Legitimate Lies: The relationship between omission, commission, and cheating

Andrea Pittarello[1], Enrico Rubaltelli[2, 3], & Daphna Motro[4]

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[1] Ben-Gurion University of the Negev, Psychology Department,

[2] Department of Developmental and Socialization Psychology, University of Padova, Italy.

[3] Cognitive Neuroscience Center, University of Padova, Italy.

[4] Department of Management and Organizations, Eller College of Management, University of Arizona, Tucson (AZ).

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*Address correspondence to: andreap@post.bgu.ac.il Psychology Department, Ben-Gurion University of the Negev, Beer-Sheva 84105, Israel. Phone: +972 (0) 55 8839869.

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Abstract

Across four experiments we show that when people can serve their self-interest, they are more likely to refrain from reporting the truth (lie of omission) than actively lie (lie of commission). We developed a novel online "Heads or Tails" task in which participants can lie to win a monetary prize. During the task, they are informed that the software is not always accurate, and it might provide incorrect feedback about their outcome. In Experiment 1 those in the omission condition received incorrect feedback informing them that they had won the game. Participants in commission condition were correctly informed that they had lost. Results indicated that when asked to report any errors in the detection of their payoff, participants in the omission condition cheated significantly more than those in the commission condition. Experiment 2 showed that this pattern of results is robust even when controlling for the perceived probability of the software error. Experiments 3 and 4 suggest that receiving incorrect feedback makes individuals feel more legitimate in withholding the truth, which, in turn, increases cheating.

Keywords: Omission Bias, Cheating, Legitimacy, Ethical Behavior, Dishonesty.

Legitimate Lies: The relationship between omission, commission, and cheating

You recently got promoted at work and you can finally exchange your old car for a brand new one. It is Sunday morning and the first buyer interested in purchasing your car turns up. He likes the car and now wants to test it on the road to assess its drivability. You know the car feels fine on the road although the engine is on its last legs. At this point, you can tell the truth about the engine; however the chances of selling the car at a good price will decrease substantially. You could lie about it by telling the buyer that the engine works perfectly. Alternatively, you could say nothing about it and let the buyer find out about the malfunction on his own. Although people *should* provide all the information about the condition of the car, many can be tempted to lie in order to maximize their profit. But are people more likely to overtly lie about the status of the engine or simply withhold the truth? The purpose of the present work is to address this question, and to further investigate *why* these two different types of unethical behaviors, despite leading to the same consequences, are deemed as differentially acceptable and justifiable.

Unethical behavior is defined as "behavior that has harmful effects upon others and it is either illegal or morally unacceptable to the larger community" (Jones, 1991, p. 367). From illegal practices in the workplace (Moore, Detert, Klebe Treviño, Baker & Meyer, 2012), to more ordinary transgressions such as "wardrobing" (purchasing an item, wearing it, and then returning it to the store), dishonesty has many detrimental consequences for society (Gino & Mogilner, 2014). Understanding the circumstances in which unethical behavior is more likely to occur is crucial for deterring illicit practices both within and outside organizations. We investigate whether unethical behavior (here: cheating), is more likely to occur when individuals can refrain from reporting the truth compared to when they have to actively break the rules. Additionally, we explore the mechanisms underlying why people fail to report the truth in order to secure higher profits.

Theoretical Background

Initial evidence suggesting that withholding the truth is deemed more acceptable than lying comes from early work on the omission bias (Spranca, Minsk, & Baron, 1991). The omission bias is defined as the tendency to judge the consequences of an active negative behavior (commission) as more harmful than the consequences of inaction (omission), even when both events lead to the same outcome (Baron & Ritov, 2004). Commissions are situations in which an actor actively violates a social norm (e.g., stealing money from the counter at the local grocery store), whereas in omissions individuals withhold important information or refrain from telling the truth in order to deceive a target (e.g., failing to notify the cashier that she gave extra change). According to an utilitarian perspective (Baron, 1996) the distinction between omissions and commissions should be morally irrelevant, as people should only value the consequences of an immoral behavior, regardless of how this action is brought about. However, a vast array of research findings has demonstrated that omissions and commissions are oftentimes treated differently by the law (Feinberg, 1984) and by observers (Baron & Ritov, 2004; DeScioli, Bruening, & Kurzban, 2011). For instance, Spranca and colleagues (1991) showed that active harm was rated worse and more intentional than passive harm. The authors suggested that this difference in morality judgments stemmed from the perceived causal role of the agent. Omissions might be the product of ignorance (e.g., sellers might not be aware of some product malfunctions), while commissions appear to require more malicious motives. This line of research suggests that individuals hold themselves and others less responsible for bringing about negative consequences through omissions than through commissions. This is particularly relevant in circumstances where other alternative causes concur in producing the outcome. According to the "causal discounting principle" the presence of alternative causes diminishes the causal role of the agent (Kelley, 1973). Results from Spranca and colleagues (1991) support this claim: When

the researchers asked participants to provide justifications for an actor's immoral behavior caused by omission, respondents reported that *if the actor did nothing it is not exactly he who did it* (Spranca et al., 1991, Experiment 5, italics added).

