399		.516		.516		.478		.477		.469		.469	

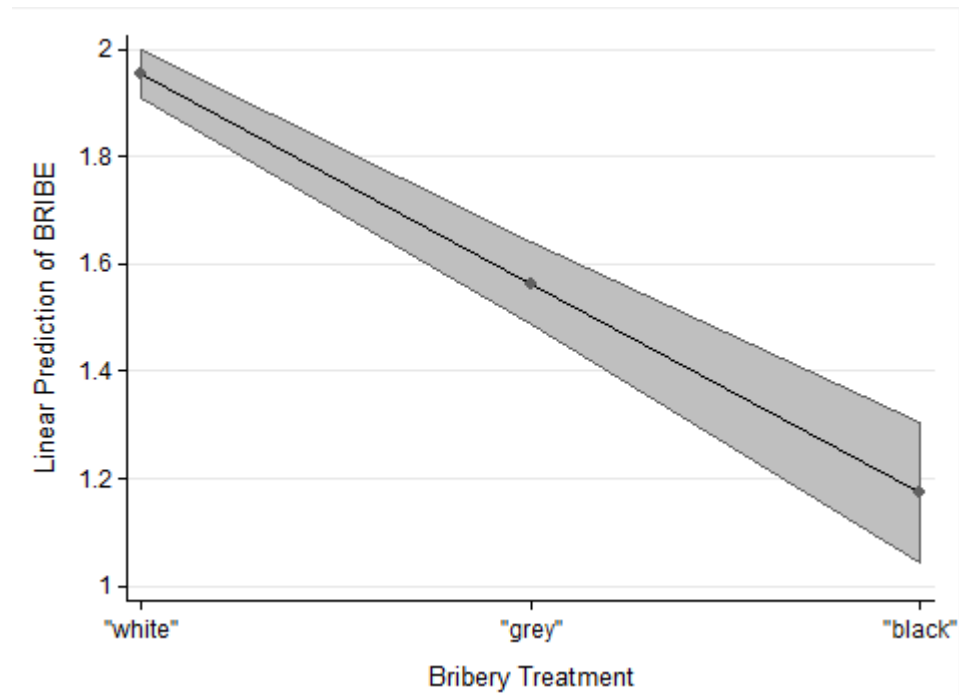
Notes: Linear regression estimates clustered at subject level for conditional contribution; Bribery vignette dummy coded 1 = ‘white’, 2 = ‘grey’, and 3 = ‘black’. Model *I*: direct effects, heteroscedasticity-robust standard errors in parentheses; Model *II*: pure interaction effects (*p*-values in parentheses); † $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, and *** $p < 0.001$. ^a Mean variance inflation factor (*VIF*): all $VIF \leq 2.64$.

TABLE 3: Overview of findings

<i>Hypothesis</i>			<i>Study 1</i>	<i>Study 2</i>	<i>Study 3</i>	<i>Pooled data</i>	<i>Interpretation</i>
H1	(-)	Darker shade → BRIBE	-.373*** (.000)	-.435*** (.000)	-.342*** (.000)	-.391*** (.000)	Consistently negative → not rejected
H2	(+)	Burnout → BRIBE	.156† (.094)	.216 (.114)	.251* (.011)	.200*** (.000)	Consistently positive → not rejected
H3	(-)	CPI x Burnout → BRIBE	-.020 (.144)	-.017* (.041)	-.025* (.041)	-.021** (.003)	Consistently negative → not rejected
Additional analysis	(-)	CPI → BRIBE	-.076† (.067)	-.043 (.172)	-.080* (.034)	-.069** (.001)	Consistently negative → not rejected

Note: Analysis based on beta coefficients, with *p*-values between brackets († $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$).

Figure 1: Marginal Effects Plot of Treatment Effect



Note: Shaded area indicates 95%-confidence interval.

