Would you bribe your Lecturer?

A quasi-experimental Study on Burnout and Bribery in Higher Education

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Abstract

Bribery 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 that reveal the circumstances under which students 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 accept using emotional influence tactics to pass (failed) exams. In contrast, offering a helping hand or money to their lecturer was less acceptable. Furthermore, the empirical results reveal a clear link between higher levels of burnout and the likelihood of engaging in 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 study provides solid empirical evidence that university students are likely to use emotional influence tactics violating both the ethical codes of conduct and the formalized bureaucratic procedures of HE examination. However, appealing to students' commitment to the public interest might help reduce this likelihood. Consequently, HE institutions can benefit from implementing the four-eye principle and from launching awareness campaigns that enable lecturers to better recognize these tactics and engage students in creating a transparent environment for testing, grading, and collaboration that is resistant to bribery.

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

Introduction

Bribery is a substantial and critical issue in institutions of higher education (HE) worldwide (Heyneman, 2011; Heyneman, 2014; Johnson, 2001). HE bribery involves acts of dishonest, unethical, and most often illegal behavior committed by both students and academic staff (Chapman and Linder, 2016; Waite and Allen, 2003). This behavior predominantly involves 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).

HE bribery has become common practice in both developing and industrialized countries (Rumyantseva, 2005): For instance, Heyneman, Anderson and Nuraliyeva (2008) show that more than 60% of students in Central European countries such as Bulgaria, Croatia, Moldova, and Serbia report that bribing lecturers for passing exams is common among their faculties. Recently, about fifty U.S. citizens were convicted for bribing university admission pathways originally designed for student athletes to buy access to elite universities for their children (Downes, 2017). As illustrated by a recent lawsuit against Harvard University, quid-pro-quo donations by financially strong donors were revealed to playing a significant role in providing university access to elite universities in the U.S. for students who would not be admissible to these institutions by effective legal and ethical standards (Glendinning, Orim, and King, 2019).

Among the many facets of HE corruption, bribery committed by students attempting to influence their lecturers to their individual advantage is likely the most serious issue. Bribing lecturers for passing exams enables people to receive HE degrees without the required intellectual capacities to effectively achieve them. As a result, incompetent and corrupt people might gain inappropriate access to powerful political and managerial positions

by bypassing the selection process institutionalized in academia (Heyneman, Anderson, and Nuraliyeva, 2008). Consequently, HE bribery is a fundamental problem for social coherence and can destroy the general public's trust in political and governmental institutions (von Arnim, 2003; Denisova-Schmidt, 2018). In the long term, these acts also have a substantially negative effect on societal welfare since they threat the quality of HE, its procedural equity, and access equality (Heyneman, 2014; Osipian, 2007). HE bribery impedes economic growth by relatively slowing down the process of accumulating human capital in those (honest) students left behind because they do not bribe, hence diminishing societal progress, social mobility, and inhibiting citizen equality (Heyneman, 2011; Osipian, 2007). 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).

Although bribery is often described as a "*victimless crime"*, von Arnim (2003) points out that this is in fact untrue: Even though bribery might not create *one* specific victim – in contrast to other crimes such as robbery or murder – bribery is a crime that will always indirectly harm the welfare of a substantial number of people.

Bribery has macro, meso, and micro-level roots. For instance, Johnson (2001) and Heyneman (2011) conceptualize bribery as a problem largely nested in countries' institutional frameworks. Other authors such as den Nieuwenboer and Kaptein (2008) argue that its likelihood relates to specific organizational contexts. Yet, since bribery is an illegal, unethical, and socially undesirable behavior, it is especially hard to study the micro-level of individual behavior so that empirical research from this perspective is virtually non-existent and widely called for (Feoktistova, 2014; Osipian, 2007; Osipian, 2008; Waite and Allen, 2003). The lack of empirical research is particularly surprising because bribery is an alarming

signal for the loss of HE's objectivity, its honesty, and of the ethical standards which lie at the value-based foundations that justify the traditional privileges and the autonomy granted to institutions of HE by the general public (Altbach, 2005; Heyneman, 2011). 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) foundations. As such, we respond to prior calls for research (Petrov and Temple, 2004; Osipian, 2008; Makel and Plucker, 2014; Chapman and Lindner, 2016) by filling the wide gap of scholarship on personality aspects influencing the act of bribery in the HE context – see, for instance, Petrov, and Temple (2004) – by relating it to students' stress levels (i.e. study-related burnout) and, hence, we advance the field's theoretical and empirical insights on the antecedents of bribery in HE.