Here we examine whether individuals are more likely to refrain from telling the truth and serve their self-interest when their behavior does not result from explicit action (omissions; Kelley, 1973; Thibaut & Riecken, 1955). In this situation, an illicit behavior might be perceived as more acceptable, as people might blur the assignment of responsibility (Tenbrunsel & Messick, 2004). On the contrary, when no plausible alternative causes are present, individuals might find it harder to deliberately lie (commissions) to secure higher earnings. The goal of the present work is twofold: First, we aim to contribute to the extant literature by demonstrating that the distinction between active and passive transgressions holds true in the field of actual cheating. This is important, as previous work mainly investigated the omission bias by examining hypothetical evaluations of moral scenarios (Baron & Ritov, 1993, 1994, 2004; Haidt & Baron, 1996; Royzman & Baron, 2002). Understanding how such bias translates into actual behavior is crucial, as on many occasions judgments and predictions do not always correspond to real behavior (Teper & Inzlicht, 2011; Teper, Inzlicht, & Page-Gould, 2011).

The second goal of our work is to investigate the processes underlying lies of omission. Teper and Inzlicht (2011, Study 2) provided initial evidence that unethical acts are indeed more likely to occur as omissions than as commissions. In their work, the authors asked participants to solve a set of operations on the computer (higher number of operations solved meant higher payoff). They also informed them of a glitch in the software. In the commission condition participants were warned that pressing the spacebar would cause the correct answer to appear on the screen (von Hippel, Lakin, & Shakarchi, 2005). Those in the omission condition were informed that failing to press the spacebar within 5 seconds would

cause the program to display the correct answer. Results showed that participants earned a significantly higher amount of money when they could passively take advantage of the glitch compared to when they had to actively press the spacebar. While this work undoubtedly contributes to our understanding of unethical behavior, some important questions remained unanswered. For instance, it could be that the higher rate of unethical behavior in the omission condition depended on the different time constraints participants faced in the omission and commission condition. (A time constraint was present only in the omission condition, thus making difficult to directly compare individuals' unethical across conditions). Additionally, it has yet to be determined what mechanisms are responsible for the omission bias in the field of unethical behavior. The goal of the present work is to address these issues and propose a possible mediator that accounts for the relationship between omission, commission and cheating. Specifically, we suggest that when alternative factors are present (Spranca et al., 1991) such as a glitch in the computer (von Hippel et al, 2005), individuals believe that refraining from telling the truth is more legitimate than actively lying. The concept of legitimacy is broad and refers both to the political and legal sphere (see van der Toorn, Tyler, & Jost, 2011). Here, based on a vast area of research on motivated reasoning (Kunda, 1990) and self-serving justifications (Pittarello, Leib, Gordon-Hecker, & Shalvi, 2015; Shalvi, Dana, Handgraaf, & De Dreu, 2011; Shalvi, Eldar, & Bereby-Meyer, 2012; Schweitzer & Hsee, 2002), we define legitimate lies as those lies that "seem ethically acceptable" to the self (Shalvi et al., 2011, p. 183). Evidence that certain lies are judged as more legitimate than others comes from recent work by Shalvi and colleagues (2011). Across a series of experiments the authors showed that participants were more likely to over-report their outcome when they had the opportunity to roll a die multiple times to determine their pay (higher rolls meant higher payoffs), compared to when they were instructed to roll the die only once. The authors concluded that observing higher desired outcomes makes "a specific

lie more legitimate than other lies which are based on information that was not observed" (Shalvi et al., p. 183). In this work we aim to directly assess the extent to which individuals perceive an unethical behavior as legitimate when another alternative cause is responsible in bringing about a profitable, yet undeserved, monetary outcome. Work by Spranca and colleagues (1991) suggests that in these situations the causal role of the actor is discounted (see Kelley, 1973), and the individual can be perceived less blameworthy compared to when she is the only responsible for the unethical conduct. When dishonesty pays, we suggest that an alternative cause will provide individuals the necessary rationalizations and self-serving justifications for their misbehaviors. In other words, in such circumstances, individuals will be more likely to perceive and evaluate their misdeeds as legitimate. This, in turn will increase cheating.

Overview of Studies

We tested our predictions in four experiments. In all experiments participants were recruited through Amazon Mechanical Turk ("MTurk"; Goodman, Cryder, & Cheema, 2013; Paolacci, Chandler, & Ipeirotis, 2010). We employed a web-based tool ("Turk Gate", Goldin & Darlow, 2013) to ensure that the same workers would not be able to participate multiple times. We recruited only individuals located in the United States, with a minimum MTurk approval rate higher than 90%. In all the experiments participants read a consent form in which they were asked whether they wanted to participate in an online game in which they could win extra money. They were further told that their participation was anonymous and that their responses would be analyzed only at the aggregate level. At the end of the experiment, participants were debriefed and informed that the purpose of the experiments was to assess decision making in situations evoking ethical conflict. Participants played an online "Heads or Tails" game in which they had the opportunity to participate in a lottery and be selected to win an undeserved amount of money. They were informed that the computer

