

Article

Forecasting Honesty: An Investigation of the Middle Eastern Bicultural Mind

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Abstract: The present study examines the extent to which models of honesty predict the magnitude of current or future self-serving assessment of performance in Middle Eastern students, a population often neglected in the extant literature. Specifically, the study asks whether Middle Eastern students' predictions regarding future performance rectify prior self-serving inflated assessment, thereby restoring honesty, or glorify it through enhanced optimism, thereby discounting prior dishonesty. In this study, students believed that their self-assessment of performance would be either anonymous, allowing them to cheat, or identifiable. Before self-assessment, participants were exposed to reminders of honesty or dishonesty (i.e., priming conditions) or neutral reminders (i.e., the control condition). In agreement with the self-concept maintenance model and evidence of earlier studies conducted in the Western world, students inflated their self-assessments very little, and even less when presented with either secular or religious reminders of honesty. However, reminders were ineffective on participants' predictions of future performance, which were biased in favor of optimism. The study offers concrete evidence on the presumed generality of a theoretical model of ethical conduct while it also adds evidence on its limitations.

Keywords: self-knowledge; culture; bicultural orientation; ethical conduct



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1. Introduction

Honesty is an essential ingredient of a society's social fabric. Human relations rise, rest, and fall on the assumption that the intentions and actions of all parties involved conform to accepted norms that regulate interactions in each context. However, dishonesty, such as cheating, exists [1–5]. What are the factors that may predict the likelihood and magnitude of cheating? The ability to predict future occurrences, including instances of dishonesty, is critical to decision-making. It enables people to prepare for action in order to avoid harm as well as enhance the prospect of desirable outcomes [6]. Two main predictive models exist in the literature, albeit their generality has yet to be determined. Models identify the main source of human motivation for fraudulence as either a practical cost–benefit calculation or the preservation of a desirable self-concept. The present study, which focuses on cheating, examines the extent to which these models generalize to a previously untested population.

According to the utilitarian model of cheating [7–9], people cheat if opportunities exist that lead to desired gains as well as negligible costs (i.e., low likelihood of being caught and punished). According to the self-concept maintenance model, human beings like to think of themselves as honest [10–12]. As a result, people experience an internal conflict named ethical dissonance between two opposing tendencies when opportunities for dishonesty arise. They find themselves pulled toward the temptation to benefit from unethical behavior and the desire to maintain a positive image of themselves as moral beings, thereby experiencing an unpleasant psychological tension. According to this model, if opportunities for dishonesty arise, people may choose to engage in dishonest actions, but not of the type and magnitude that will tarnish their positive self-concept to the

point of dictating a key change in how they view themselves [13–15]. This model rests on the assumption that people value honesty and maintain a view of themselves as moral beings [16–18]. It implies that people treat integrity as an aspect of their reputation that is advantageous to preserve [19].

Imagine that a student is taking a difficult makeup test in the office of an academic department. Accidentally, the only secretary of that office has left a copy of the test's answers on a nearby desk. If the secretary is unexpectedly called to a classroom to proctor another test, and nobody is in sight, will the student look up the answers? The benefits are palpable, and the risks are negligible. The utilitarian model predicts that the student will cheat, whereas the self-concept model predicts that the student will only look up a few answers, perhaps those of questions truly deemed incomprehensible. However, even modest cheating may be difficult to carry out if, right on the wall facing the student, there is a picture of Mahatma Gandhi, the honor code of the university, or any other reminder of honesty. According to the self-concept model, such reminders make it difficult to discount even modest levels of cheating as too trivial to tarnish the self-concept of the person who cheats. Namely, they severely restrict the range and magnitude of misbehaviors that are permissible without forcing an update of one's self-concept. In the scenario above, the student is likely not to cheat at all. Mazar et al. [15] found support for this model in the Western world by reporting that if the concept of honesty is activated by religious reminders (i.e., the Ten Commandments) or by secular reminders (e.g., academic honor codes), students are less likely to cheat on an ostensibly unrelated task (i.e., a counting test) that offers them the opportunity to inflate reports of their performance.

Reminders as deterrents of dishonesty are assumed to activate existing schemas of ethical standards in the mind of the person who, in a given situation, is considering misconduct [20–23]. They do not change his/her norms and values. Instead, they prime honesty and consequently reduce the possibility of discounting even minor instances of dishonesty as insignificant. If different types of reminders can deter dishonesty, such as cheating, the ancillary assumption is that their impact will be modulated by (a) the relative prevalence or scarcity of religious and secular ethical values in the society where reminders exist as well as by (b) the relevance of such values to the individual who is a member of that society. However, little attention has been devoted in the literature to the extent to which dishonesty may be impacted by either factor see [15,24]. For instance, although differences in honesty have been reported between various national groups, not only are the sources of such differences uncertain, but the extant evidence also excludes key Middle Eastern countries [25]. These limitations raise a series of questions regarding the generality of the existing models and supporting findings.