The two main independent variables in our study are burnout and students' commitment to the public interest (CPI). Other disciplines argue that burnout increases individuals' likelihood of engaging in deviant behavior, of which bribery is a prominent example (Pulich and Tourigny, 2004). Specifically, burnout is argued to being strongly correlated with neuroticism, i.e. individuals' tendencies toward being depressed, anxious, emotionally erratic, and low on self-esteem. These traits make personalities especially vulnerable to choosing desperate measures in challenging life situations such as failing important exams at university that might result in study failure (Bianchi, 2018; Connelly and Ones, 2008; Portoghese et al., 2018).

Burnout is a severe and increasingly prevalent condition among university students which implies that desperate measures such as bribing lecturers might become a more wide-spread phenomenon in the future (Portoghese et al., 2018). Consequently, we postulate that students suffering from study-related burnout are more likely to engage in bribery (Everall

and Paulson, 2004). Furthermore, we follow prior ideas by Davis and Welton (1991), Glover, Bumpus, Logan, and Ciela (1997), Fritz, Arnett, and Conkel (1999), and Moore (2007) by exploring whether students' CPI moderates this likelihood, assuming that students who feel emotionally drained by their studies would still refrain from engaging in bribery 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 is exceptionally sparse for these countries (Osipian, 2007; Osipian, 2008).

Respondents are students at four large public universities in three European countries: Belgium, the Netherlands, and Germany. The findings are based on a quasi-experimental research design in which students' intent to bribe was measured with a pre-validated multi-item factorial variable and with 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. We complemented the quasi-experiment with a questionnaire on study-related burnout, commitment to the public interest, and attitude-based as well as socio-demographic control variables that are indicative for deviant and risky behavior, i.e. risk propensity (Berninghaus, Haller, Krüger, Neumann, Schosser, and Vogt, 2012), gender, age, community of faith (Conroy and Emerson, 2004; Randolph-Seng and

Nielsen, 2007), and field of study (Alatas, Cameron, Chaudhuri, Erkal, and Gangadharan, 2009; Nichols, 2017).[1]

This original research design directly responds to recent appeals by Petrov and Temple (2004), Osipian (2008), Makel and Plucker (2014), 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, and Beugelsijk, 2017). Second, by replicating our study in three Western European countries, this project focuses on countries in which bribery in HE is often (falsely) perceived as a marginal problem and, consequently, severely understudied (von Arnim, 2003; Chapman and Lindner, 2016), although it is likely that these countries' HE systems suffer from similar degrees of bribery as other OECD countries (Chapman and Lindner, 2016). Third, by replicating our research with three independent but comparable samples of university students in three countries, our empirical research strategy ensures high internal and external reliability and high validity of the findings by warranting precision and accuracy (Freese, 2007; Hedges, 2019; Makel and Plucker, 2014). Fourth, the findings of the study are not only relevant for scholars but also for practitioners who could refer to the results in order to develop more

[1] Prior research by Conroy and Emerson (2004) indicates that individuals who saliently associate with a community of faith are less likely to engage in deviant behaviour in general (Randolph-Seng and Nielsen, 2007) and that religious HE students are particularly less likely to engage in bribery and academic misconduct (Yu, Glanzer, Johnson, Sriram, and Moore, 2017). In accordance with Holland's (1985) theory of vocational preferences, a large number of studies – e.g. by Ekehammar, Nilsson, and Sidanius (1987), Hackett and Lent (1992), and Olsen, Hjorth, Harmon, and Barfort (2019) – show that students self-select into different fields of studies (e.g. economics vs. social sciences) not only based on their desired professional career opportunities in their later lives but also because students associate different schools of thought with different study fields (e.g. a more welfare-oriented behavioural paradigm with sociology as compared to a more self-serving rationale with economic and management studies). Students, hence, self-select in accordance with their ethical and socio-political attitudes to maximize person-environment fit (Ekehammar, Nilsson, and Sidanius, 1987; Pike, 2006). Consequently, we use study field and religion as control variables to make sure that our samples are comparable cross-nationally and that variance is not nested unobserved in these latent factors.

accurate awareness campaigns in order to ensure a more effective prevention of micro-level bribery in HE.

Theory

Bribery

Ramdani and van Witteloostuijn (2014, p. 1) define 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 (i.e. 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). The briber can also offer emotional stimuli that include the removal of undesirable sentiments such as guilt from the bribe-taker by using soothing and reassuring narratives but also other emotional of 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 students have the opportunity to offer a bribe to influence their lecturers' decisions and, secondly, because the common situation of an eye-to-eye student-lecturer consultation creates an especially vulnerable space of discretion that can be abused to mantle bribery.