would flip a coin and determine whether participants won or lost the game. Only if the coin landed on Heads individuals would be able to enter the lottery. Among the participants in all the experiments who reported to be eligible to participate in the lottery, two individuals were selected at random and won $20 (for a similar payoff scheme see Cohen, Wolf, Panter, & Insko, 2011; Hershfield, Cohen, & Thompson, 2012; Hysebelli, Rubaltelli, & Rumiati, 2013; Gunia, Barnes, & Sah, 2014). Yet, participants were not informed about the exact probability to win the extra payoff of $20. We warned participants that the Heads or Tails software had bugs and was not always accurate. Therefore it could provide incorrect feedback about the opportunity to enter the lottery. To this purpose, at the end of the game participants were asked to report whether they found errors in the correct detection of their payoff. By doing so we were able to compare participants' cheating behavior across two experimental conditions. By choosing between two options on the screen, participants in the omission condition could refrain from telling the truth (passive transgressions) and not report an error after the software incorrectly informed them that they won the game. Participants in the commission condition received correct feedback that they did not win the game, yet they could lie by claiming that the software was not accurate and they indeed won (active transgressions). Experiment 1 tests our main prediction, namely that cheating will be higher in the omission condition than in the commission condition. We predict that the incorrect matching between outcome and feedback can serve as a justification. to pursue one's self-interest. Conversely, cheating will be lower when individuals receive correct feedback about their chances to participate in the lottery. Here, participants will be less likely to deliberately distort the truth, as identifying an alternative cause is not readily possible. Experiment 2 controls for a possible confounding variable, that is, that the probability to win extra money in the game is the result of a software bug. Therefore, the goal of Experiment 2 is to ensure that error in the software is perceived as equally likely to occur in omission and commission (Baron & Ritov, 2004; Royzman &

Baron, 2002). Controlling for the probability of the software bug is key, as participants' behavior might be the result of a distorted perception of the error rather than of our experimental manipulation. Experiments 3 and 4 are devised to test whether legitimacy ratings mediate the effect of acts of omission and commission on cheating behavior.

Experiment 1

Method

Participants and procedure

A total of 190 individuals (43% Female, M_{age} = 31.2 years, SD_{age} = 11.2) participated in the online Heads or Tails game and received a flat fee of $0.30. They were told that program would flip a one-cent coin and display either Heads or Tails, and that the software would link their outcome to the corresponding payoff. More specifically, they would get $0 if the outcome was Tails, whereas they had the opportunity to enter a lottery and win $20 if the outcome was Heads. We informed participants that some bugs were present (see von Hippel, et al., 2005) that could affect the matching of the correct payoff to the outcome. After the program flipped the coin, and the software linked the outcome to the payoff, participants were asked whether they had found errors in the detection of their correct payoff by choosing between two options from a drop-down menu. All participants saw Tails as their outcome, and then received feedback about whether they were eligible to enter the raffle. Individuals in the commission condition (N = 95) received the correct feedback stating that they did not win ("Sorry, you are not eligible to participate in the lottery and win $20"). They were then asked to select one of two options from the drop-down menu and report whether they could enter the lottery and have the chance to be selected to win the prize. Those wishing to dishonestly earn the money could select the option: "I have found a bug. I am entitled to participate in the lottery". On the contrary, participants could behave honestly and report: "I have not found any bug. I am not entitled to participate in the lottery".

Participants in the omission condition (N = 95) were instead provided with the "bugged feedback" ("Congratulations, you are eligible participate in the lottery and win $20"). In this situation, they could lie and refrain from reporting that they saw an error in the software matching of their payoff by selecting the option: "I have not found any bug. I am entitled to participate in the lottery". Alternatively, they could act honestly and select the option: "I have found a bug. I am not entitled to participate in the lottery".

In both conditions, the two options became visible on the screen only after participants clicked on the drop-down menu, therefore we avoided to set the unethical or ethical behavior as the default answer something that would have been a clear confounding considering the aim of our study. Additionally, both in commission and the omission condition, the honest option was presented first in the drop-down menu. By doing so we aimed to limit the possibility that the dishonest alternative represented the norm (or the normal way of procedure). If this was the case, unethical behavior could be the result of a primacy effect rather than our experimental manipulation. In other words, presenting the dishonest alternative as the norm could *per se* favor cheating in the omission condition. Finally, no time constraint was present, as participants could spend as much time as they desired before answering and move to the next screen. This aspect is important for at least two reasons. First, it rules out the possible effect of time pressure on unethical behavior (see Shalvi et al., 2012). Second, the absence of time limit reduced any confounding with the preference for the inaction or status quo bias (Samuelson & Zeckhauser, 1988). The absence of time constraint allowed us to better compare individuals' behavior across the commission and omission condition. This is key, as in previous work by Teper and Inzlicht (2011), a time limit manipulation was present in omission but not in commission, thus making difficult a direct comparison between the two conditions.

Results

We conducted a binary logistic regression analysis to assess whether our manipulation affected unethical behavior. Participants' responses were coded as 1 (cheating) every time they reported that they won the game and that were entitled to enter the lottery, and 0 (no cheating) every time they answered honestly. Results showed that our manipulation significantly predicted cheating, $b = 1.35$, $SE = .37$, $Wald\ \chi^2 = 13.57$, $p < .001$, 95% CI for odds ratio [1.89, 7.88], $R^2 = .11$[1], as 37.9% of participants in the omission condition cheated, compared to 13.7% in the commission condition (for further details on the analyses and results, see the "Supplementary Analyses" section).

Discussion

The purpose of Experiment 1 was to provide initial support for our main prediction. Participants who received incorrect feedback were more likely to refrain from telling the truth than actively lying to win a monetary prize.

Experiment 2

Experiment 1 showed that unethical behavior is more likely to occur when individuals can cheat through omission than commission. Specifically, when the software matches the outcome of the coin toss incorrectly with the monetary payoff, more than a third of participants did not report the truth and claimed that they were entitled to enter the lottery. However, it is possible that this pattern stems from that fact that people perceived the probability of an error made by the software as different in the two conditions. The purpose of Experiment 2 is to test whether this variable affected the behavior observed in Experiment 1. This is critical in order to isolate the effect of our manipulation on cheating.