APPENDIX (Supplementary Online Material)

A.1 Vignette Stimuli (English translation)

<p>1. Introduction to bribery scenarios [all study participants]:</p> <p>‘Please imagine that you are a first year student again who has just received his results for the end of term exams. You passed all courses but one. You failed to pass one very difficult course you really do not want to redo. The consequence is that your prerequisites in the next academic year become compromised and you are unable to participate in other courses so that chances are real that you will not succeed to obtain your degree within the foreseen four years.</p> <p>Meanwhile, you informed the assistant of this course in order to receive written feedback. This feedback indicates that you achieved 9.4/20. You know that if you would have scored 9.5/20, your result would be rounded off to 10/20 so that you would have passed the exam and the study program of the first year would have been accomplished.</p> <p>What would you do in the following two situations?’</p>
<p>2. Vignettes:</p> <p>Study participants randomly received two out of three vignette treatments, each followed by the five Likert-type scale factor items of the dependent variable BRIBE.</p>
<p>A. “Emotional plea”: white corruption</p> <p>‘You make an appointment with the lecturer of this course and inform him about your situation. Rumour goes that, in the past, the lecturer let himself be influenced in a personal conversation. After you became emotional, you ask the lecturer if he, due to the circumstances, would consider being a little bit milder with regard to your result so that you can finally succeed in this course. Your future relies on this.’</p>
<p>B. “Car mechanic”: grey corruption</p> <p>‘You make an appointment with the lecturer of this course and inform him about your situation. Rumour goes that, in the past, the lecturer let himself be influenced in a personal conversation. The lecturer is a little bit too late and apologizes. He experienced car trouble, which is very unfortunate for the reason that he has to leave for an important</p>

	conference tomorrow. However, your father is a car mechanic. You offer your lecturer to repair the car, free of charge and with the highest priority, on the condition that your result is reconsidered.'
	C. "Brown envelop": black corruption 'You make an appointment with the lecturer of this course and inform him about your situation. Rumour goes that, in the past, the lecturer let himself be influenced in a personal conversation. You ask him to reconsider your score and therefore offer him an envelope with €500 in exchange.'

Note: Extensive codebooks in Dutch and German upon request.

A.2 Additional analysis on order and spill-over effects

In each study country, respondents were treated with two vignettes, which were drawn randomly out of three vignettes. Compared to a between-subject design in which each respondent would receive only one single vignette, this randomization approach dramatically reduces the number of respondents needed to achieve reasonable sample sizes to investigate treatment effects with respect to the anticipated effect sizes. Yet, this method of distributing the treatments could potentially confound the observed treatment effect on the main dependent variable *BRIBE* because showing two randomly drawn vignettes to each respondent results in latent second-order clusters between respondents based on the unique vignette order each of them received. For instance, the effect of receiving the white bribery vignette first followed by a grey bribery vignette second could relatively outweigh the effect of receiving two extreme conditions – for instance, in the form of first receiving the white bribery vignette followed by the black vignette.

The technical implementation of our quasi-experimental design allows us to identify three unique combinations of vignettes, as described in table A.2.1: *white & grey* (cluster *C1*), *black & white* (cluster *C2*), and *grey & white* (cluster *C3*). Hence, cluster *C2* represents the combination of receiving the two most extreme treatment conditions.

TABLE A.2.1: Descriptive statistics of *BRIBE* by latent second-order treatment clusters

BRIBE		Obs.	Mean	SD	Min	Max
Cluster description						
<i>C1</i>	White & grey bribery treatment	412	2.106	.928	1.000	4.750
<i>C2</i>	Black & white bribery treatment	407	2.044	1.038	1.000	5.000
<i>C3</i>	Grey & black bribery treatment	422	1.720	.833	1.000	5.000

Notes: Pooled data; *BRIBE* values range: 1 = ‘very low’ to 5 = ‘very high’.

Mean comparison analysis (see table A.2.1) reveals only very mild cluster-based order effects within treatments, indicating that receiving a combination of the white and grey bribery

treatment ($C1$) correlates with a higher likelihood of *BRIBE* compared with receiving a treatment cluster including the black bribery vignette ($M_{C1} > M_{C2} > M_{C3}$), which is in line with both the hypothesized direction of effects in the study and with the results presented in the main analysis. Similar to the effects reported in the main analysis section, the effect of receiving a latent cluster of two extreme treatment conditions – the white and the black vignette ($C2$) – is associated with a substantial decrease in *BRIBE* but the effect is even larger if the black bribery vignette is combined with the grey bribery vignette ($C3$). This effect can be explained by the well-researched psychological effect of the negativity bias: A large body of research shows that negative stimuli are generally more salient than positive stimuli and, consequently, clusters that incorporate the socially less acceptable – i.e. black – form of bribery ($C2$ and $C3$) are likely to result in lower likelihoods of *BRIBE*, indicating that the randomization approach resulted in a well-balanced treatment distribution. Since these findings are in line with our expectations, consequently, we find that vignette cluster-based spillover effects do not substantially confound the results of the current study, although mild cluster effects exist.