The scientific discourse identifies diverse antecedents of bribery. From a macro perspective, HE bribery is rooted in the socio-cultural, economic, ethical, and institutional

environment (Osipian, 2007; Ramdani and van Witteloostuijn, 2012). Although empirical evidence for Belgium, Germany, and the Netherlands is still scarce, quantitative and qualitative research from Russia (Osipian, 2007; Petrov and Temple, 2004) and the countries of former Yugoslavia (Sabic-El-Rayess and Mansur, 2016) show that apart from mundane monetary transactions, reciprocal bribery in the form of informal favoritism is a very prevalent practice in HE in these countries. Studying bribery in HE-contexts in Africa, Australia, China, India, and Russia, Mohamedbhai (2016) – in line with research by Downes (2017) – presents examples such as monetary transfers in exchange for a Ph.D. title, favoritism in the form of dubious appointments of professorships, and the extortion of money for handouts and grades. Other authors argue that bribery is also rooted at the meso-level (den Nieuwenboer and Kaptein, 2008; Heyneman, 2014), especially in organizations in which supervisors' power of sanctioning misconduct is diminished by a lack of transparency and in which members are stressed and pressured into committing unethical behavior. Furthermore, prior research by Martin, Cullen, Johnson, and Parboteeah (2007), Ramdani and van Witteloostuijn (2012) and Jávor and Jancsics (2016) emphasize the critical importance of individual micro-level attributes for the likelihood of individuals choosing to actually engage in bribery. Individual characteristics such as age, gender, and education, but also personal risk preferences and psychological and motivational factors such as stress and personal values have a decisive influence on the likelihood that an individual will offer and / or accept bribes (Alatas, Cameron, Chaudhuri, Erkal, and Gangadharan, 2009; Nichols, 2017). Surprisingly, there is only scant research addressing these micro-level factors in the context of HE to-date.

Shades of Bribery

As a complex and multifaceted phenomenon, bribery comes in different shades of severity and visibility (Osipian, 2007; Ramdani and van Witteloostuijn, 2012). Heidenheimer

(2009) for instance differentiates between *white*, *grey*, and *black* forms of bribery. *Black bribery* is the most direct, transactional form of exchanging money for any type 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 forms of bribery. *White bribery* is the subtlest form of HE bribery because neither goods nor reciprocal non-monetary 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 and Lindner, 2016; Osipian, 2007). Because unethical behaviors – of which bribery is a clear example of – are subject to social desirability bias so that we hypothesize that (Randall and Fernandes, 1991):

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

Burnout

Burnout among HE students has become a severe problem (Porthoghese et al., 2018). With the Bologna reforms in the early 2000s, students are increasingly faced with growing demands, especially with a higher (perceived) work load and a 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 important exams is directly related to physical and psychological symptoms of study-related burnout and a substantially higher likelihood of adverse outcomes such as intent to quit, poor academic performance (Salanova, Schaufeli, Martínez, and Bresó, 2010; Schaufeli, Martínez, Marques-Pinto, Salanova, and Bakker, 2002), and low coping effectiveness, which might result in desperate measures (Dwyer and Cummings, 2001; Gan, Shang, and Zhang, 2007). These 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).

Unsurprisingly, the concept of study-related burnout in HE has recently gained considerable scientific attention (Dyrbye et al., 2008; Jacobs and Dodd, 2003; Koeske and Koeske, 1991; Neumann, Finaly-Neumann, and Reichel, 1990; Salanova, Schaufeli, Martínez, and Bresó, 2010; Stoeber, Childs, Hayward, and Feast, 2011) but its key foundations date back to Freudenberger (1974). In his pioneering work, Freudenberger (1974) conducted case studies with volunteers engaged in health centers that treated people for drug and alcohol abuse to explore the specific demands of these volunteers' 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 challenging voluntary work. Later, Maslach, Jackson, and Leiter (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 and 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 and 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 and Schaufeli, 1996). Instead, developing burnout is especially likely in contexts in which people experience substantial levels of emotional stress in executing their tasks, high personal engagement and identification with the task, and in which people's perceived locus of control is relatively low (Schmitz, Neumann, and Oppermann, 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 and 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, Childs, Hayward, and Feast, 2011). Yet, research on the adverse effects of burnout on behavior in the research field of HE remains fairly limited. Based on a large sample of both students and lecturers in the U.S., Misra, McKean, West, and Russo'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, and to abusing themselves and others physically and emotionally. Ross, Niebling, and Heckert (1999), 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, consequently, deviant behavior as an (often desperate) coping mechanism (Jacobs and Dodd, 2003).