Method

Participants and procedure

A total of 202 participants (47% Female, M_{age} = 32 years, SD_{age} = 10.6) took part in Experiment 2 in exchange for a flat fee of $0.30. Experiment 2 was identical to Experiment 1, except for one important difference. We asked participants both in the commission condition (N = 101) and in the omission condition (N = 101) "To what extent do you believe that there could be an error in the matching of payoff and outcome?" and "In general, how likely do you think that a bug could affect the matching of payoff and outcome?" Both question ranged from 1 (not at all likely) to 7 (very likely). The Cronbach's alpha for the two items was .86 thus indicating good reliability. Therefore, we created a single score of likelihood by averaging participants' ratings for the two items. Finally, to control for possible order effects, we counterbalanced the order of presentation of the two questions within the two experimental conditions. Half of the participants answered the likelihood questions before having the opportunity to cheat, whereas the other half answered the likelihood questions after.

Results

No order effect on cheating emerged (p = .96), and likelihood ratings did not differ when assessed before vs. after participants could lie (p = .69). Replicating the results of Experiment 1, a logistic regression revealed that cheating was higher in the omission condition than in the commission condition, b = 1.01, SE = .33, $Wald\ \chi^2$ = 9.29, p < .001, 95% CI for odds ratio [1.43, 5.26], R^2 = .07[2], as 38% of participants cheated in the omission condition compared to only 18% in the commission condition. We then tested how participants perceived the probability that the software would commit an error in the matching of payoff to outcome. The error was perceived as more likely to occur in omission (M = 5.5, SD = 1.7) than in commission (M = 3.9, SD = 1.9), t (200), = -6.55, p < .001. However, likelihood ratings did not predict cheating, b = .15, SE = .08, p = .07. Importantly,

when the perceived probability of the error was entered as an additional predictor its effect did not reach significance ($p = .59$), whereas the main effect of our manipulation was still significant ($p < .01$).

Discussion

Experiment 2 replicated the findings of Experiment 1, in addition to controlling for the possible effect of perceived likelihood of the software bug. Although participants believed that the bug was more likely to occur in omission than in commission, this difference did not account for the observed behavior.

Experiment 3

Thus far we have demonstrated that individuals are less likely to report the truth when provided with the opportunity to win extra money as a result of a computer mistake. However, when no mistake occurred, fewer participants overtly reported that a bug affected the matching of their outcome. However, neither Experiment 1 nor 2 provided a possible explanation of the processes underlying the greater cheating behavior observed through omission than through commission. Experiment 3 addresses this issue and suggests a possible mediator for the relationship between omission, commission and cheating. Previous work has shown that when other factors can be held responsible in causing a negative outcome, individuals generally feel less responsible for their misbehavior compared to when no alternative causes are present (see Kelley, 1973; Spranca et al., 1991; Tenbrunsel & Messick, 2004). When individuals face tempting situations, the presence of alternative causes can provide the opportunity to benefit from dishonesty while still feeling moral (Pittarello et al., 2015; Shalvi et al 2011; Shalvi, et al., 2012). In Experiment 3 we asked participants whether failing to report the true outcome of their coin toss was considered a legitimate behavior (see Shalvi et al., 2011). Finally, we measured whether participants were aware that they could enter the lottery and be selected to win the money by not reporting an error (omission), or by

claiming that the software committed a mistake and they were indeed eligible to win (commission). This is important to rule out the possibility that the lower cheating levels in omission resulted from participants who did not understand that their chances to win depended solely on what they decided to report after the coin toss.

Method

Participants and procedure

A total of 197 participants (47% Female, M_{age} = 31.5, years, SD_{age} = 9.75) were recruited through Amazon Mechanical Turk in exchange for a flat fee of $0.30. Experiment 3 was identical to Experiment 2 with two important exceptions: Participants in omission condition (N = 98) were asked: "I feel that I am legitimate to refrain from reporting a bug in the software to participate in the lottery", whereas those in the commission condition (N = 99) were asked: "I feel that I am legitimate to report a bug in the software to participate in the lottery". Legitimacy ratings were assessed on a 7-point Likert scale (1 = not at all legitimate, 7 = very legitimate). To measure awareness ratings, participants in the commission condition were asked: "Are you aware that you could report a bug in the matching of the payoff to participate in the lottery?", whereas those in the omission condition were asked: "Are you aware that you could refrain from reporting a bug in the matching of the payoff to participate in the lottery?". Awareness ratings ranged from 1 (not at all aware) to 7 (very aware). Finally, to control for the order effects, we counterbalanced the order of presentation of the questions within the two experimental conditions. Specifically, half of participants answered the legitimacy and awareness questions before having the opportunity to cheat, and the other half after.

Results

Awareness and legitimacy ratings. We first compared awareness ratings across the two experimental conditions. Results revealed that awareness ratings did not differ between

the commission condition (M = 4.99, SD = 2.31) and the omission condition (M = 5.00, SD = 2.35), $p = .97$. An order effect emerged, showing that awareness ratings were higher when participants answered after they were given the opportunity to cheat (M = 5.61, SD = 2.06) compared to when they answered before having the opportunity to cheat (M = 4.38, SD = 2.42), $t(195) = -3.84$, $p < .001$. However, the interaction between order of presentation of the questions and condition was not significant ($p = .22$). Lastly, no order effect emerged on legitimacy ratings ($p = .45$), indicating that participants found it equally legitimate to cheat both when asked before having the opportunity to lie and after.

