Does Extrinsic Motivation Moderate the Relationship Between Perceived Unfairness and Dishonest Behavior?

Rebekka Damm

S4729102

Department of Psychology, University of Groningen

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Supervisor: Ben Gützkow

Second evaluator: C. J. Walker Clarke

In collaboration with: Isabel Bünger, Isabelle de Groote, Francesca May, Leopold von Ludwig

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Abstract

Dishonest behavior occurs daily throughout all areas of life, ranging from small lies to academic cheating and tax fraud, and comes at a high cost. Unfair circumstances, such as gender inequality and teacher favoritism, are similarly omnipresent. Research has shown that unfair situations and motivational factors, like extrinsic motivation, can evoke dishonest behavior. However, research has yet to combine these two variables, and many educational institutions emphasize extrinsic rewards. Therefore, it is essential to explore the influence of these factors to prevent dishonesty and lower its costs. This paper explores if perceived unfairness leads to more dishonesty in an academic context and whether extrinsic motivation moderates this relationship. The study used a small sample of students from the University of Groningen. It measured their indicated difficulties as dishonest behavior, rewarded with bonus points, in a comprehension task in an easy and hard condition. A chi-squared test and logistic regression found a non-significant correlation between perceived unfairness and dishonest behavior and a marginally significant interaction between extrinsic motivation and perceived unfairness on dishonest behavior. These findings partially support existing literature, calling for future research to include motivational factors as a moderator of perceived unfairness and dishonest behavior, using a larger sample size and exploring different contexts. Implications highlight the need for educational institutions and organizations to implement policies that foster fairness and intrinsic motivation rather than extrinsic rewards.

Keywords: perceived unfairness, academic dishonesty, extrinsic motivation, academic cheating

Does Extrinsic Motivation Moderate the Relationship Between Perceived Unfairness and Dishonest Behavior?

Many people encounter situations in their daily lives that they perceive as unjust, ranging from social interactions to treatment at work and by institutions like the legal system and schools. Looking at injustice globally, there are numerous examples of unjust circumstances that people deal with. For example, the wealth gap between rich and poor is more significant than ever and will continue to grow (Estes, 2019), and the gender pay gap between women and men is still at a high level (Amado et al., 2018). A feeling of injustice or unfairness influences our behavior, for example, how we react to and cope with it (Wenzel et al., 2017). Ironically, this perceived unfairness can evoke dishonest behavior, which is also a part of our daily lives (Houser et al., 2012; 2016). Such incidents may even lead to a self-sustaining cycle, where unfair treatment evokes dishonest behavior, thereby fostering further unfairness and prompting additional dishonesty (Leib et al., 2019). Dishonest behavior occurs in many ways, such as lies, academic cheating, theft, corruption, and fraud. It is a widespread phenomenon and comes at a high cost for society. For instance, costs incurred through employee theft are estimated to be about 40 billion dollars each year in the US alone (Gross-Schaefer et al., 2000). Additionally, a substantial amount of research has investigated the underlying mechanisms behind dishonest behavior (for a recent meta-analysis, see Gerlach et al., 2019). Furthermore, dishonesty can come at a cognitive cost to individuals through cognitive dissonance (Festinger, 1957). Investigating the individual and situational factors contributing to dishonest behavior is essential to enacting changes that minimize its prevalence.

Looking at the far-reaching consequences of dishonest behavior and its involved price, how does perceived injustice lead to consequent dishonest behavior, and do motivational factors influence this relationship? This paper investigates two factors that possibly influence

dishonest behavior in an academic context: Perceived unfairness and extrinsic motivation. Evidence shows that people are more likely to behave dishonestly when treated unfairly (Houser et al., 2012). For example, employees might steal because they feel underpaid or undervalued, using this injustice to justify dishonest behavior (Chen & Sandino, 2012). Similarly, extrinsic motivation has been shown to be correlated to dishonest behavior in research concerning academic dishonesty (Krou et al., 2021). Both factors are discussed below.

Perceived Unfairness May Lead to Dishonest Behavior

Perceived unfairness, defined as "the general feeling that something is not right" (Finkel, 2001), occurs in all areas of life and often arises from interpersonal interactions and institutional treatment (Mikula et al., 1990). In academic settings, perceived unfairness can include teacher favoritism, inconsistent grading, and unreasonable workloads (Chory et al., 2017; Rasooli et al., 2019). In general, people strongly value fairness and react negatively to perceived injustices (Schmitt et al., 2010; Wang et al., 2024).

One of the reactions to injustice can – perhaps counterintuitively – lead to dishonest and even unethical behavior (Houser et al., 2012; Wang et al., 2024). *Dishonest behavior* involves deception and a lack of honesty to gain an advantage or avoid negative consequences (Gerlach et al., 2019). It can occur in various contexts and forms, is part of our daily lives, and happens worldwide (Ayal et al., 2016). Its costs range from personal, such as the loss of trust, to financial expenses of organizations or institutions (Gross-Schaefer et al., 2000; Heyman et al., 2019). A prevalent setting for dishonest behavior is academia: Academic dishonesty, such as cheating, is a global and well-researched phenomenon (Koscielniak & Bojanowska, 2019).

Moreover, past academic dishonesty correlates with unethical behavior in professional life later (LaDuke, 2013), and people who behave dishonestly once are more likely to do it again (Garrett et al., 2016; Ruedy et al., 2013). Understanding academic dishonesty's

mechanism and prevention is crucial, given its impact on future behavior. If unfair circumstances, whether perceived or objectively measured, evoke dishonest behavior, further measures should be taken to avoid unfairness in any educational institution.