For instance, Ceschi, Sartori, Dickert, and Costantini (2016) and Jacobs and Dodd, 2003) found an empirical link between overwhelming job demands, burnout, and deviant behavior at the workplace that is directly transferable to the situation of university students': Deviant behavior is defined as an individual voluntary engaging in behavior that violates institutionalized norms of an organization and threatens the wellbeing of said organization, such as bribery (Pulich and Tourigny, 2004). Penney and Spector (2005), Robotham and Julian (2006), Kalliath, O'Driscoll, Gillespie, and Bluedorn (2007) also provide empirical evidence that deviant behavior is linked with burnout because individuals suffering from burnout feel more depressed, more anxious, more emotionally erratic, and lack self-esteem, all of which are risk factors that increase the likelihood of deviant behaviour (Bianchi, 2018; Connelly and Ones, 2016). Prior studies on deviant behavior on the workplace show that such negative affectivity and burnout are also strongly correlated with a higher likelihood for engaging in unethical behavior in the workplace to cope with undesired events such as failure in important tasks (Penney and Spector, 2005; Robotham and Julian, 2006). Following these streams of prior research, it is logical to assume that student burnout could be directly related with higher chances of acting corruptly, especially if individuals are agitated about their current study experience, e.g. in situations of exam failure, which is a major source of student stress (Penney and Spector, 2005; Robotham and Julian, 2006). Consequently, we hypothesize that:

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

Commitment to the Public Interest

Individuals' decision on whether or not to engage in unethical behavior – even if they are at the brink of burnout – might be influenced by other motivations nested within the individual, especially their commitment to the public interest (CPI). 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 especially when being faced with tough decisions (Kim and Kim, 2016; Kwon, 2012; Wright, Hassan, and Park, 2016). More specifically, developing a strong moral code directed toward the immediate and long-term interests of society as a whole assists individuals in self-regulating their actions toward honest and socially desirable behavior so that they become less likely to engage in bribery and other forms of corrupt behavior (Ajzen, 1991; Davis and Welton, 1991; Glover, Bumpus, Logan, and Ciela, 1997; Olsen, Hjorth, Harmon, and Barfort, 2019). One potential explanation on why individuals with high moral standards are less likely to engage in desperate measures such as bribery is provided by Fritz, Arnett and Conkel (1999) and Wright, Hassan, and Park (2016) who observed that people characterized by high ethical standards were more committed to the public interest in general. This commitment enables them to resist exploiting opportunities for selfish reasons more effectively especially if serving their self-interest is disadvantageous to society. 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 (Olsen, Hjorth, Harmon, and Barfort, 2019). Consequently, we assume that students with a high 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, hence biasing their response to explicit questions related to their likelihood to bribe and to accept bribes even in the anonymity of online surveys (Petrov and Temple, 2004). Quantitative quasi-experiments[2] using vignette-based treatments are a particularly valuable remedy for this problem because they help reveal the (latent) mechanisms that determine people's likelihood to engage in bribery while 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 a certain context as specified within the narrative of the vignette (Hughes and 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 diminished for the respondent. Thus, vignettes have the power to systematically manipulate and trigger context-

[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 project, this was not possible because the ethical standards of using the samples at hand did not allow us to contact students directly for follow-ups in order to secure respondents' full anonymity. We encourage researchers planning to conduct replications of the current study to employ a multi-wave panel if possible.

dependent behavior at high degrees of both internal and external validity (Aguines and Bradley, 2014).

The current study involves three quasi-experimental vignette treatments that differ regarding the information given to describe the shade of bribery (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. The treatment comprises 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 for a failed exam. 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 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 the faculties in which the samples were raised. Adequate pretests of the treatment stimuli were conducted before the experiment was rolled out (Wilson and White, 1998). In the prospect of small to medium-sized effects (Cohen's $d \leq 0.3$; power = 0.8; $\alpha = 0.05$), samples should comprise at least $n = 176$ respondents (Ellis, 2010), which has been achieved for each country sample. The raw data was strictly pre-stratified for missing values and repetitive response patterns so that the final datasets comprise only complete responses.

The study design consists of four parts in total: 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, van Witteloostuijn, and Beugelsijk, 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 the faculties for business, economics, and social sciences of two large Dutch, one Belgian, and one German university. All institutions were selected because they represent particularly typical specimen of state-funded public organizations offering the full canon of study fields (“full universities”) and large student samples potentially representative for the full student population in these countries. We selected these three Western European countries because the HE sector of