Cheating behavior. Replicating the findings from Experiments 1 and 2, we found greater cheating through omission than through commission, $b = 1.43$, $SE = .34$, $Wald\ \chi^2 = 18.80$, $p < .001$, 95% CI for odds ratio [2.21, 8.22], $R^2 = .14$[3]. In the omission condition a total of 46.5% of participants cheated compared to 17.2% in the commission condition. Cheating behavior was not affected by the order of presentation of the questions ($p = .57$).

Mediation analysis. We tested whether lies of omission were perceived as more legitimate than those of commission, and whether this, in turn, predicted participants' unethical behavior. Figure 1 displays the path of the mediation analysis. We report the unstandardized coefficients for the regression analysis. Unstandardized coefficients are the preferred metric in causal modeling, and are particularly suitable when the independent variable is dichotomous (as in our case). Results showed that cheating was perceived as more legitimate in the omission condition (M = 3.90, SD = 2.31) than in the commission condition (M = 3.22, SD = 2.30), $b = .64$, $SE = .33$, $p < .05$, $R^2 = .02$. Higher legitimacy ratings significantly predicted cheating, $b = .36$, $SE = .08$, $Wald\ \chi^2 = 21.85$, $p < .001$, 95% CI for odds ratio [1.23, 1.67], $R^2 = .19$[4]. We examined the indirect effects of legitimacy ratings on cheating using 5,000 bootstrap samples (Hayes, 2009; MacKinnon, 2008; Preacher & Hayes, 2008; Shrout & Bolger, 2002). Results showed that the estimates were positive and the 95%

bias-corrected CI did not included zero [.02, .54]. The direct effect of omission and commission remained significant, (b = 1.39, SE = .35, $Wald\ \chi^2$ = 15.47, p < .001, 95% CI for odds ratio [2.02, 8.25], thus indicating that mediation was present.

---Insert Figure 1 about here---

Discussion

Experiment 3 replicated the behavioral pattern from the previous experiments. Additionally, both participants in the commission and omission condition were equally aware that participating in the lottery solely depended on their reports. Investigating possible differences in awareness ratings was important to ensure that the results were robust. Whereas the opportunity to lie to serve one's self-interest was clearly presented in omission, when participants were incorrectly informed that they won extra money, it might have been more difficult to grasp in commission, when the feedback provided by the software was correct. Finally, Experiment 3 tapped into a possible process underlying the higher level of cheating in omission, showing that when people are presented with the opportunity to refrain from reporting the truth after a software error, lying is perceived as legitimate. This occurs when individuals are aware of the ethical implications of the scenario (Baron & Ritov, 2004; Cusham, Murray, Gordon-McKeon, Wharton, & Greene, 2011; Cusham, Young, & Hauser, 2006).

Experiment 4

Although Experiment 3 identified a possible mediator for the relationship between omission, commission, and cheating, some confounding factors still remain. First, legitimacy ratings were assessed with only one item, which restricts the reliability of the observed results. In addition, one might argue that the way in which the Heads or Tails game was presented affected *per se* participants' behavior. Indeed, individuals were informed (before participating in the game) that the software was flawed, and could mistakenly provide

incorrect feedback about the possibility to participate in the lottery. Informing participants in advance that the software was bugged could influence our manipulation. Finally, it could be argued that the perceived likelihood of being caught misreporting is lower in the omission condition. After all, participants receiving incorrect feedback could simply confirm the outcome provided by the software. Purpose of Experiment 4 is to address these issues. More specifically we aimed to validate the effect of our manipulation while: 1) controlling for possible alternative explanations; and 2) increasing the reliability of legitimacy as mediator of the relationship between condition and cheating.

Method

Participants and Procedure

A total of 206 participants ($M_{age} = 36.05$, $SD_{age} = 11.07$) were recruited through Amazon Mechanical Turk in exchange for a flat fee of $0.30. Experiment 4 was identical to Experiment 3 with the following exceptions: First, we modified the description of the experiment and removed all the details regarding the possibility that the software had bugs that could lead to an incorrect matching between the coin toss and the outcome. Participants read that they would participate in an online Heads or Tails game and would have the opportunity to be selected to win $20 if their outcome was Heads. As in Experiment 3, after the software displayed the outcome of the coin toss, participants in the omission condition (N = 103) received incorrect feedback that they were entitled to participate in the lottery to win $20. Those in the commission condition (N = 103) received correct feedback informing them that they were not entitled to participate. Next, participants were asked to report their outcome by choosing between two options from a drop-down menu ("I am not entitled to participate in the lottery" vs. "I am entitled to participate in the lottery"). To assess the degree to which participants believed that lying was legitimate, we asked them to rate on a scale from 1 (not at all) to 7 (very) the extent to which they felt it was legitimate to participate in

the lottery, the extent to which they felt it was justified to participate in the lottery, and the extent to which it was licit to participate in the lottery. To investigate whether cheating resulted from a lower perceived probability of being caught, we asked participants what they believed the likelihood of getting caught misreporting was (1 = very low, 7 = very high). Finally, we measured whether participants were aware that they could report Heads to participate in the lottery and win $20. Specifically, participants were asked: "Are you aware that you can report Heads to participate in the lottery?" (1=Not at all aware, 7=Very aware). To control for order effects, we counterbalanced the order of the presentation of the questions within the two experimental conditions.