Academic dishonesty often lacks a direct victim, allowing individuals to rationalize it as harmless (Murdock & Stephens, 2007). This rationalization can lower the boundaries of dishonesty and reduce feelings of guilt. Furthermore, people often cheat minimally to maintain a positive self-image (Abeler et al., 2014). Thus, students might only partially copy from peers, additionally justifying their behavior.

Research indicates that beyond self-interest, individuals are sensitive to injustice and that perceived unfairness can lead to dishonest behavior. In a study by Houser et al. (2012), the authors found that perceived unfairness in a dictator game, where one participant unilaterally divides money between themselves and another, increased cheating in a coin flip game and argued that the perceived injustice increases the likelihood of subsequent cheating. These findings are supported by a wealth-inequality study by Gino and Pierce (2009), which investigated the link between perceptions of unfairness and dishonest behavior and found that self-interest alone cannot explain dishonest behavior but that the perception of unfairness influences dishonesty. This means that the drive for justice can outweigh personal gain motives, and therefore, inequity can significantly increase subsequent unethical behavior. This can, in turn, lead to more injustice and perceived unfairness, potentially resulting in more dishonest behavior: Individuals seeking to address perceived unfairness may resort to actions that undermine ethical standards and fairness. Leib et al. (2019) suggest that such dishonest actions can perpetuate a cycle of injustice, as unfair treatment provokes responses that are themselves unjust, leading to further dishonest behaviors. These findings reveal universal psychological responses to perceived unfairness, which are applicable to academic contexts

where fairness is essential. In sum, people may counterintuitively act dishonestly when they experience injustice, leading to more dishonesty and unfairness in the future.

Moreover, cognitive costs are associated with dishonesty: Generally, people dislike perceiving themselves negatively and feel adverse emotions when their behavior conflicts with their ideals (Baumeister, 1997). This discrepancy can cause *cognitive dissonance*, the psychological discomfort from holding conflicting beliefs or values (Festinger, 1957). This tension often motivates individuals to resolve the inconsistency through rationalization, changing one's beliefs or behavior, and neutralization. A substantial amount of research hypothesizes a neutralization mechanism in dishonest behavior (Smith et al., 2002). *Neutralization* can be defined as the justification for engaging in dishonest behavior to avoid disapproval from yourself or others (Sykes & Matza, 1957). People who feel unfairly treated may neutralize their dishonesty to restore a sense of justice and avoid guilt. Altogether, neutralization can be seen as an effort to reduce cognitive dissonance.

In summary, situational factors such as perceived unfairness can induce individuals to behave dishonestly, for example, by cheating in academia (Krou et al., 2021). This may even lead to more injustice and dishonest behavior in the future, as people might feel disadvantaged because others cheated and because they potentially behaved dishonestly before. Additionally, motivational factors can contribute to this cycle of dishonesty, which will be discussed in the following.

Hypothesis 1: Perceived unfairness in an academic setting leads to a higher rate of academic cheating than if no unfairness is perceived.

Extrinsic Motivation and Perceived Unfairness

Deci et al. (1972) define *extrinsic motivation* as striving for external rewards like approval, status, or passing grades. In contrast, *intrinsic motivation* is defined as engaging in an activity for no reward other than performing the activity itself. In practice, this means that

extrinsically motivated students may choose majors leading to high-paying jobs, whereas intrinsically motivated students may genuinely be interested in their study subjects. In university settings, where rewards are often linked directly to future career prospects and financial stability (Ma et al., 2016), students may feel pressured to succeed at any cost, which may include engaging in dishonest behavior. This competitive academic environment prompts extrinsic motivation and might lower boundaries to engage in academic dishonesty.

Moreover, extrinsic motivation may moderate the relationship between perceived unfairness and dishonest behavior. As proposed by Feather (1999), there is a solid theoretical framework for a relationship between motivation, justice, and dishonesty. Highly extrinsically motivated students might justify their dishonest behavior as a response to perceived unfairness, such as when others seemingly get grading advantages. Students driven by extrinsic rewards focus on outcomes over learning (Buzdar et al., 2017), and when they perceive unfairness, they may resort to dishonest behaviors to attain rewards. Furthermore, extrinsic motivation often induces a weighing of benefits against the risks of dishonesty (Mazar & Ariely, 2006). Especially in contexts where unfairness is perceived, extrinsically motivated students might be more likely to engage in unethical behavior, viewing it as a strategy to respond to an unfair system. Additionally, these students are susceptible to the external pressure they perceive (Morris et al., 2022), which can further heighten their propensity to behave dishonestly. Lastly, dishonesty might be reinforced through the competitive environment, where unethical behavior is normalized to achieve goals (Belle & Cantarelli, 2017), potentially perpetuating a cycle of dishonest behavior.

Research on achievement orientation and academic cheating has yielded mixed results. Some studies indicate a negative correlation, while others found a positive relationship (Yaniv et al., 2017). Moreover, a meta-analysis by Krou et al. (2021) found that while intrinsic motivation decreases the likelihood of academic dishonesty, extrinsic motivation increases it.

The authors argue that intrinsic motivation fosters honesty by focusing on the task itself, while extrinsic motivation induces dishonesty as it motivates students to cheat to reach their goals. They might justify their dishonesty through self-interest to achieve a good grade or feel pressured to succeed. The latter is especially prevalent in today's academic environment, emphasizing performance and good grades (Horne et al., 2022). Therefore, particularly in settings that seem unfair, extrinsically motivated students might use dishonesty as a strategy to achieve their goals.