Germany, Belgium, and the Netherlands are highly comparable: They apply the same type of admission system into HE guaranteeing the application of a standard procedures for admittance in student selection and apply comparable standards regarding academic rigor as regulated by public law in each of the three study countries, respectively (Haj, Geanta, and Orr, 2018). 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 faculty-wide. The sample comprises $N = 624$ respondents and is slightly dominated by female participants (53.2%) in total. Respondents are on average $M = 23.2$ ($SD = 4.4$) 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, Weißmüller, van Witteloostuijn, Cannaerts, Coreynen, Philipsen, and Vanderstraeten's (2019) 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 described in a corruption-related vignette (see appendix A.1 for more detail) using four dimensions: *likelihood*, *justification*, *affect*, and *mistake* (reversed), which are coded as five-point Likert-type items ranging from 1 = 'absolutely disagree' to 5 = 'absolutely agree'. The four dimensions are mean sum-scored to create *BRIBE*. The validity of this aggregation procedure was controlled with an exploratory factor analysis (*varimax* rotated with Kaiser normalization for item correlation, Chi^2 (6) = 2,622.98, $p < 0.000$; factor item uniqueness ranges from $U = 0.27$ to 0.46; Kaiser-Meyer-Olkin $KMO = 0.83$), which confirmed high

internal construct 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 α = 0.874), indicating high 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, Martínez, Marques-Pinto, Salanova, and Bakker's (2002) well-established *burnout scale for university students* to assess the role of study-related stress as a factor influencing the likelihood that students accept the use of bribery. Schaufeli, Martínez, Marques-Pinto, Salanova, and Bakker's (2002) scale is the result of a rigorous multi-national replication study based on the *Maslach Burnout Inventory* (Maslach, Jackson, and Leiter, 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 and its role in promoting them to engage in unethical behavior.

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 (Grant, 2008; Perry and Wise, 1990). 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 response values ranging from 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 such as universities.

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, Petry, and Johnson'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, Petry, and Johnson's (2009) measure is very reliable in predicting not just preferences but also real choice behavior under risk (Green and 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 pooled 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 of bribing (*BRIBE*) while 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 (Glover, Bumpus, Logan, and Ciela, 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

[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.

realism of the treatment condition). The pairwise correlation matrix for all study and control variables is presented in appendix A.3.[4] 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 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 M = 25.84 (SD = 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 public university in Germany. Participants score above average on Schaufeli, Martínez, Marques-Pinto, Salanova, and Bakker's (2002) burnout scale (M = 3.02, SD = 0.87), hold relatively high levels of CPI (M = 5.63, SD = 1.06) and are revealed to be relatively risk averse (M = 0.62, SD = 0.59) but with a high degree of variance within the sample.

For this sample, Schaufeli, Martínez, Marques-Pinto, Salanova, and Bakker'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

[4] Pairwise correlation analysis revealed that respondents' study field and community of faith does not correlate with the two central variables of our study BRIBE and Burnout ($\rho = 0.02$, $p > 0.10$) and estimating the robust regression models with these two variables would in decreased model fit (pooled: $F(11, 583) = 113.74$, $p < 0.000$). Consequently, study field and community of faith were only used in the descriptive analysis of the samples to guarantee successful sample balancing.

(Cronbach's $\alpha = 0.72$; average IIC = 0.818; Bartlett's test for sphericity: 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 $M = 22.47$ ($SD = 3.65$) years old) who mainly study for degrees in business administration (46.8%) and business engineering (24.1%).

Study participants are predominantly non-religious (49.6%) or of roman-catholic confession (40.0%), report relatively high CPI (M = 5.78, SD = 0.94) and an above-average level of study-related burnout (M = 3.01, SD = 0.51).

Across all vignette treatments, respondents in study 2 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 unto 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 very 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* has 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 and economic policy (31.3%) at two large Dutch universities. Respondents are on average a little bit younger than respondents in studies 1 and 2 (M = 21.13, SD = 2.82), and predominantly non-religious (67.7%). They report above average levels of study-related burnout (M = 3.16, SD = 0.56) and a relatively high level of CPI (M = 5.50, SD = 1.10). Similarly to study 1, the scale measures are highly reliable and robust (Burnout: Cronbach's α = 0.88, average IIC = 58.5%; CPI: Cronbach's α = 0.86, average IIC = 70.6%, Chi² (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 (β_1 = 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). Note, however, that both of these coefficients are relatively small regarding effect sizes. 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 substantiate 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) – although this effect is rather small – 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 underlining the high ecological reliability of our three country findings and the merit of the replication study design (Freese, 2007; Makel and Plucker, 2014). 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*. Conversely, this implies that respondents are much more accepting of the use of white bribery – i.e. psychological influence tactics – to persuade their lecturers to reconsider their grades and, hence, pass the previously failed 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 country 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 replication 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 a minor but influential factor that inhibits academic misconduct.

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

Discussion

This article makes two major theoretical and methodological contributions. In terms of theory, it is the first article to integrate and test the hypothesized relationship between two important challenges in HE – bribery and student burnout – and to analyze this relationship from a student-centered perspective. In terms of methods, our study employs a novel quasi-experimental research design replicated in three Western European countries. Consequently,

this study is a direct response to explicit appeals by Osipian (2008), Petrov and Temple (2004), Osipian (2008), Makel and Plucker (2014), and Chapman and Lindner (2016) calling for scholars to conduct rigorous systematic research on corruption in HE that identifies not only the symptoms but rather the causes of HE corruption (Glendinning, Orim, and King, 2019).