Results

Awareness and legitimacy ratings. Awareness ratings were higher in omission (M = 6.25, SD = 1.57) than in commission (M = 5.39, SD = 2.72), $F(1, 204) = 10.06$, $p = .002$. However, these ratings were not affected by the order of presentation of the questions nor by the interaction between order and condition, $p > .13$. Importantly, difference in awareness ratings did not predict cheating behavior, $p=.13$. We then conducted a principal component factorial analysis with VARIMAX rotation to assess whether the three items assessing legitimacy ratings loaded onto the same factor. Results showed that this was the case revealing that one single factor was extracted, explaining 74.3% of the variance. We therefore created a single legitimacy score by averaging participants' ratings in the three questions. Further analyses showed that neither the order of presentation of the questions, nor the interaction between condition and order, significantly affected legitimacy ratings, $p > .60$.

Perceived probability of being caught misreporting. Next, we tested whether the perceived probability of being caught differed across conditions. Results showed that ratings did not vary between omission (M = 5.54, SD = 1.84) and commission (M = 5.79, SD = 1.61), $p = .31$. The interaction between order of presentation and condition did not reach

significance, $p = .82$. When entered in a regression model predicting cheating behavior, neither the perceived probability of being caught, nor its interaction with condition predicted cheating, $p > .72$, whereas the main effect of condition was still significant, $p = .05$.

Cheating behavior. Next, we tested for possible order effects on cheating. Results revealed that unethical responses were not affected by the order of presentation of the questions ($p = .24$). As in the previous experiments, a significantly greater amount of cheating emerged in omission than in commission, $b = 2.76$, $SE = .47$, $Wald\ \chi^2 = 35.38$, $p < .001$, 95% CI for odds ratio [6.38, 39.41], $R^2 = .33^5$, with a total of 49.5% of participants cheating in the omission condition compared to 5.8% in the commission condition.

Mediation Analysis. Figure 2 displays the path of the mediation analysis. As in Experiment 3 we use and report the unstandardized coefficients to illustrate the strength of the associations among the experimental variables. As can be seen, participants reported that cheating was more legitimate in omission (M = 3.78, SD = 2.22) than in commission (M = 3.06, SD = 1.85), $b = .72$, $SE = .28$, $p < .05$. Higher legitimacy ratings significantly predicted cheating, $b = .57$, SE = .10, $Wald\ \chi^2 = 29.16$, $p < .001$, 95% CI for odds ratio [1.44, 2.17], $R^2 = .52^6$ (see Table 1 for correlations among the variables).

---Insert Table 1 about here---

We examined the indirect effects of legitimacy ratings on cheating using 5,000 bootstrap samples (Hayes, 2009; MacKinnon, 2008; Preacher & Hayes, 2008; Shrout & Bolger, 2002). Results revealed that the estimates for the legitimacy ratings were positive and the 95% bias-corrected CI did not included zero [.07, .82], suggesting that mediation was present.

---Insert Figure 2 about here---

Discussion

Experiment 4 demonstrated the robustness of our results, ruling out the possibility that the way the experiment was set up, or the perceived probability of being caught misreporting, influenced participants' behavior. Additionally, it strengthened the reliability of legitimacy ratings, providing further support for its mediating role in predicting cheating. Although we assessed participants' awareness ratings both in Experiment 3 and 4, only in Experiment 4 we found higher ratings in omission than in commission. We suggest two possible explanations to account for this result. First, it has to be noted that the two experiments are dissimilar in several aspects. For instance, in Experiment 3 we informed participants about the presence of a possible bug in the software, and subsequently asked them to report whether or not they had found an error in the matching of the payoff. Experiment 4 was devised to rule out the possibility that the cover story about the bug could bias participants' behavior. For this reason, and to ensure consistency, we avoided any reference to the words 'bug' or 'error' both in the cover story and the wording of the awareness item. Second, it is also possible that in Experiment 4, participants' violations of expectations about the correct matching between coin toss and outcome increased the level of vigilance of participants in the omission condition. Finally, it is important to note that awareness ratings did not predict cheating behavior, and mainly served as a manipulation check to ensure that participants understood the rules of the game, and that their final payoff would solely depend on their reports.

General Discussion

The distinction between active and passive transgressions is certainly not a new one. The omission bias – the tendency to judge inactions as less severe than actions in causing negative outcomes (Bar-Eli, Azar, Ritov, Keidar-Levin, & Schein, 2007; Kordes-de Vaal, 1996; Spranca et al., 1991) – has been demonstrated to be a consistent phenomenon across several domains. For instance, Ritov and Baron (1990) showed that participants were more likely to accept a higher death rate when this was the result of a vaccine failure than a vaccine

side effect (p. 275). This is because failing to act diminishes the perceived causal role of the agent. Similarly, Zeelenberg, Pligt, and de Vries, (2000) showed that actions produce greater regret than the decisions not to act.

Our work contributes to the current literature by showing that participants are more likely to refrain from telling the truth than actively lie when they face the temptation to benefit from dishonesty. Using an online Heads or Tails game, we manipulated the feedback regarding participants' possibility to enter a lottery and be selected to win an extra prize of $20. Although all participants saw the losing outcome of the coin, those in the omission condition were incorrectly informed that they won the game, and could enter the lottery to win the prize. Those in the commission condition received correct feedback informing that they lost the game. When asked whether they found any bug in the detection of the outcome, an average of 42.98% of participants (across the four studies) failed to report the true outcome in the omission condition to secure themselves the opportunity to increase their earnings. In Experiment 2, we showed that the perceived likelihood of the software bug did not account for the greater cheating in omission than in commission. In Experiment 3 we provided initial evidence for a mediator. Specifically, even when the final consequences are the same, refraining from reporting the truth is perceived as more legitimate that actively lying. Experiment 3 also showed that participants were aware that their possibility to win extra money solely depended on their reports, thus indicating that their responses could not be explained by ignorance or simple mistakes. Finally, Experiment 4 strengthened the validity of the mediation process by creating a more robust and reliable measure of legitimacy.