In summary, past research has shown that extrinsic motivation might specifically predict dishonest behavior when unfairness is perceived, warranting further investigation (Gino & Pierce, 2009; Houser et al., 2012). As injustice is an omnipresent factor associated with dishonest behavior involving psychological and monetary costs, it is essential to investigate this relationship. Because academic dishonesty is a persistent phenomenon related to perceived unfairness, exploring students' motivation to engage in dishonest behavior can result in valuable insights. So far, the evidence links perceived unfairness and extrinsic motivation to dishonest behavior (Houser et al., 2012; Krou et al., 2021). Thus, extrinsic motivation might moderate the relationship between perceived unfairness and dishonest behavior through a neutralization mechanism. Investigating this relationship could have far-reaching implications, such as gaining deeper insight into students' motivations and offering educational policy implications to foster intrinsic motivation in students. Addressing this may require discussing the ethical climate in institutions, focusing on issues like high pressure of grades or external rewards. In addition, the findings could be applied to other settings, like competitive fields and economic dishonest behavior, such as tax fraud and corruption.

Still, research has yet to be done to explore this potential relationship. To address this research gap, this study aims to investigate the following additional hypothesis:

Hypothesis 2: Extrinsic motivation moderates the relationship between perceived unfairness and academic dishonesty. More specifically, those with higher levels of extrinsic motivation are even more likely to cheat when they perceive unfairness than those with lower extrinsic motivation.

Method

Participants

Between 06.05.2024 and 16.05.2024, a total of 52 first-year B.Sc. Psychology students completed the study using the University of Groningen online participants' pool SONA. Participation in research, a requirement in a first-year course, was compensated with SONA points contributing to course credits. The final sample included data from 52 students, of whom 39 identified as female, 10 identified as male, and three identified as non-binary or other. The questionnaires were to be completed in English.

Procedure

The current study employed a between-subject experimental design. Experimental condition served as the independent variable, representing the two study conditions ("easy" task; $n = 26$) vs. "hard" task; $n = 26$), and indicated difficulties was the main dependent measure. Ethics approval was received from the Faculty of Behavioural and Social Sciences (BSS) ethics committee at the University of Groningen. This study used deception at multiple points throughout. To obfuscate the true nature of the study, it was divided into two parts. In the first part, participants were asked to complete a questionnaire that included all moderating measures. The questionnaire was introduced as a questionnaire about attitudes toward moral judgment to be used in another project.

The second part of the study featured the experimental manipulation and dependent variable. Multiple steps were taken to induce a feeling of unfairness. The purpose of the study was framed as assessing mechanisms of reading comprehension in two different conditions.

Participants were told they could either receive the "easy" task condition or the "hard" task condition, which was allocated randomly (see Appendix A). In reality, all participants received the same task. The task included reading a text as well as working on a cognitive and reading comprehension task. Participants were deceived about the requirements of the task. They were presented with a visual overview of both conditions, which depicted a short text for the "easy" condition and a long text for the "hard" condition. The text was an excerpt from a cognitive neuroscience article, including many technical terms likely unfamiliar to first-year students.

Additionally, participants were instructed that they should pay close attention to the text as they would later answer questions about it. All were informed of the possibility that correct answers were rewarded with additional bonus SONA credits for good performance. Participants in the "easy" condition were told that they would need to provide correct answers on a majority of questions to receive the bonus, whereas participants in the "hard" condition were told that they would need to answer all questions correctly (see Appendix A). One of the questions was impossible to answer based on the text to guarantee that all participants in the "hard" condition would experience failure.

All these steps were taken to induce a perception that being allocated to the "hard" condition would require substantially more work to earn the same SONA points and be eligible for the bonus and, therefore, would be perceived as overly unfair compared to the "easy" condition. At the end of the study, participants were asked to indicate whether they had any issues with reading comprehension or other problems that could have hindered their performance, which is the main dependent measure of this study. Specifically, they could tick up to six boxes representing various difficulties (see Appendix C). Each box ticked allowed a participant to receive the aforementioned bonus SONA credits, regardless of correctly answered questions. A reminder was provided that participants cannot be identified by the

researchers. Upon completing the study, all participants were debriefed to explain the study's purpose (see Appendix B).

Measures

This study is part of a larger survey; therefore, only measures employed in the current investigation will be described.

Indicated Difficulties

The dependent variable, dishonest behavior, was operationalized as indicated difficulties. For that, participants were provided with the opportunity to be dishonest by ticking boxes of statements about any possible reading and/or concentration difficulties that could have affected their performance. This was introduced to account for legitimate reasons why someone would be disadvantaged in this study. If an induced perception of unfairness indeed leads to more dishonest behavior, more participants would indicate having difficulties in the "hard" condition than in the "easy" condition – to be still eligible for the bonus. Examples of box items included "It is hard for me to pay attention for longer periods of time" or "Something distracted me during the study". All box items can be found in Appendix C.

Extrinsic Motivation

To assess the participants' extrinsic motivation, the English version of the Academic Motivation Scale was used (Vallerand et al., 1992). Four items pertaining to extrinsic motivation were chosen due to their relevance to this study's objectives. They were asked after participants completed the questions regarding reading comprehension, using a seven-point Likert scale, ranging from 1 = *strongly disagree* to 7 = *strongly disagree*. The items started with "I go to University because", followed by "because with only a high-school degree (or equivalent), I would not find a high-paying job later on.", "because of the fact that when I succeed at university, I feel important.", "because I want to have "the good life" later on.", "in order to have a better salary later on." (see Appendix D). These items resulted in $M =$

4.93, *SD* = 1.17, and a Cronbach's Alpha score of α = .828, demonstrating that the items have a strong internal consistency.