The findings clearly confirm that students on the edge of a burnout are more likely to use bribery as a means to pass a failed exam: Pooled analyses indicates 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, Schreiber, Geisel, MacPherson, Ernst, and Lejuez (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. Across all three countries, the findings of the replication studies were mostly consistent, increasing the credibility and external validity of the findings brought forward (Freese, 2007; Hedges, 2019). However, in Belgium this relation was revealed to being statistically non-significant despite being of an equally large effect size compared with the studies in Germany and the Netherlands. One reason could be that, according to Hofstede (2003), the level of uncertainty-avoidance in Belgium is considered as comparatively high and since bribery is typically a risky endeavor, university students in Belgium might be less unanimously willing to engage in bribery compared to respondents from Germany and the Netherlands who generally score significantly lower on Hofstede's (2003) measure of uncertainty avoidance.[5]

[5] In Hofstede's (2003, p. 151) large scale country culture study, respondents from Germany scored on average $M = 53$ on uncertainty avoidance, respondents from the Netherlands $M = 45$, and respondents from Belgium $M=80$, which is one of the highest values of all countries studied. (Values controlled for respondents' age; $M=53$, $SD = 24$; *min*. = 31; *max*. = 112).

However, the relationship between bribery and burnout is strongly contingent on the type of bribery. The 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 reconsider a failed exam. This finding does not only reveal that university students, indeed, distinguish sharply between different shades of bribery but also that lighter shades – especially emotional influence tactics (white bribery) – are hardly perceived as corrupt behavior at all and are, hence, socially acceptable for most students in our samples. This is a troubling finding because it indicates that students are largely unaware that this kind of behavior is already a form of HE bribery: Even if (implicitly) regarded as socially acceptable, applying manipulative emotional influence tactics still aims at granting individuals illegitimate privilege compared to their fellow students who refrain from doing so, hence, undermining the principles of equal treatment and trust in the fairness of examination in HE.

Furthermore, findings show that students with high commitment 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 relevance of appealing to students' ethical believes to direct individuals toward making socially acceptable decisions. Contradicting prior empirical research by, for instance, Trevino (1986), Ajzen (1991), Glover, Bumpus, Logan, and Ciela (1997), and Ritter (2006), our findings are in line with arguments 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 study-related misbehavior – for instance by cheating in their exams and by bribing lecturers – those individuals who *do* engage in this academic misconduct will *still* report that they are satisfied with their behavior from an ethical perspective. This phenomenon 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 behavior in the context of organizations and work for decades (Festinger, 1962; Moore, 2007). The cognitive dissonance theory suggests that 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 experience psychological discomfort that will motivate them to reduce the cognitive dissonance by consciously or unconsciously rationalizing their behavior and, thus, justify it for themselves and others by either adding new parts to the cognition to fix the inconsistencies or by avoiding social situations that would result in discomfort and emotional and cognitive burden through exposure of the misbehavior (Festinger, 1962).

A second explanation of the relatively small correlation between holding high ethical standards and the likelihood of engaging in study-related bribery observed in the current study relates to the phenomenon of moral disengagement. Moral disengagement describes the conscious or unconscious process of dissociating individuals' own behavior from the standards of morality they would normally deem legitimate, thus suspending the moderating influence of holding high ethical standards on behavioral self-regulation (Moore, 2007; Tsang, 2002). The result that CPI is only marginally related with the likelihood of engaging in bribery emphasizes the weakness of merely reinforcing ethical appeals to prevent bribery and it illustrates the limitation of such appeals. This is a particularly important result for practice because it indicates that cases of bribery in student-lecturer consultation can hardly be prevented by moral appeals alone but that they should rather be addressed by making adaptations in procedural and organizational structures, resonating with recommendations by Denisova-Schmidt (2018). In practice, this can be achieved in a number of ways but we particularly recommend implementing a threefold strategy: First, developing and actively promoting explicit and transparent codes of conduct to enhance both students' and lecturers' awareness of the danger and different shades of HE. Second, the introduction of explicit

criteria and procedures for handling cases of bribery will nurture a sustainable culture of transparency and inhibit bribery intent by engaging (Fritz, Arnett, and Conkel, 1999). Third, actively involving students, tutors, and lecturers in the development and implementation of anti-bribery policies also calls for mutual awareness of each other's actions to reduce incentive and opportunities for misconduct (Zamaletdinov, Yudina, Lavrentyeva, Savva, and Pugacheva, 2016). For instance, practitioners seeking to reduce the likelihood of bribery when meeting with students wishing to discuss their exam results might want to ask another colleague to join them (four-eye principle) in critical situation to serve as an additional deterrent for students who are willing offer bribes.