Whereas a vast array of research findings focused on self-report measures and hypothetical dilemmas (DeScioli et al., 2011; Kordes-de Vaal, 1996: Spranca et al., 1991), work on how the omission bias affects actual unethical behavior is scarce (see Teper &

Inzlicht, 2011 for an exception). Our findings add novel contributions to this literature, and more broadly to the literature on behavioral ethics. By developing a novel task to assess cheating behavior we show that when dishonesty pays, people are more likely to refrain from telling the truth than to actively break the rules. Importantly, we devised an experimental procedure in which acts of omission and commission are not affected by time constraints. This is an important aspect, as in previous work on the omission bias and unethical behavior (see Teper & Inzlicht, 2011), a time constraint was present only in the omission condition, and not in the commission condition. For this reason, it is possible that the higher cheating observed in acts of omission could be confounded with the effect of time (i.e., failing to press a computer key within 5 seconds), rather than being determined by inaction and a tendency to maintain the status quo. In our experiments we aimed to limit any effect of time on people's choices, and more importantly, we ensured that both the omission and the commission condition were directly comparable.

We also showed that perceived legitimacy mediates the effect of omission and commission on cheating behavior. To support this point, we directly assessed the extent to which participants believed that a clearly unethical act was deemed legitimate, licit, and justifiable. This is important, as previous work has mainly implied that in some circumstances cheating is more legitimate than in others (see Gino, Ayal, & Ariely, 2013; Pittarello et al., 2015; Shalvi et al., 2011; 2012), but objective evidence for this claim has not been yet provided. Furthermore, our results seem to suggest that individuals are willing to overtly modify their perception of what they feel entitled to do in order to maintain their ethical integrity (Barkan, Ayal, Gino, & Ariely, 2012). We further wish to highlight that the mere fact that participants cheated does not necessarily indicate their subjective legitimacy to lie. In fact, unethical behavior can be associated with different cognitions and motivations. For instance, individuals can lie while simultaneously pleading ignorance about the rules of

the experiment. This would allow them to reap the benefits of dishonesty while appearing honest to the self (or to the experimenter). Alternatively, according to a rational approach, individuals should cheat when the costs of lying (here: the probability of being caught) are outweighed by the benefits of lying (here: winning extra $20). However, our work rules out these possible alternative explanations.

Understanding how and under which circumstances people are more likely to violate the moral principles they uphold is key to lessen unethical behavior both within and outside organizations. We showed that changing the way in which an ethical scenario is construed can have significant consequences on people's behavior. For example, employees who can benefit from illicit business practices might fail to speak up and collude with corrupt managers. Similarly, sellers can "forget" to mention a hidden problem when selling a product. In both of these examples the illicit behaviors are perceived as more legitimate because people are not actively lying, while, at the same time, taking advantage of the opportunity to passively benefit from dishonesty. Our work can also be linked to previous research on the status-quo bias (Samuelson & Zeckhauser, 1988), that describes people's tendency "of doing nothing or maintain one's current or previous decision" (see also Ritov & Baron, 1992). Despite the similarities between the omission bias and the status-quo bias, scholars demonstrated that the two phenomena represent distinct mechanisms (Schweitzer, 1994). The status-quo bias represents the individuals' preference for inaction (Baron & Ritov, 1992; see also Kahneman & Tversky, 1982). This does not appear to be the case as in our experiments, as participants in the omission condition still had to report (after the coin toss) whether they were entitled (vs. not) to participate in the lottery.

Limitations and future research

Our work focused on the antecedents of cheating behavior, showing under which circumstances individuals are more likely to dishonestly serve their selfish interests. However,

a promising area of research would benefit from investigating the affective consequences of lies of omission and commission. For instance, recent work by Gino, and colleagues (2013) revealed that individuals feel less guilty when their unethical actions benefit others, and when the number of beneficiaries increases. Similarly, Peer, Acquisti, and Shalvi (2014) showed that people who partially confess their unethical actions feel less guilty for their misdeeds. In the context of our work, it would be interesting to investigate whether individuals who lied by exploiting incorrect feedback would be less likely to experience guilt than those who actively broke the rules of the game. Another interesting avenue for future research would be to further assess *why* individuals think that passive transgressions are more legitimate that active transgressions. In our experiments we argued that the error in the feedback provided participants a possible justification for their misdeeds. The role of the software in causing an undeserved (but more profitable) outcome to participants could have facilitated individuals' disengagement from ethical standards, therefore increasing dishonesty. Future work assessing more directly the extent to which people blamed the software, or displaced their responsibility to it, would be useful to further understanding the relationship between unethical acts of omission and perceptions of legitimacy. For instance, only participants high in moral disengagement (see Bandura, Barbaranelli, Caprara, & Pastorelli, 1996; Detert, Treviño, & Sweitzer, 2008; Shu, Gino, & Bazerman, 2011) should find it easier to blame the software or the experimenter, and therefore perceive cheating a more legitimate and justifiable option.

One possible way to extend our findings would be to include additional conditions in which participants see the winning side of the coin but receive incorrect feedback about their participation to the lottery. In this situation we would expect individuals to correct the software when the bug works against their financial interest. This pattern would indicate that omissions are more likely to occur only when they serve one's self-interest.