Results

All analyses were conducted using SPSS (version 29.0.2.0.) and JASP (version 0.18.3) software.

Descriptive Statistics and Correlations

The independent variable "condition" had two values, "easy" and "hard", with *n* = 26 for each condition. Across all analyses, the dependent variable indicated difficulties was dummy coded (0 = no indication of comprehension difficulties and 1 = at least one comprehension difficulty indicated). Following, a contingency table and a Chi-squared test were computed, which resulted in non-significant results (see Table 1). Figure 1 shows means and standard errors for indicated difficulties in each condition.

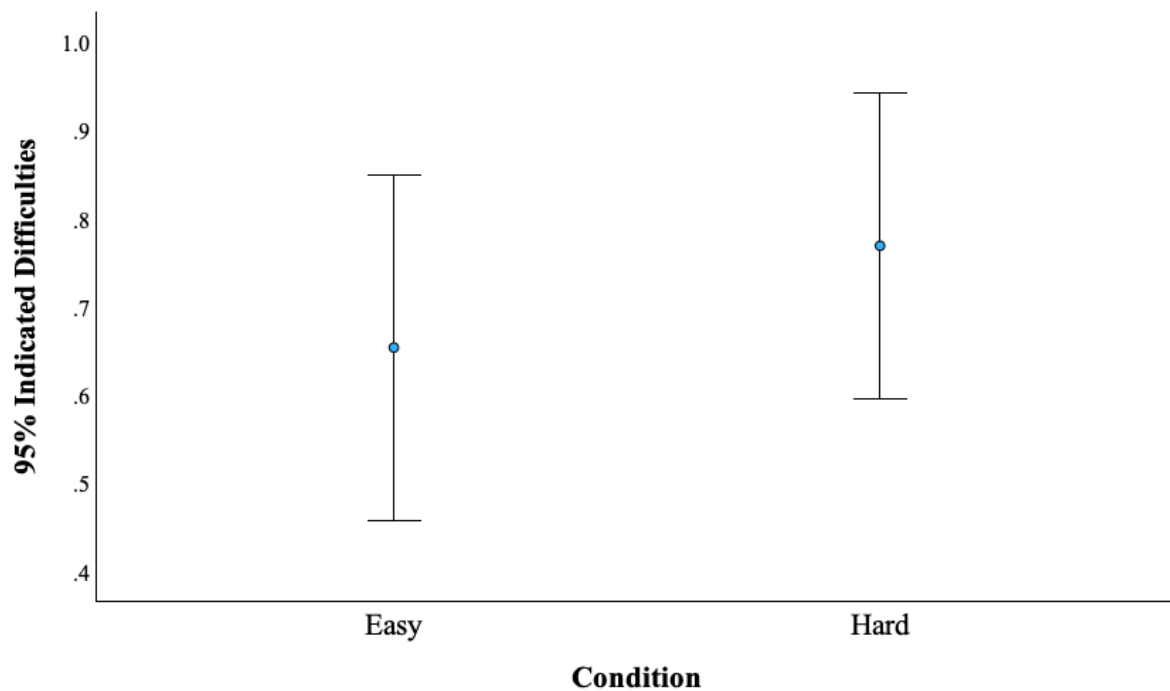**Table 1**

Contingency Table and Chi-Squared Test

Condition	Indicated difficulty		Total
	0	1	
Easy	9	17	26
Hard	6	20	26
Total	15	37	52

Chi-Squared Tests

	Value	df	p
X^2	0.843	1	0.358
N	52		

Figure 1

Confidence Interval of Indicated Difficulties split by Condition

Logistic regression

A logistic regression was conducted to examine the effects of study conditions ("hard" vs. "easy"), extrinsic motivation, and their interaction on indicated difficulties. Extrinsic motivation was centered on the mean. Regarding the main effect of condition (H1), results were not significant ($b = 0.66$, $SE = 0.68$; *Wald* χ^2 (1) = 0.952, $p = .329$). This means that despite a nominal difference in the means of indicated difficulties between the two conditions, it could not be concluded that this difference was statistically significant. Thus, no evidence of dishonest behavior in the "hard" condition was found.

Regarding the interaction effect between study condition and extrinsic motivation on indicated difficulties (H2), results indicated a marginal effect ($b = 1.04$, $SE = 0.57$; *Wald* χ^2 (1) = 3.378, $p = .066$). The coefficient for extrinsic motivation was non-significant ($b = -0.48$, $SE = 0.44$; *Wald* χ^2 (1) = 1.200, $p = .273$). Despite the marginal interaction effect, we did not

find significant evidence that extrinsic motivation interacts with perceived unfairness to predict indicated difficulties. All results can be found in Table 2. Figures 2 and 3 visualize the indicated difficulties dependent on extrinsic motivation for both conditions.