Consider, for instance, the Kingdom of Saudi Arabia (KSA), where religious reminders of Prophet Mohammad's teachings are everywhere—from the countless mosques across the country, which launch five times a day a call to prayer, to people's customary greetings, which are infused with references to Allah and the Prophet [26,27]. Religious reminders comprise the tapestry of a culture in the quotidian life of its members. Transgressions of ethical norms are seen as stains on one's soul that damage the reputation of not only the culprit but also his/her family and tribe. Reminders of honesty and warnings against dishonesty infuse verses and tales of sacred texts, such as the Quran and the Sunnah. For a Muslim, tales illustrate the principles to use as guidance in everyday life, the norms to obey, and the remedies to face if transgressions ensue. Currently, in the cities and towns of KSA, religion is challenged by consumerism and yet protected by collectivism. Secular ethical values of justice and fairness are adopted if perceived as conforming to the principles of Islam. Thus, secular ethical values are not separate entities but become expressions of Islam and collectivistic tribal traditions. Above and beyond the unique features of KSA society, it is reasonable to assume that individual differences in the propensity for dishonesty [28] exist. The strength to which ethical values, of either secular or religious origin, are held by a given person [29] may be of particular importance here.

The evidence that the existing literature offers regarding the impact of societal influences tends to be scarce and geographically limited to populations who have self-selected a specific way of life, thereby making it difficult to disentangle individual differences [30] from societal influences. For instance, consider that people who are exposed to daily reminders of religious principles because of personal life choices have been found to be less likely to inflate their self-reported performance when no scrutiny of a third party is available. In this regard, Shalvi and Leiser [31] reported that Jewish students attending religion-infused programs are less likely to be dishonest in self-reports than students attending secular programs. In this study, self-reports concerned performance on a task that required students to privately roll a die in a cup and earn money according to the number they reported rolling. When nuns and secular students were given the same die-under-cup task, Fischbacher and Utikal [32] found that both nuns and secular students deceive, but in very different ways. Nuns under-report, whereas students over-report.

The findings of Shalvi and Leiser [31] and Fischbacher and Utikal [32] support the notion that dishonesty is not merely the result of cold cost–benefit calculations. Individual differences, widespread environmental cues serving as reminders of ethical norms of conduct and disposition, or both can contribute. Two issues, however, remain unresolved. First, it is unclear whether the effects reported above can be replicated in individuals who have not self-selected their exposure to a religion, but rather have been exposed since a young age to a pervasive culture that is not only infused with religious reminders but also driven by collectivistic principles and religious tenets that mutually reinforce each other [26,33–35]. Indirect evidence for societal influences comes from research that finds consumerism, including the materialistic values it expounds, to be associated with an increased likelihood of cheating and instances of petty theft [36,37]. Not surprisingly, mere exposure to money amplifies the likelihood of unethical conduct (e.g., lying) [38]. Further evidence comes from studies demonstrating that people’s choice to behave dishonestly or honestly is sensitive to the unethical behaviors of others (i.e., social contagion), depending on their perceived group membership [39]. Second, it is unclear whether the opportunity to cheat (e.g., anonymity) without payoffs is sufficient to lead participants to cheat in different societies. To this end, it is important to note that a reputation of integrity assumes a particular meaning in societies driven by collectivistic values, in which one’s in-group (e.g., extended family, tribe, etc.) is a tightly integrated unit that gives protection but demands enduring loyalty [33,34]. In such societies, group affiliation is a critical source of identity [40,41] that defines an interdependent self for whom fitting in, displaying restraint, and maintaining social harmony are especially important. Traditions that put a premium on the collective, such as blood relationships and communal sharing, are seen as able to offer enhanced protection against undesirable primes (e.g., money). Studies of ethics suggest that societal variations cannot be disregarded [42–44]. However, evidence indicating that members of various societies are differently honest [25] often does not include key populations of the Middle East.

The research paradigm utilized in the present study relies on the phenomenon of priming. In the selected paradigm, priming refers to the activation of information stored in a person’s memory, such as concepts, through subtle situational cues. The impact of activated information is then measured on judgment and behavior in subsequent tasks [45]. In the present research, a semantic concept (e.g., honesty) is unobtrusively “primed” by asking participants to retrieve exemplars of the concept in the course of performing an initial task. The effect of retrieving instances of the concept is measured by assessing participants’ responses in ostensibly unrelated tasks that follow the priming task [45]. In the study, inaccurate reports of one’s current performance and inaccurate estimates of future performance denote instances of dishonesty towards the self and others if they are self-serving (i.e., inflated) as well as sensitive to ethical reminders (e.g., priming of justice). Although mixed evidence exists concerning the impact of priming of ethical information [46–48], extant models of dishonesty make the following predictions regarding cheating in KSA:

Hypothesis 1. *The utilitarian model predicts that, at any given point in time, if the specific situation faced by students (e.g., a test) offers practical opportunities for dishonest conduct and supports the belief that the conduct will be more likely to be rewarding than harmful (e.g., escape detection and bring about the desired outcome), cheating may occur (i.e., there will be a main effect of opportunity). Evidence exists that in KSA, as in the Western world, anonymity is a critical variable in determining the likelihood of dishonesty [15,45].*

Hypothesis 2. *The self-concept maintenance model does not deny that anonymity and the absence of monitoring weaken moral responsibility, thereby agreeing that procedures intended to increase people's feeling that they are scrutinized and can be identified reduce the likelihood of dishonesty [14]. However, the model adds to opportunities the role of people's self-concept. To this end, the model predicts the effectiveness of cues (i.e., reminders) that can increase the salience of people's morality in their minds and thus decrease their ability to justify intended acts of dishonesty.*

Assuming that opportunities for cheating exist, the self-concept maintenance model predicts that there will be less cheating or no cheating at all if standards of honesty are brought to mind by religious reminders of ethical standards (e.g., references to the words of Prophet Mohammad) and secular reminders (e.g., references to the principle of justice) in an ostensibly unrelated task (i.e., there will be a main effect of priming). The findings of a recent study support Hypotheses 1 and 2. Namely, notwithstanding the widespread nature of religious reminders in KSA, anonymity was found to foster cheating compared to a condition in which participants could be identified, whereas direct exposure to such reminders was found to foster honesty [45].

Hypothesis 3. *The self-concept maintenance model makes contrasting predictions regarding the relative effectiveness of religious and secular reminders of ethical standards in a society, such as KSA, which inserts religion into everyday life. Depending on the relative prevalence of religious and secular values in a society, religious reminders may become superfluous (adaptation response) [49] or have a stronger impact as the values they represent can be easily brought to mind (recency effect) [50]. However, evidence exists that horizontal collectivism, which represents the view of oneself as a member of a collective who believes that all people are equal [51], is valued in KSA [52]. Thus, if secular ethical values of justice and fairness are indeed seen as expressing Islamic principles of horizontal collectivism, there may not be a difference between the impact of secular and religious reminders.*

Hypothesis 4. *Similarly, reminders that bring to mind instances of dishonesty and those that evoke instances of honesty can be predicted to be equally effective or differentially effective, depending on the assumptions that one makes on the information that priming activates. Within the self-concept maintenance model [13,14], these reminders may be assumed to bring to mind ethical standards, albeit through different routes. As such, they are considered equivalent in their effects on the mind of the person who is contemplating a transgression. Both will discourage it. Alternatively, such reminders may be assumed to evoke qualitatively different but concrete instances of behavior in people's minds. As such, reminders of dishonesty will have the opposite effect of reminders of honesty. Specifically, the former will encourage transgressions by conveying a certain degree of permissiveness for misbehaviors [53,54].*

Hypothesis 5. *According to the self-concept maintenance model, the effectiveness of religious and secular reminders of ethical standards will vary with the strength of people's religious and secular ethical beliefs (i.e., there will be an interaction between priming and beliefs).*

Hypothesis 6. *Most importantly, the model predicts that if people are unaware of their dishonesty in self-reports of task performance, predictions of future performance will be exaggerated as their assessment will be based on already inflated values. Thus, the more self-reports of performance become inflated, the more optimistic predictions of future performance will be. Instead, if people are aware of their dishonesty, they may be more realistic in their predictions as they recognize inflation in the earlier reports. Thus, for these individuals, the more self-reports of performance become inflated,*

the less optimistic predictions of future performance will be. The self-concept maintenance model, however, does not consider the possibility of an optimism bias [55] inflating all predictions. The bias is a pervasive, consistent, and robust tendency to overestimate the likelihood of future positive events and underestimate the likelihood of negative events [56]. It leads to expectations that do not fit reality, such as anticipating living longer than objective statistics dictate or overestimating prospects of success in the stock market, etc. [57]. A key aspect of the bias is one's tendency to preferentially process desirable information. Thus, people under the influence of the optimism bias will rely more on self-reported than actual performance for predictions if initial self-reports of performance are skewed in their favor. Furthermore, opportunities to deceive in such self-reports will not matter much under the equalizing influence of optimism toward future occurrences.

Support for each of these hypotheses is currently meager or unclear. For instance, evidence exists that indicates that notwithstanding the prevalence of religious reminders in KSA, anonymity enhances the likelihood of dishonesty compared to a condition in which participants can be identified, whereas direct exposure to religious reminders reduces it [45]. It is unclear, however, whether it is the content of the religious reminders or the horizontal collectivistic ethos they portray that drives the effect. Whether the strength of religious beliefs or secular values of fairness modulates the effect is also unclear. In the present study, to test Hypotheses 1–6, the methodology described below was used. The overriding assumption was that cognitions, and thus the impact of ethical reminders, are cultural constructions that define one's perception and understanding of the information that defines a task or activity at a particular time and in a given context [58]. Young members of KSA whose internalized religious values as well as secular justice tenets might vary served for testing.