Furthermore, in all our experiments, participants were informed that two of them would be selected at random to win an extra amount of money. However, no information about the actual probability of winning was provided. Therefore, participants could have under or overestimated the chances of winning, and this, in turn, could have affected their behavior. Future work should manipulate the payoff structure (i.e., manipulating the potential likelihood of winning, or rewarding all participants who reported Heads) to test the generalizability of our data. A possible limitation of our work is that the honest response was always presented first when we asked participants whether they had found bugs in the software and were entitled to participate in the lottery. Future work should counterbalance the order of the honest and dishonest alternatives.

Conclusion

When dishonesty pays, subtle ways in which ethically questionable situations are framed can have a detrimental impact on participants' motivation to behave morally. We suggest that avoiding situations in which people can easily justify their misdeeds and increasing the transparency of the practices used both within and outside organizations could lessen the extent to which people feel legitimized to bend the rules and serve their financial interests.

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Footnotes

[1] We reported the Nagelkerke Pseudo-R^2. The Cox-Snell Pseudo-R^2 for the model is .08.

[2] We reported the Nagelkerke Pseudo-R^2. The Cox-Snell Pseudo-R^2 for the model is .05.

[3] We reported the Nagelkerke Pseudo-R^2. The Cox-Snell Pseudo-R^2 for the model is .10

[4] We reported the Nagelkerke Pseudo-R^2. The Cox-Snell Pseudo-R^2 for the model is .13

[5] We reported the Nagelkerke Pseudo-R^2. The Cox-Snell Pseudo-R^2 for the model is .23

[6] We reported the Nagelkerke Pseudo-R^2. The Cox-Snell Pseudo-R^2 for the model is .36

Supplementary Analyses

We conducted further analyses in order to control for participants' motivation and effort to participate in the online study sessions. For each experiment we computed the average time spent on the surveys and removed participants with a completion time 2SD above the average.

Experiment 1. Results showed that the pattern of behavior was robust, revealing that 39.6% of participants in omission cheated, compared to 13% of participants in commission, $b = 1.47$, $SE = .37$, $Wald\ \chi^2 = 15.31$, $p < .001$, 95% CI for odds ratio [.11, .48], $R^2 = .13$.

Experiment 2. The main effect of condition was significant, $b = 1.04$, $SE = .34$, $Wald\ \chi^2 = 8.81$, $p = .003$, 95% CI for odds ratio [1.40, 5.29], $R^2 = .06$, showing that 37% of participants cheated in omission, compared to 17.5% in commission. No order effect on cheating emerged ($p = .93$), and likelihood ratings did not differ when assessed before (vs. after) participants could lie ($p = .78$). The probability that the software could commit an error was perceived as higher in omission (M = 5.54, SD = 1.7) than in commission (M = 3.79, SD = 1.94), t (195), = -5.83, $p < .001$, and likelihood ratings did not affect cheating, $b = .14$, $SE = .08$, $p = .08$. Crucially, when the perceived probability of the error was entered as an additional predictor its effect did not reach significance ($p = .53$), whereas the main effect of our manipulation was still significant ($p = .01$).

Experiment 3. In Experiment 3 cheating was again higher in omission than in commission, $b = 1.45$, $SE = .34$, $Wald\ \chi^2 = 17.87$, $p < .001$, 95% CI for odds ratio [2.17, 8.34], $R^2 = .14$. Overall, 46.3% of participants cheated in omission compared to 16.8% in commission.

Awareness and legitimacy ratings. Awareness ratings did not differ between commission (M = 4.96, SD = 2.31) and omission (M = 4.98, SD = 2.36), $p = .95$. The interaction between the order of presentation of the questions and condition was not significant ($p = .32$). No order effect emerged on legitimacy ratings ($p = .76$).

Mediation Analysis. The indirect effect of legitimacy was significant, $b = .22$, SE = .13, 95% CI for odds ratio [.01, .52], therefore indicating mediation.

Experiment 4. We applied the same exclusion criterion in Experiment 4. Results showed that cheating was higher in omission than in commission, $b = 2.78$, $SE = .46$, $Wald\ \chi^2 = 35.69$, $p < .001$, 95% CI for odds ratio [6.48, 40.22], $R^2 = .34$. Overall, 50.5% of participants cheated in omission, compared to 5.9% in commission.

Awareness and legitimacy ratings. Awareness ratings were higher in omission (M = 6.29, SD = 1.57) than in commission (M = 5.42, SD = 2.28), $F(1, 201) = 10.01$, $p = .002$. Awareness ratings did not predict cheating ($p = .15$). Neither the order of presentation nor the interaction between order and condition significantly predicted ratings of awareness, $p > .19$. A factorial analysis with VARIMAX rotation showed that three legitimacy items loaded onto single factor, explaining 74.9% of the variance. Neither the order of presentation of the questions, nor the interaction between condition and order significantly affected legitimacy ratings, $p > .58$.

Perceived probability of being caught misreporting. The perceived probability of being caught did not vary across omission and commission, $p = .25$, and the interaction between order of presentation and condition was not significant, $p = .93$. Importantly, neither the perceived probability of being caught misreporting, nor its interaction with condition significantly affected cheating, $p > .71$, whereas the main effect of the condition was marginally significant, $p = .06$.

Mediation Analysis. Legitimacy ratings significantly differed across condition, $p = .01$. Importantly, the indirect effect of legitimacy was significant, $b = .42$, SE = .20, 95% CI for odds ratio [.09, .91], therefore indicating that mediation was present.