Since confidence intervals are relatively large, we investigate the robustness of these mild cluster effects by conducting a series of two-tailed t -tests between the three clusters on the pooled data (see Table A.2.2).

TABLE A.2.2: Between-cluster differences of *BRIBE*

<i>BRIBE</i>		<i>t</i>	<i>p</i>	<i>d</i>
Cluster comparison				
$C1$ vs. $C2$	[white & grey] vs. [black & white]	.909	.364	.064
$C2$ vs. $C3$	[black & white] vs. [grey & black]	4.943	.000	.345
$C3$ vs. $C1$	[grey & black] vs. [white & grey]	6.324	.000	.439
Extreme cluster comparison				
$C1$ & $C3$ vs. $C2$	[white & grey] or [grey & black] vs. [black & white]	-2.209	.028	.140

Notes: Clustered treatment effect; tested with two-tailed t -tests; effect sizes estimated with Cohen's d -score (Welch-adjusted).

We find statistically significant but small mean differences between respondents who received the most extreme black and white bribery treatment (C2) and those who received the more moderate combination of the grey and black bribery treatment (C3) [C2 vs. C3: $t = 4.943$, $p = 0.000$; $|d| = 0.345$] or those who received the white and grey bribery treatment (C1) [C3 vs. C1: $t = 6.324$, $p = 0.000$; $|d| = 0.439$]; [C1 & C3 vs. C2: $t = -2.209$, $p = 0.028$; $|d| = 0.140$]. This makes a lot of sense since cognitive psychology research shows that being framed with a rather negative – i.e. black bribery scenario – or a rather positive – i.e. white bribery – treatment condition creates an implicit benchmark for the evaluation of the situation for respondents in consecutive choice scenarios. Although we would also expect a significant difference between being treated with the white and grey bribery treatments (C1) compared to being treated with the more extreme black and white treatment cluster (C2), two-tailed t -testing reveals no substantial differences in *BRIBE* ($t = 0.909$, $p = 0.364$; $|d| = 0.064$). This can be explained by the phenomenon that – compared with the white bribery scenario – both the grey and the black bribery scenario present scenarios that are less socially acceptable and which might, hence, trigger almost equally negative psychological benchmarks for evaluation.

Since the compound treatment effects of the latent between-subject vignette-clusters strongly resemble the findings in the main analysis, we conclude that the current experimental setup is robust against noise involuntarily induced by the randomization procedure-based order effects, and we, hence, conclude that order or spillover effects between vignettes were not a substantial issue.

In summary, we have great confidence in our findings but we do encourage scholars conducting future replications of the current study to recognize the methodological risk of involuntarily creating additional noise by using automatized randomization procedures that might result in latent vignette-clusters in the treatment distribution among respondents in our study. Although we do not find any substantial bias induced by these latent treatment clusters, future replication

studies could, alternatively, use a pure between-subject design in which respondents receive, first, a non-affective neutral vignette to set a neutral benchmark across all respondents followed by, second, a single (*white*, *grey*, or *black*) treatment vignette randomized across the whole sample(s) to rule out any potential of treatment cluster-based artefacts. Yet, researchers following this alternative approach should be aware that they would have to raise substantially larger samples to achieve the same level of power, which – due to increasing between-subject heterogeneity – might also induce further noise into the data, while the expected benefit of circumventing marginally small and statistically insignificant cluster effects is limited. Research pragmatism, hence, suggests that replicating the current study in its original design and vignette distribution procedure (two out of three) would be most advisable.

A.3 Pairwise correlation analysis

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
<u>Study variables</u>											
1. BRIBE	–										
2. Treatment	-.53***	–									
3. High realism	.60***	-.48***	–								
4. Burnout	.04	.01	-.01	–							
5. CPI	-.09**	-.01	-.00	-.01	–						
<u>Control variables</u>											
6. Risk propensity	-.06†	.00	-.09**	.02	.07*	–					
7. Female	-.09***	.00	-.04	.03	.08**	.02	–				
8. Age	.05†	.01	-.03	.00	-.07**	-.16***	-.10***	–			
9. German	.05†	.00	.07*	-.10***	-.18***	.03	.33***	.03	–		
10. Belgian	-.06*	.00	-.03	-.06*	.10***	.47***	-.01	-.37***	-.45***	–	
11. Dutch	-.04	-.00	-.06*	.09**	-.09**	-.05*	-.03	-.09**	-.46***	-.46***	–

Note: † $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$