Table 2

Logistic Regression of Extrinsic Motivation and Condition on Indicated Difficulties

Model summary

Model	Deviance	df	X^2	p	Nagelkerke R^2
H0	62.480	51			
H1	57.744	48	4.736	0.192	0.124

Coefficients

Variable	Estimate	SE	z	Wald statistic	df	p
Intercept	0.71	0.43	1.630	2.657	1	0.103
EM	-0.48	0.44	-1.096	1.200	1	0.273
Condition	0.66	0.68	0.976	0.952	1	0.329
Interaction	1.04	0.57	1.838	3.378	1	0.066

Note. Condition coded as "hard" condition. EM = extrinsic motivation, centered. Interaction = extrinsic motivation * condition
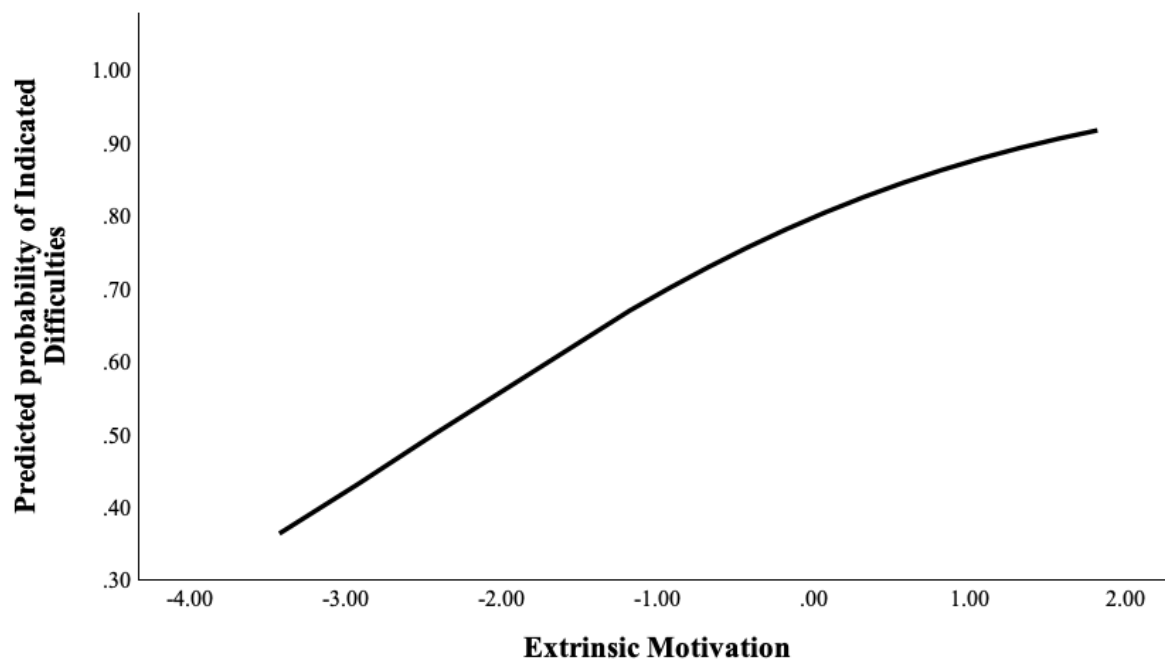
Figure 2

Simple Line of Predicted Probability of Indicated Differences by EM in "Easy" Condition
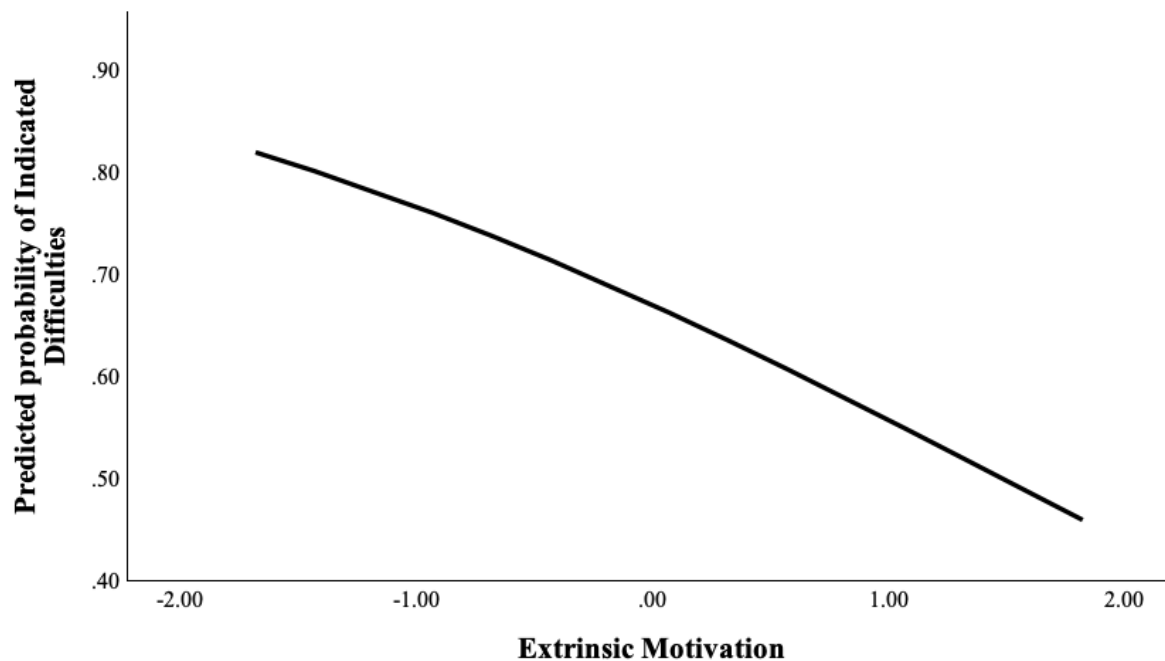
Note. EM = extrinsic motivation, centered.