2. Methods

2.1. Participants

Participants were 493 undergraduate female students at a university located in the Eastern Province of KSA. Participants (age range: 18–25) reported Arabic as their first language and English as their second language. They completed primary and secondary schooling in KSA. According to students' reports, exposure to English and Western culture included formal instruction (mandatory English courses in primary and secondary schooling), exchanges with expatriates, foreign television channels, trips abroad, and internet surfing see [25,59]. For admission, students had demonstrated English proficiency through standardized English competency tests (i.e., IELTS, TOEFL, or Aptis). English was the primary means of communication, including instruction, at the university. The procedure described below complied with the guidelines of the Office for Human Research Protections of the U.S. Department of Health and Human Services.

2.2. Procedure and Materials

The experiment was presented as a study of how people work under deadlines. It entailed a series of tasks each to be completed within a set amount of time.

The first activity entailed a priming procedure to which participants were randomly assigned. Participants were given 2 min to write down 10 teachings of the Prophet Muhammad for Muslims to observe (religious–ethical priming condition; $n = 119$), 10 past or present events that represent examples of justice (secular–ethical priming condition; $n = 127$), 10 past or present events that represent examples of injustice (secular–unethical priming condition; $n = 120$), or the names of 10 countries with a sea or an ocean as one of their borders (neutral condition; $n = 127$).

The second activity required students to perform a simple math task (2 min). To this end, they were given a booklet with four matrices on each page and an answer sheet [60,61]. Every matrix had nine three-digit numbers (e.g., 0.22). Their task was to find, without the aid of a calculator, the pair of numbers on each matrix whose sum was equal to 1. As soon as the 2 min allocated to this task expired, participants were exposed to one of two different sets

of instructions. In the monitoring (control) condition ($n = 246$), students were not given the opportunity to cheat, as their performance was identifiable. They were asked to write their ID on the booklet and answer sheet and then count the number of matrices correctly completed. After writing the number on the answer sheet, all documents were stapled together and submitted to the researchers for further checking. Instead, in the no-monitoring (anonymity) condition ($n = 247$), students were first instructed not to write their ID or any other identifying information on the booklet and answer sheet. Their task was to count the number of matrices correctly completed and write the number on the answer sheet. The answer sheet was then submitted to the researchers along with the sheet of the first task, whereas the booklet with the students' work was discarded in a recycle bin. A minuscule number written in pencil on the back of each booklet and answer sheet allowed the researchers to later match the booklet and the answer sheet used by each participant.

The third task required students to estimate future performance. Specifically, they were asked to imagine carrying out the task they just completed on a new set of matrices under the same time constraints. Hypothetically, the task was to be repeated immediately after the previous one on a new set of matrices. Their goal was to correctly estimate the number of matrices they would be able to solve and to indicate their degree of confidence in the prediction made on a scale from 0 (not confident at all) to 4 (extremely confident).

In the fourth task, students used a seven-point scale from "very unlikely" to "very likely" (0–6) to report the relevance of religion and the importance of fairness in their lives. Important to note is that in both the control (monitoring) and the anonymity (no-monitoring) conditions, researchers deleted all identifying information as soon as participants' answers were recorded.

2.3. Design

The experimental design involved the following factors: priming (religious, secular–ethical, secular–unethical, and neutral reminders), opportunity (anonymity and control), and strength of religious and secular ethical beliefs. All were discrete variables except for beliefs, which were continuous subject variables. Priming and opportunity were between-subjects variables manipulated through random assignment.

The key dependent variable was inaccurate reporting of performance, which served as a proxy for cheating because, in the selected math task, correct answers are unambiguous and genuine mistakes are rare [15,23,62]. Accurate reporting was equivalent to 0. If the difference between the number of matrices reported by students as having been solved and the number of matrices actually solved was a number above 0, then over-reporting was said to have occurred. Alternatively, if the difference was a number below 0, then under-reporting was said to have occurred. The ancillary dependent variables were the reliability of estimates of future performance (i.e., the difference between the estimated number of matrices that students believed they could solve in the near future and the number they actually solved) as well as confidence in such estimates.

3. Results

Table 1 illustrates descriptive statistics. All results discussed below are significant at the 0.05 level. ANOVA tests were followed by tests of simple effects, which were submitted to the sequentially rejective multiple-test procedure [63] to control for experiment-wise alpha.

Table 1. Mean difference between actual and reported scores (top panel), and between actual and predicted scores (bottom panel) as a function of opportunity to cheat and priming. Standard errors of the mean (SEM) are in parentheses.