Although commitment to the public interest only marginally decreases the likelihood of engaging in bribery, pooled analyses confirmed that higher levels of CPI moderate the relationship between burnout and BRIBE. This finding holds for Belgium and the Netherlands but not in the case of our German sample, indicating that country culture-specific differences might play a role. Williams (2017) argues that the German culture is more strongly influenced by Kantian philosophy compared to the Netherlands and Belgium. Consequently, German respondents might be 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.

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 morally acceptable as a means to manipulate lecturers.

Like any empirical study, this research is subject to limitations. We use data from a vignette-based survey (quasi-)experiment and do 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 and Fernandes, 1991). Future studies might also 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 bribe by using the BIG-5 personality inventory, for instance. 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. Also, we did not explicitly control for grade point average (GPA) because data protection rules prohibited us from asking the students in our samples about this information since it could be used to indirectly identify individuals. Yet, prior research by McCarthy, Pretty, and Catano (1990) and Stallman (2010) revealed that lower GPA is significantly related with psychological distress, mental health issues, and student burnout in particular. Consequently, we do encourage scholars conducting future replications of our study design with other student populations to include this indicator as a valuable control variable.

Furthermore, the current study solely follows the perspective of the agent offering a bribe. Consequently, this current study cannot make assumptions about the extent to which the actions of one agent (the bribe-offerer) would effectively lead to a transaction between two agents (bribe-offerer and bribe-taker) 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 socio-cultural perception of bribery to determine whether the effects revealed by the current study are idiosyncratic or generalizable. This is important because – although our main findings were replicated at large in three independent countries – our study essentially relies on convenience samples nested within specific organizations (i.e. the universities) because study participation was voluntary. While virtually all samples in social science research are convenience samples, Landers and Behrend (2015) point out that this sampling strategy has consequences for the generalizability of the findings derived from such data because convenience sampling with HE students imposes range restrictions that leads to attenuation of effect sizes observed. For instance, the strong relationship between burnout and *BRIBE* observed in our data might actually be artificially deflated in comparison to if we had had the opportunity to conduct this study with the full student population at the partaking universities because individuals who show severe symptoms of study-related burnout might be comparatively more unable or unwilling to respond to the survey invitation compared with the general student population and they might, hence, be *under*represented. Yet, replicating our study in three countries is a partial remedy to this issue because it allows us to generalize *across* three convenient samples and show that there is, indeed, a systematic relationship between bribery and burnout in students, but we assume that replications with

full faculty-wide population-based samples will result in even larger effect sizes (Freese, 2007; Landers and Behrend, 2015; Meyer, van Witteloostuijn, and Beugelsijk, 2017).

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" and realize undue individual advantage. While our study focused on the micro-level roots of HE bribery, we found clear indications that the institutional context might also play an important role, calling for future research into meso and macro-level factors of HE bribery. Specifically, studies in countries in which HE access is more restricted and in which students are systematically incentivized to behave more strategically and competitive for instance because tuition fees are very high or the academic rigor and quality of education is dispersed more widely nationwide as to make access to leading institutions severely competitive (e.g. in the US) will reveal valuable insights into the role of institutional, structural, and economic causes of academic misbehavior in students.

In summary, our findings are especially relevant for practice. We advise practitioners to not only focus on the more obvious shade of black bribery but to create awareness among their students and faculty for the more subtle forms of bribery such as emotional pleading or offering a helping hand because our study shows that individuals are much more tolerant towards and, hence, susceptible to those 'white' and 'grey' shades of bribery than to the "classic" brown envelop. Consequently, HE institutions could benefit from promoting awareness campaigns and practitioners' workshops that enable lecturers to better recognize these influence tactics. Also, universities will benefit from educating students that such emotional appeals are inappropriate and potentially punishable in accordance to the institution's ethical code of conduct. By engaging all stakeholders equally and by embracing

ethical introspection, HE institutions can master the "shift from a mode of self-protection and denial to a mode of transparency and active engagement" (Heyneman, 2014, p. 5).