Figure 3

Simple Line of Predicted Probability of Indicated Differences by EM in "Hard" Condition

Note. EM = extrinsic motivation, centered.

Discussion

Our study explored the relationship between perceived unfairness and academic dishonesty, operationalized through participants' indicated difficulties with a reading comprehension task, and whether extrinsic motivation moderates this relationship. Previous research showed that perception of unfairness can lead to dishonest behavior and that extrinsic motivation can influence academic cheating (Houser et al., 2012; Krou et al., 2021). In this study, we explored the influence of these variables on dishonest behavior in an academic setting. We hypothesized that, first, perceived unfairness increases the likelihood of subsequent dishonest behavior, leading to a higher rate of academic cheating (H1). Second, we stated that extrinsically motivated students are especially likely to behave dishonestly when they perceive unfairness, and, therefore, extrinsic motivation moderates this relationship. More specifically, we expected that higher levels of extrinsic motivation lead to increased cheating behavior when unfairness is perceived than if low extrinsic motivation is present (H2).

The results from our data analysis were not significant for H1. The difference in indicated difficulties between the two conditions ("hard" vs. "easy") was insignificant. However, there was a nominal increase in indicated difficulties in the "hard" condition compared to the "easy" condition, which aligns with our theorizing. Moreover, extrinsic motivation alone was negatively correlated with dishonest behavior, but this effect was not significant. This suggests that extrinsic motivation alone does not significantly predict dishonest behavior in this context. Extrinsic motivation did not significantly moderate the relationship between perceived unfairness and dishonesty (H2). However, the evidence indicated marginal significance of a moderating effect of extrinsic motivation and is inconclusive. Thus, despite the non-significance of H2, our results suggest that further exploration is needed, especially considering the low sample size.

This small sample size reduced our study's statistical power and could have led to non-significant results. A larger sample size might have been necessary to detect a subtle effect with significance. Furthermore, low statistical power can lead to more false positive results, which could be the case for the marginal moderating effect of extrinsic motivation (Ingre, 2013). Therefore, the study's indications must generally be considered with caution.

Looking at the non-significant results of H1, the relationship between perceived unfairness and dishonest behavior may be weaker than presumed. However, due to the low power in this study, this relationship warrants further investigation. Despite the non-significance between perceived unfairness and dishonest behavior, our study supports a trend that aligns with most studies above. As proposed by research, the condition aimed at evoking a perception of unfairness did have more students engaging in dishonest behavior than in the "easy" condition (Gino & Pierce, 2009; Houser et al., 2012; Wang et al., 2024). Our results, therefore, partially confirm the notion of unfairness influencing subsequent dishonest behavior.

The inconclusive but marginally significant results of H2 suggest a trend that extrinsic motivation might moderate perceived unfairness and dishonest behavior in an academic context. This indicates that when students perceive the task as unfair, highly extrinsically motivated students may be more likely to cheat. Notably, Figure 2 suggests that higher extrinsic motivation could be associated with decreased dishonest behavior. Nevertheless, future research is needed to confirm the moderating role of extrinsic motivation with a significant result, and the negative relationship when no unfairness is perceived should be similarly analyzed. Our study also did not explore intrinsic motivation, so no conclusions about extrinsic versus intrinsic motivation can be drawn.

Considering our findings, extrinsically motivated students may be more prone to dishonesty in unfair circumstances, potentially justifying their behavior as a response to

inequity. This aligns to some extent with the suggested theoretical framework between motivation, justice, and dishonesty (Feather, 1999) and prior studies in which extrinsic motivation has been positively correlated with academic cheating (Gerlach et al., 2019; Yaniv et al., 2017). Our study only partially supports this relationship, as extrinsic motivation alone was negatively correlated with dishonesty. Still, the interaction reached marginal significance and thus calls for further investigation.

Limitations and strengths

Our study had several limitations that must be considered, primarily the impact of the low sample size on the overall findings. The low sample size of 52 participants significantly reduced the statistical power, which can lead to a smaller chance of finding significant effects, even if they exist (Cohen, 1992). A larger sample size would be needed to confirm our hypotheses but also to disprove them. This limitation is fundamental when comparing our results to previous studies, such as those conducted by Houser et al. (2012) and Wang et al. (2024), which had larger sample sizes and thus higher statistical power.

Another important aspect is the manipulation of perceived unfairness, framing the same text as "hard" or "easy", which might have needed to be stronger to evoke the intended emotional response in participants. It is also possible that not all students felt treated unfairly by receiving the "hard" text. Because the allocation of the different conditions was made online and not by individuals, for example, in a lab, it is unclear how robust the manipulation mechanism was (Kraut et al., 2004).

Moreover, the measurement of dishonest behavior might not have been sufficiently valid. We hypothesized that indicated difficulties show dishonest behavior because of a difference between the two conditions, although the students with real difficulties should be equally distributed. This theory might have overlooked that the low sample size possibly affected the distribution of participants with real difficulties, indicating that difficulties did not

consistently show dishonest behavior. Also, the measurement of ticking boxes might not include all forms of dishonesty in academic contexts. Lastly, the sample characteristics could have influenced the obtained results. As the study focused on first-year psychology students within one university, leading to participants of similar age, educational status, and ethnicity, generalizability is limited (Henrich et al., 2010). To summarize, in contrast to earlier research, we implemented an academic setting with subtle manipulation and a small sample size with low power. These differences could account for the non-significant results and indicate a lack of methodological robustness.