Opportunity to Cheat	Control		Anonymity	
	Reported—Actual Score		Reported—Actual Score	
Priming				
Neutral	+0.93 (0.24)		+1.88 (0.25)	
Religious	+0.58 (0.26)		+0.42 * (0.25)	
Justice	+0.57 (0.24)		+0.58 * (0.25)	
Injustice	+0.60 (0.26)		+1.71 (0.24)	
	Predicted—Actual Score	Confidence	Predicted—Actual Score	Confidence
Neutral	+3.76 (0.35)	2.27	+3.50 (0.37)	2.78
Religious	+4.00 (0.38)	2.23	+2.87 (0.37)	2.48
Justice	+3.85 (0.35)	2.28	+3.85 (0.37)	2.62
Injustice	+3.20 (0.39)	2.33	+4.12 (0.36)	2.77

Note. * Values significantly different from those of the neutral priming condition.

3.1. Accuracy of Reported Performance

The difference between reported and actual performance (i.e., inaccurate reporting) was the dependent variable of a 4 (priming) × 2 (opportunity to cheat) ANOVA. Apart from a main effect of priming, $F(3, 485) = 6.38, MSE = 3.78, p < 0.001, \eta p^2 = 0.038$, and opportunity to cheat, $F(1, 485) = 7.50, MSE = 3.78, p = 0.006, \eta p^2 = 0.015$, the analysis yielded a significant interaction, $F(3, 485) = 3.35, MSE = 3.78, p = 0.019, \eta p^2 = 0.020$. Tests of simple effects indicated that the magnitude of misreporting in the control condition was not different between neutral priming reminders and either secular or religious priming reminders. That is, the content of the priming manipulation did not matter when performance could be linked to individual students. Instead, in the anonymity condition, reminders of religious and secular ethical standards yielded less inflated reports than neutral reminders. Reminders of religious and secular ethical standards were equally effective. Reminders of injustice and neutral reminders did not differ. That is, they were equally ineffective.

3.2. Accuracy of Predicted Performance

Not surprisingly, predictions of future performance deviated much more from actual performance than reported current performance, $F(1, 492) = 453.88, MSE = 4.07, p < 0.001, \eta p^2 = 0.480$. A 4 (priming) × 2 (opportunity to cheat) ANOVA, which was conducted on the difference between predicted and actual performance (i.e., inaccurate estimates of future performance), yielded no significant effects, $F_s \leq 2.56, ns$. The same 2 × 2 ANOVA conducted on students' confidence in their predictions yielded a main effect of opportunity, $F(1, 485) = 17.34, MSE = 1.06, p < 0.001, \eta p^2 = 0.035$. Namely, although predictions were rather optimistic across the board, confidence in such optimism was greater in participants who remained anonymous than in participants assigned to the control condition.

In summary, participants who misreported their performance did not attempt to correct their reports when predicting future performance, either by means of reduced inflation of predicted performance or by means of reduced confidence in the predictions made. Anonymity fostered confidence in a rosy forecast. Most importantly, the positive influence of ethical reminders was short-lived as it was unable to shape predictions of future performance.

3.3. Individual Differences

Participants' reports of the importance of religion and justice in their lives were subjected to the same ANOVA applied to reports of current performance or estimates of future performance. There were no significant differences in the attributed relevance

of religion, $F_s \leq 1.09$, *ns* ($M = 5.08$, $SEM = 0.05$), and justice, $F_s \leq 3.06$, *ns* ($M = 5.28$, $SEM = 0.04$). The pattern of results described above for inaccurate self-reports and inflated predictions of performance did not change when participants' relevance of either religion or justice was entered as covariates.

3.4. Predictions of Future Performance: Lack of Awareness of Dishonesty or Optimism Bias?

According to the self-concept model, if people are unaware of their dishonesty while self-reporting performance, predictions of their future performance will be embellished as their assessment will be based on already inflated values. Thus, for these individuals, predictions of future performance should be more optimistic as the inflation of self-reports of performance increases in magnitude. The data collected when the opportunity to cheat was present (i.e., anonymity instructions) without ethical reminders (neutral priming) were analyzed to determine whether unawareness of one's dishonesty accompanied unprompted cheating. The data comprised the participants' self-reports, predictions, and actual performance.

Consistent with the forecast of the self-concept maintenance model, a strong positive correlation was observed between predictions and self-reports, $r = +0.70$, $n = 67$, $p < 0.001$. However, unawareness of dishonesty might have been the byproduct of a much larger phenomenon known as optimism bias. A key aspect of the bias is the preferential processing of desirable information. If self-reports are skewed in a self-serving manner, people under the influence of the bias will rely more on self-reported than actual performance for predictions. In agreement with this forecast, the variance shared by participants' predictions and self-reports of current performance was 49%, whereas the variance shared by predictions and actual performance was 26% (as per the coefficient of determination obtained from $r = +0.51$, $n = 67$, $p < 0.001$).