The research design presented in this study came with a few methodological advancements: The replications added to the robustness and external validity of the findings (Makel and Plucker, 2014). Taking into account the specific institutional contexts from three different countries but with comparable institutional settings enabled us to identify more nuanced findings. As a result, unexpected inconsistencies in the findings between the countries were more easily tracked down, resulting in a more reflexive approach. Consequently, the combination of a multi-lab replication study design based on (quasi-)experimental data offers the prospect of a particularly promising research field for future (replication) studies that will elaborate 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%
Burnout	3.02 ± .87	3.01 ± .51	3.16 ± .56
CPI	5.63 ± 1.06	5.78 ± .94	5.50 ± 1.10
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
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

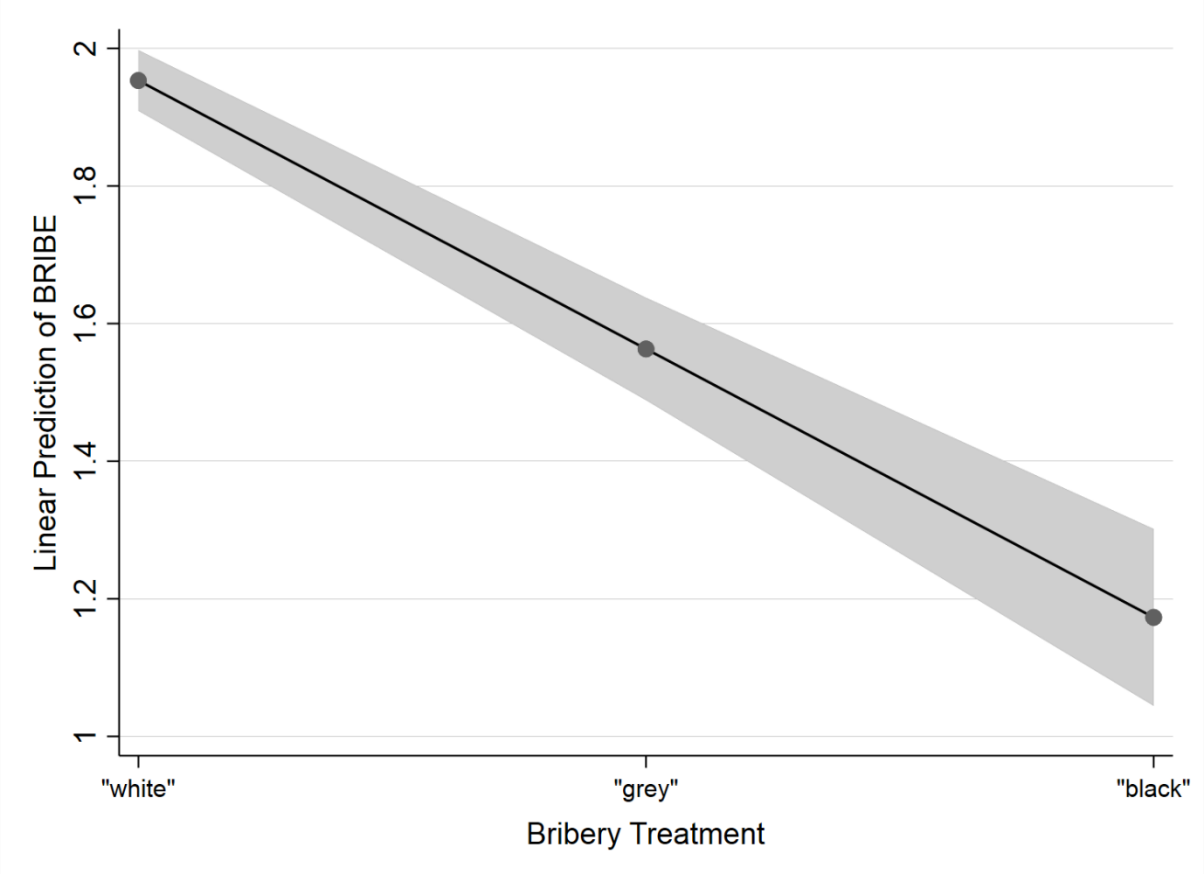
Overview of findings

Hypothesis			***Study 1***	***Study 2***	***Study 3***	***Pooled data***	***Interpretation***
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)

1. Introduction to bribery scenarios [all study participants]:

'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.

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. What would you do in the following two situations?'

2. Vignettes:

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*.

A. "Emotional plea": white 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. 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.'

	B. "Car mechanic": grey 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. 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 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						
C1	White & grey bribery treatment	412	2.106	.928	1.000	4.750
C2	Black & white bribery treatment	407	2.044	1.038	1.000	5.000
C3	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*

BRIBE		***t***	***p***	***|d|***
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 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 Correlations and Reliabilities

		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
Study variables														
1.	BRIBE	–												
2.	Treatment	-.53***	–											
3.	High realism	.60***	-.48***	–										
4.	Burnout	.04	.01	-.01	–									
5.	CPI	-.09**	-.01	-.00	-.01	–								
Control variables														
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***	–		
12.	Religiousness	.02	.01	.04	-.02	.04	-.10**	.07*	.08**	.27***	-.13***	-.16***	–	
13.	Study field	.02	.02	.04	-.02	.08**	.07*	.02	-.02	.08**	.26***	-.35***	.05	–

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