However, our study has several noteworthy strengths: Measuring actual dishonest behavior rather than self-reports provided reliable data and direct evidence of participants' dishonesty, which minimized the weaknesses of biases, such as social desirability bias, which can alter the true extent of dishonest behavior (Podsakoff et al., 2003). Unlike many studies that used self-reports or game contexts (Gino & Pierce, 2010; Houser et al., 2012; Wang et al., 2024), implementing a realistic academic scenario enhanced ecological validity and generalizability. In our study design, participants gained bonus points for a university course if they indicated difficulties in a real-life setting, making the results generalizable to educational environments (Anderson-Cook, 2005).

Furthermore, the controlled experimental conditions further strengthen our study's methodological robustness. In contrast to scenarios reliant on participant recollection or hypothetical responses, our approach precisely manipulated perceived unfairness. We ensured that observed behavior directly responded to the experimental conditions rather than external influences or internal biases, thus providing a clearer causal link between perceived unfairness and dishonest behavior (Anderson-Cook, 2005).

Lastly, the Academic Motivation Scale is a well-researched and highly reliable measure (Vallerand et al., 1992), displayed by the high internal consistency between our items.

Theoretical and Practical Implications

Looking at the study's implications, there are several aspects to mention. Our findings suggest that models of dishonesty should integrate motivational factors, particularly in settings where fairness could be limited. However, the negative moderating effect of extrinsic motivation in the "easy" condition challenges existing theories about motivation and academic dishonesty (Gerlach et al., 2019). It suggests that extrinsic motivation does not always influence dishonest behavior across different conditions of perceived fairness. For example, extrinsically motivated individuals might be less likely to engage in dishonest behavior under conditions perceived as fair or easy.

Moreover, although the hypothesized main effect was non-significant, the observed trend supports the hypothesis that perceived unfairness can evoke dishonest behavior and potentially the theory of a "cycle of dishonesty" (Houser et al., 2012; Leib et al., 2019; Wang et al., 2024). This reinforces theories that perceptions of unfairness influence dishonesty, possibly leading to a self-sustaining cycle of unfairness and dishonesty. However, to confidently confirm such a cycle, a post-test would be needed, involving a setting where fellow participants note this dishonesty, evoking perceived unfairness again.

We hypothesized that dishonesty could lead to cognitive dissonance and that students may neutralize their actions. In our study, dishonest students might have perceived their academic dishonesty as a justified response to an unfair system, which aligns with the findings of Smith et al. (2002). A post-test assessing how participants rationalized their behavior would be needed to draw any solid conclusions about whether neutralization played a critical role in dishonest behavior under conditions of perceived unfairness. Furthermore,

participants could not witness other students indicating difficulties, but they probably assumed others would use the opportunity to earn bonus points. This peer behavior might have further prompted them to engage in dishonest behavior (Moore & Gino, 2013). Nevertheless, a post-test should also explore the peer effect to make inferences.

Our study's practical implications for educational policies are noteworthy. Given the role of perceived unfairness in potentially influencing dishonest behavior, educational institutions should strengthen their policies to increase fairness and transparency. Universities might implement programs that not only prevent dishonesty through penalties but also promote fairness in grading and examinations and reduce employee biases. Additionally, creating forums for students to express concerns about fairness could reduce perceptions that lead to dishonest behavior. Furthermore, our results highlight the importance of how academic assignments are presented and perceived by students. Misunderstandings or perceptions of excessive difficulty could inadvertently encourage dishonest practices. Employees in education could be trained to clearly communicate the objectives and expectations of assignments to avoid such misperceptions.

Since extrinsic motivation showed a marginal effect in moderating dishonest behavior when unfairness is perceived, educational settings might need to balance extrinsic rewards, such as grades, with intrinsic rewards, like enjoying the learning process and fostering personal growth. Programs designed to foster intrinsic motivation, such as implementing project-based learning, which increases intrinsic motivation and engagement with the subjects in students (Hmelo-Silver, 2004), could reduce the motivation to engage in dishonest behavior. Looking at increased dishonest behavior in professional settings when individuals prior learn how to engage in academic dishonesty, the roots of dishonesty should be tackled early on (LaDuke, 2013). Furthermore, although our study was limited to an academic

context, results can be generalized cautiously to other contexts, such as economic dishonest behavior and the workplace.

When employees perceive that rewards and recognitions are distributed unfairly, they may be compelled to engage in dishonest acts as compensation or to balance perceived injustices (Jaakson et al., 2018). This tendency might be especially pronounced among extrinsically motivated employees prioritizing external rewards. Therefore, ensuring fairness in rewards and addressing perceptions of unfairness could be crucial in preventing dishonest behavior in organizations. This highlights the importance of fair, transparent policies that minimize extrinsic rewards to foster an honest and fair workplace culture.

Future research

Considering this research's strengths, weaknesses, and implications, future research should further explore the influence of perceived unfairness on academic dishonesty and the moderating role of extrinsic motivation. In doing so, studies should use more robust and realistic manipulations of perceived unfairness, such as unfair grading systems with peers, to evoke stronger emotional and behavioral responses. Moreover, expanding the range of dishonest behavior, such as plagiarism and cheating on exams, could result in more observable dishonesty. By making the sample more diverse and significantly larger, including participants from different educational backgrounds, the results can be more generalizable to different contexts and potentially find statistically significant results. Furthermore, investigating how perceived unfairness and extrinsic motivation influence dishonest behavior over time and implementing a longitudinal study design can offer insights into the persistence and long-term effects of these factors, which were suggested by research (Garrett et al., 2016; LaDuke, 2013; Ruedy et al., 2013).