If the optimism bias is operative, whether people had the opportunity to cheat in their self-reports will not matter under the equalizing influence of the optimism placed in future occurrences. To assess this prediction, inaccurate reports (i.e., the difference between actual and self-reported current performance; $M = +0.93$ and $M = +1.88$) and inaccurate estimates of future performance (i.e., the difference between actual and predicted performance; $M = +3.76$ and $M = +3.50$) following neutral priming induction (i.e., under unprompted-conduct conditions) were analyzed. A 2 (opportunity to cheat) \times 2 (type of assessment) mixed factorial ANOVA analysis indicated that in both the control and anonymity conditions, predictions were more optimistic than self-reports of past performance, $F(1, 125) = 96.20$, $MSE = 3.26$, $p < 0.001$, $\eta p^2 = 0.435$ (opportunity to cheat: $F < 1$, *ns*). There was also a significant interaction, $F(1, 125) = 7.21$, $MSE = 3.26$, $p = 0.008$, $\eta p^2 = 0.055$. Tests of simple effects indicated that whereas self-reports were more inflated when participants were given the opportunity to cheat (anonymity condition), predictions were inflated regardless of the opportunity to cheat. Thus, the likely source of participants' failures to correct their predictions of future performance in consideration of the magnitude of their cheating appeared to be the spell of optimism bias.

4. Discussion

The findings of the present study can be organized into six different clusters, each devoted to the testing of a particular hypothesis. Hypotheses are listed in the order in which they were presented in the introductory section.

Both the utilitarian model and the self-concept maintenance model predicted that the opportunity for dishonesty offered by anonymity would foster self-serving estimates (hypothesis 1). Indeed, self-reports of current performance tended to be self-serving if the opportunity for anonymity was granted. Also supported was the prediction that the self-serving evaluation of one's performance would be attenuated by current environmental influences (i.e., priming) if such influences activated the standards of honesty in one's mind (i.e., Hypothesis 2). As suggested by the self-concept maintenance model, when

participants expected anonymity, either religious or secular justice primes reduced the self-serving evaluations recorded following neutral primes.

Predictions were also made regarding the information that was activated by primes. It was predicted that if secular ethical values of justice and fairness were indeed seen as expressing Islamic principles of horizontal collectivism, there would not be a difference between the impact of secular and religious reminders (Hypothesis 3). Indeed, no difference was found between religious and justice primes, thereby supporting the notion that horizontal collectivism, which is embedded in both religious beliefs and standards of justice, might be the prevailing information activated by the ethical primes. No evidence of an adaptation response or a recency effect was observed. Furthermore, reminders of dishonesty neither tempered self-serving evaluations nor encouraged transgressions by conveying a certain degree of permissiveness for misbehavior. On the contrary, when current environmental influences brought to mind examples of injustice, the magnitude of dishonesty was similar to that observed with neutral primes. Thus, Hypothesis 4 was not supported. The ineffectiveness of reminders of dishonesty might be attributed to the restraints against overt misconduct that are often reported in societies with collectivistic undertones [64,65]. Hypothesis 5 was also not supported. That is, there was no evidence that inaccurate self-reports of current performance were modulated by the strength of participants' beliefs in religion and justice. Our failure to support Hypothesis 5 included not only the inaccuracy of self-reports of current performance but also the accuracy of future estimates of performance.

Interestingly, inflation in the evaluation of current performance was minor compared with that of predictions of future performance. In fact, not only did predictions of future performance fail to correct for earlier self-serving biases, but they were also likely to be overly optimistic both in magnitude and confidence. Although the opportunity to cheat (operationalized here as anonymity) did not affect the magnitude of participants' expressed optimism, it promoted their confidence in rosy, self-serving forecasts. Taken together, these findings suggested that participants might have been unaware of their inflated self-evaluations of current and future performance due to the influence of a disposition to be optimistic (Hypothesis 6). Of course, metacognition, including the ability to generate accurate assessments of one's current and future performance, which is critical to learning in and outside the classroom, might have been improved by suitable feedback [66,67]. Thus, in our study, feedback, which was not administered, could have been another means of reducing self-serving overestimations [66,67].

Overall, our findings are consistent with the evidence, mostly collected from the Western world, that people value honesty and wish to maintain a view of themselves as moral beings [16–18]. Namely, people treat integrity as a key aspect of their reputation that is useful to preserve [19]. Our findings agree with the self-concept maintenance model by illustrating that people may consider modest degrees of dishonesty when they can get away with it. Our participants' behavior is not unlikely that of copy machine users who modestly underreport the number of copies made but refrain from engaging in substantial dishonesty even in the absence of external monitors [14]. As in previous research, anonymity is the flame that ignites inflated self-reports of current and future performance, whereas the concept of honesty, activated by religious reminders, is the water that extinguishes inflation [25]. It adds to such research evidence regarding the impact of different types of reminders. Interestingly, as in the study by Mazar et al. [15], if the concept of honesty is activated by either religious reminders or secular reminders, students are less likely to cheat on an ostensibly unrelated task (i.e., a math task) that offers them the opportunity to inflate their performance. Thus, environmental cues that remind people of honesty, instead of mere opportunity, determine the extent to which dishonesty is chosen. However, in our study, generating examples of injustice does not encourage misconduct, as a social learning perspective of ethical conduct may predict. According to Bandura [53] virtually any behavior can be learned or induced via imitation either directly or through vicarious experience. Retrieving instances of dishonesty from memory may be expected

to induce the articulation of the corresponding behavior. Instead, secular reminders of dishonesty act more like neutral primes. Thus, their effects do not resemble those produced by other similar reminders, such as exposure to money, which have been shown to increase the likelihood of unethical conduct (e.g., lying) [38], or questions about cheating, which have been found to have the opposite impact see [39]. As noted earlier, cultural differences may explain the discrepancy between our findings and those of the extant literature on other reminders of dishonesty. Evidence exists that restraints against overt misconduct tend to be greater in a collectivistic context [64,65]. Thus, the prevalence of collectivism in the context where people operate may also make other reminders of dishonesty less effective in triggering misconduct.

The current findings are the beginning of a conversation about the generality of models that predict dishonesty developed through the testing of Western populations [61]. Consider, for instance, our finding that religious reminders and secular reminders of justice are equally effective in a society that embeds religion in everyday life, perhaps because either justice exists more as a religious principle than as a secular one, or collectivism encompasses religion and justice as the overarching principle. The comparable effectiveness of religious and secular reminders of ethical standards in KSA mirrors that found in the USA [15], albeit the cultural context in which reminders operate in the USA may treat justice more as a secular principle than a religious one. In fact, KSA offers Islam and collectivism as heavy counterforces for the individualist ethos of consumerism, whereas the USA offers a different mixture of competing values within an individualistic way of life. In the USA, religious practices, values, and beliefs have shrunk in favor of secularization, mostly among young and/or wealthy people [68]. The pervasiveness of the Christian religion coexists with widespread consumerism, individualism, and secular ethical values of justice and fairness opposing the economic inequalities that consumerism has unleashed. The symbols of religion in everyday life (e.g., greetings) are less overt, as respect for religious pluralism dictates that religion be kept confined to the private sphere. Not surprisingly, in such a society, debate exists as to whether pluralism depresses the vitality of religion [69–71].

Notwithstanding the unique cultural features of KSA, we found evidence of not only a self-serving bias in reports of executed performance [72] but also an optimism bias [73] plaguing predictions of forthcoming performance [55]. Important to note is that the ability to anticipate is a key feature of human cognition. Inferences about the future are critical to decision-making activities. They enable people to prepare for action and to be better equipped to face the uncertainties that may lie ahead. The bias that we have uncovered in predictions of future performance is widespread, as its reach goes well beyond the exaggerations of students' self-serving reports of performance and their apparent blindness to it. It is not unlike the bias that affects the planning and development of mega infrastructure projects in KSA [74]. As noted earlier, the optimism bias is largely insensitive to priming of ethical standards, illustrating its robustness in the face of not only reality but also environmental inductions intended to curb it. Future research will examine ways in which the reach of remedies, such as that of ethical priming, can be bolstered.

Our study adds to the extant literature on academic dishonesty by examining participants of an understudied student population. Yet, our study measures behavior and assumes that the preservation of a desirable self-concept is the key motivator for the degree of dishonesty that one may exhibit. Thus, one of the limitations of the study is that it does not examine directly the explicit explanations that individuals express for their dishonest acts. Farahat [75] who explored the rationalizations for academic dishonesty that Middle Eastern students generate, found them to include a desire to obtain a higher grade, indolence, or the necessity to overcome the demands of a challenging task (i.e., neutralization—that is, justification for one's violation of an accepted norm). As such, explicit rationalizations appear to be similar across a large number of students around the globe even though differences in frequency may be detected [76–78].

Another limitation of the current study involves the procedure adopted to measure dishonesty, whereby students self-report their performance anonymously or after having

disclosed their identity. This procedure is similar to the one used by Mazar et al. [15] to simulate cheating. In real life, however, cheating not only involves activities—such as plagiarizing or obtaining advanced knowledge of a test, which are not captured by the selected procedure—but also has substantial consequences both in terms of costs and benefits. Obviously, the selected procedure is not intended to estimate the actual magnitude of dishonesty in or outside the classroom, but rather to illustrate the factors that can modulate its occurrence in a context where one's self-concept is the primary referent for perceived benefits and costs. However, external rewards often matter in everyday life. According to the theory of cognitive dissonance [79,80], if a person does something contrary to his/her self-concept (e.g., cheats), the magnitude of the available external rewards (e.g., monetary incentive) will determine the fate of the person's self-concept. The greater the external rewards, the weaker will be the pressure for the person to change his/her self-concept to bring it into correspondence with what he/she has done. In contrast to this expected pattern, Mazar et al. [15] argue that increasing external rewards may decrease dishonesty because substantial rewards make it difficult to discount misdeeds as irrelevant to one's self-concept. The role of tangible external rewards in instances of dishonesty must be explored further to clarify its impact on human behavior [81].