Future studies could also use more attractive rewards, leading to valuable findings on educational policies. For instance, more beneficial rewards might strengthen the motivating

effect of extrinsic factors, potentially increasing the likelihood of dishonest acts. Another focus could be experiments with an apparent victim of cheating, such as other students being negatively affected by unfair academic advantages. This could add a moral dimension to academic dishonesty and provide a deeper understanding of the factors influencing dishonest behavior. Furthermore, studies could also implement a setting where participants see if others use dishonest behavior, potentially triggering a peer effect between students on dishonesty and perceived unfairness that could be worth exploring.

Lastly, our results suggest that extrinsic motivation may reduce dishonest acts under certain conditions. This finding calls for a further investigation into the dynamics between extrinsic and intrinsic motivations. Specifically, future research should explore the potential of intrinsic motivation to foster ethical behavior independently of or with extrinsic rewards. Researching both motivational factors could offer valuable insights for designing organizational and educational environments that foster fairness and honesty.

Conclusion

Our study explored how perceived unfairness influences academic dishonesty and whether extrinsic motivation moderates this relationship. The results indicate that the correlation between perceived unfairness and dishonest behavior was non-significant, yet a nominal increase in dishonesty was found in the "hard" condition. Moreover, extrinsic motivation moderated this relationship with a marginally significant interaction effect. In the "easy" condition, this interaction was negative, meaning that more extrinsic motivation may lead to less dishonesty. These findings partially support and challenge the existing literature by suggesting that extrinsic motivation may prompt dishonest behavior when unfairness is perceived but that it might minimize dishonesty when unfairness is not present (Gerlach et al., 2019). Our study calls for further exploration of motivational factors like extrinsic motivation

in the context of academic dishonesty, as they might significantly influence students'

dishonesty, especially when situations might seem unfair.

Furthermore, the observed trend between perceived unfairness and dishonesty in our

findings aligns partially with past research (Houser et al., 2012; Wang et al., 2024). However,

a larger and more diverse sample with a stronger manipulation of unfairness should be used to

enhance future research's generalizability and statistical power. Our study highlights the

importance of educational institutions implementing transparent and fair policies and less

extrinsic rewards to prevent dishonest behavior in students and promote academic integrity

and fairness.

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Appendix A

Manipulation text

On the next screen, you will be randomly assigned to one of two conditions.

This can either be the easy reading comprehension condition or the hard reading comprehension condition.

The goal of is the same in both conditions: You are asked to read a text and afterwards answer questions about it. Please make sure to carefully read the text. Based on our initial testing, the easy reading comprehension task should take about half as long as the hard reading comprehension task. Please try to give it your best efforts. This will really help us increase our understanding of the link between cognitive styles and reading comprehension. The difference between the conditions may seem unfair, but we cannot really study this in another way.

Regardless of condition, you can earn a bonus amount of SONA credits if you answer all questions correctly! Eligible participants will be contacted after participation.

Your cooperation is greatly appreciated!

Manipulation "easy" condition

You have been assigned to the easy reading comprehension condition.

On the following screen you will see a text on a scientific subject. Please read the text carefully - you will be asked a few questions about its content afterwards.

If you answer more than half of the questions correctly, you will receive a bonus amount of

SONA credits after the study concludes.

You cannot go back to read the text again. So make sure you advance only when you are ready!

Manipulation "hard" condition"

You have been assigned to the hard reading comprehension condition.

On the following screen you will see a long text on a scientific subject. Please read the text carefully - you will be asked a few questions about its content afterwards.

If you answer all questions correctly, you will receive a bonus amount of SONA credits after the study concludes.

You cannot go back to read the text again. So make sure you advance only when you are ready!

Appendix B

Text for debriefing

Thank you very much for helping with this study.

Debriefing:

In basic terms, the goal of this psychological study is to examine how being exposed to certain things impacts behavior down the line. For this purpose, we intentionally designed aspects of the study in a certain way.

The full nature of this study will be disclosed after data collection ends. Please understand that we do this to avoid that information about the true purpose of the study spreads to other potential participants. For now, please note that multiple parts of the study were intentionally presented to you in a certain way.

You will be invited to another study that will provide you with the bonus credits (0.5 credits).

The results will be used for scientific and educational purposes only. If you have any questions or concerns about the study or your participation, you are welcome to contact the lead investigator, Ben Gützkow (b.gutzkow@rug.nl).

If you have any questions about your rights, you can contact ecp@rug.nl

You will be fully informed about the true nature of the study soon. In the meantime, did you guess what the study was really about? Please enter any guesses or comments you might have below:

Appendix C

Indicated difficulties

If **any** of the following apply to you, you are eligible for bonus credits. If none apply to you, simply leave it blank.

- I am a slow reader

- It is hard for me to pay attention for longer periods of time

- I have a form of ADHD / ADD

- I am dyslexic

- Something important distracted me during the study

- There is something that affected my performance, but I do not want to say what it is.

Appendix D

Items of Academic Motivation Scale

These items were used from the Academic Motivation Scale (Vallerand et al., 1992).

Please indicate your agreement with the following statements:

I go to university...

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
...because with only a high-school degree (or equivalent) I would not find a high-paying job later on.							
...because of the fact that when I succeed at university, I feel important.							
...because I want to have "the good life" later on.							
...in order to have a better salary later on.							