Of course, the first pathway to dishonesty is people's lack of awareness that their actions are dishonest [82–84]. Unawareness is not an all-or-none quality though. According to the transtheoretical model for assessing the cognitive and motivational aspects of a person's decision-making [84,85], there are different levels of unawareness. The following instances may be included: (1) the person does not categorize or recognize an action as an ethical violation, (2) the person is aware of the ethical violation but not concerned, (3) the person is concerned but not to the point of discarding the dishonest act, and (4) awareness exists coupled with withdrawal or refrain from the action. The second pathway to dishonesty occurs when people engage in rationalizations through which a dishonest act (either to be performed or already performed) becomes acceptable to commit. Remedies may entail messages that target flaws in the rationalizations produced. However, determining individuals' awareness of the ethical connotation of actions in a given context as well as their rationalizations relies on self-reports, which are intrinsically subjective and thus flawed. Another challenge is to determine the impact of individual dispositions, such as narcissism, Machiavellianism, and psychopathy (i.e., the dark triad) in motivating not only dishonesty but also its rationalizations [85].

Additional limitations of the present study pertain to the characteristics of its sample, such as the restricted age range of the participants (i.e., young adults) and the sole inclusion of female students. As such, our findings may be sensitive to demographic characteristics. For instance, if the optimism bias indeed intensifies with age [86], the predictions of future performance observed in the present study are likely to be magnified as the participants' age increases. However, it is unclear whether the religious and secular reminders of ethical standards would be equally effective as older adults are those who experienced more directly the impact of Wahhabism, the religious doctrine that reshaped institutions and social identities in KSA after the oil boom. According to this doctrine, Muslims were to avoid the decadence dictated by Western influences and return to the pious life dictated by the Prophet Mohammad's teachings [30]. Additional research is required to explore this issue further. Of course, one may ask whether gender differences specifically in self-serving reports of current and future performance exist. Our study was limited to female participants mostly due to difficulties in accessing male students on a gender-segregated campus. Researchers have uncovered gender differences in personality—such as higher conscientiousness in female participants [87]—and dishonesty, such as males being significantly more likely to cheat in an academic environment than females [88]. However, these differences may be modulated by factors such as incentives [89] and willingness to be monitored [90], which make exceptions to the prevailing pattern not unlikely [91]. Thus, whether the inflated self-serving reports of current and future performance found in the female participants of the present study may be further inflated in males, is to

be determined. The role played by the particular task that was used for measuring self-serving estimates of current and future performance is also unclear. Consider that in the student population selected for the present investigation, females are much more likely to experience math anxiety than males [92]. As such, a math task may be more salient to female than male students even though performance is not formally graded. Whether gender differences in salience [93] would affect reports of current and future performance is a matter to be ascertained.

5. Conclusions

Metacognition is a critical component of learning [94]. Research exists which indicates that realistic awareness of one's performance as well as estimations of upcoming performance tend to be less than ideal [95,96]. One may argue that if students' predictions rely more on their self-reports than on their actual performance, it may be merely an indication of poor metacognitive insight. However, when overestimation either of current or future performance (a) is limited to students who believe their performance is anonymous and (b) is reduced by ethical reminders, then overestimation is not merely poor metacognition. It is a likely self-serving instance of dishonesty [15,45]. In the present study, we have operationalized the inaccuracy of overestimation as the extent to which students' reports of current performance or estimates of future performance (both without the benefits of feedback) are inflated relative to their actual performance. We have described inaccuracies of reports of past performance as self-serving to highlight that they satisfy the students' needs to preserve a positive image of themselves as ethical beings. One may argue that the overestimations produced by students in our study do not accurately reflect instances of cheating because there are no external incentives (e.g., good marks or points) to be obtained or to be lost. However, debriefing sessions [97] for the current research, which were treated as opportunities to learn for the researchers and the participants alike, have questioned the underlying assumption of this argument that the conduct of students in the math task may not compare with the situation presented by an actual test. Above all, debriefing sessions have taught us that in an academic setting, performance—whether directly evaluated by an instructor or merely produced in response to a task prompt—is taken seriously by students as an indication of their ability to succeed. For instance, students' evaluations of current performance in the math task of our study tended to be seen as an indication of their math abilities (as per information collected during debriefing). Thus, although the setting in which our study was performed did not exactly replicate the experience of cheating on an exam, it mimicked key features of that experience (e.g., anonymity as symptomatic of a behavior unlikely to be detected) in the context of a task involving math (an academic subject viewed as important). As such, it gave us a window into the dishonesty of the self when no tangible consequences are to be suffered.

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