

Pre-planning and the Continuation of Dishonest Behavior: An Experiment^{*}

Subhasish M. Chowdhury ^a, Chulyoung Kim ^b and Sang-Hyun Kim ^b

^a Department of Economics, University of Bath, Bath BA2 7JU, United Kingdom

^b School of Economics, Yonsei University, Seoul 03722, South Korea

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Abstract

We examine experimentally whether the ability to pre-plan one's action may reduce the possible inter-temporal spillover effect. We implemented two treatments where either the subjects were informed ex-ante that they would have two subsequent opportunities to tell a lie for some monetary gain, or they were informed about the decision making in each stage just before the stage started. We find that when it was not possible to pre-plan, repeated opportunities to tell a lie resulted in subjects telling a lie even for a smaller monetary gain, i.e., getting more vulnerable to a temptation to behave dishonestly for profit. However, when pre-planning was feasible, the proportion of subjects telling a lie was relatively high in the first stage, and then it went down in the subsequent opportunity. We argue that the feasibility of pre-planning invites a compensatory, instead of consistent, action, and thus induces more dishonest responses in the first stage and fewer in the second. Overall – considering both stages – more subjects told lies when they had had a chance to pre-plan.

JEL Classifications: C91; D01; D91

Keywords: Dishonesty; Lying; Pre-planning; Moral licensing; Conscience accounting

* Corresponding author: Sang-Hyun Kim (sang.kim@yonsei.ac.kr)

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1. Introduction

In day-to-day life, people often resort to dishonest behavior. In specific, they may tell lies in order to gain some benefit that may not be achieved otherwise. Such behaviors include inflating achievements in one's resume, misreporting performance, and under-reporting ground reality to gain support – to name a few. Often such possibilities of telling a lie come as a surprise. It can come as a one-of-a-time event to tell such lies (e.g., inflating experience to gain a one-time contract), or an event in a new environment that the person concerned is not accustomed with (e.g., moving in from an ethical environment to a corrupt environment). However, it is also possible that people are involved in a repeated system where it is possible for one to plan to tell (or not to tell) a lie. Examples of such cases may be joining a system which is well known to be vulnerable to corruption (a specific example is a public office in developing countries such as India – where it is possible to engage in profitable dishonest behavior). Abstracting away from the issue of reputation building, it is not very clear on the outset which of the situations described above will result in a higher volume of lies. This is because whereas pre-planning may allow people to lie more efficiently, it may also bring in moral hindrance in repeating lies. In this study we investigate this particular aspect.

Recent studies in psychology have explored the dynamics of moral feelings and the subsequent behavior. It is expected that someone who is prone to honest (or dishonest) behavior will continue to do so – that is, will follow consistency. However, in contrast to what has been widely recognized in the literature (see for instance, Abelson et al., 1968 and Gawronski and Strack, 2012), people often deliberately choose to be inconsistent: reminding an honest or moral behavior in the past often leads to a dishonest or an immoral behavior later. Such an inconsistent pattern of behavior, often called “moral licensing” (or “moral cleansing”, when moral acts follow immoral ones) in the literature, has been reported in various domains. See Blanken et al. (2015) for a review.

A natural question is under which condition moral licensing, instead of consistency, manifests and whether pre-planning has an effect in such manifestation. We approach this question experimentally with a 2x2 factorial design. We either provided the subjects at the outset with the information that they might be able to tell lies to improve their payoff repeatedly (hence they could pre-plan accordingly), or we provided such information in each step (and hence they could not pre-plan). Furthermore, we controlled whether they had the incentive to resort to tell a lie in the first place or not. In case they had such an incentive to start with, they

might show either a consistent behavior (to tell a lie again) or a compensatory behavior (to not tell a lie again). We are interested to see whether pre-planning can make such moral licensing (i.e., compensatory behavior) salient and stop possible inertia. We find that indeed when it was not possible to pre-plan, repeated opportunities to tell a lie resulted in subjects telling a lie even for a smaller monetary gain, i.e., getting more vulnerable to a temptation to behave dishonestly for profit. However, when pre-planning was feasible, in accord with moral licensing theory, the proportion of subjects telling a lie was relatively high in the first stage, and then it went down in the subsequent opportunity.

Although we introduce the idea of pre-planning for the first time in this area of literature, we are not the first to ask the general question of the relative prominence of consistency versus moral licensing. Both behavioral economists and psychologists have investigated this question earlier. In an experiment, Conway and Peetz (2012) asked the subjects to complete a moral identity questionnaire (*a la* Aquino and Reed, 2002) in one treatment, and a questionnaire asking specific past moral acts in the other treatment. After filling in the questionnaire, the subjects indicated how many dollars from the show-up payment should be donated on their behalf to charity. The authors find that moral licensing manifested only in the action treatment. That is, those who completed an “immoral action” questionnaire, reminding one’s immoral actions in the past, donated significantly more than those who completed a “moral action” questionnaire. Such a difference is not observed among those who completed a “trait” questionnaire. So, they conclude that reminding one’s action and one’s trait have different effects on one’s moral behavior.

Mazar and Zhong (2010) investigate whether buying “green” products make people behave more or less honestly afterwards. Specifically, the subjects were asked to buy “green” products (treatment) or “normal” ones (control), and then they played the following game: the participants observed dots in the vertically divided computer screen, and answered on which side there were more dots. Regardless of the number of dots in the screen, they were paid 0.5 cents if they indicated there were more dots on the left, and 5 cents if they indicated the right. The analysis shows that those who bought green products tended to lie more for monetary profit in the dot-counting game.

Using the deception game developed by Gneezy (2005), Gneezy et al. (2014) show that those who made an unethical choice (i.e., deceiving the partner in the first stage) were more likely to behave nicely later, (i.e., to donate more to charity). More related to our paper, they also find that those who knew that a donation opportunity would be given, made more

unethical decisions in the first stage. The authors succinctly explain these phenomena by developing a theory of “conscience accounting”. A similar result is found by Cujoc and Stoian (2014).

The study by Garrett et al. (2016) used a sequential decision to tell lies and is very close to our current investigation. Here subjects were given multiple opportunities to lie to their partners. Over time, the size of the lie increased, and fMRI shows that signals in the amygdala, an area related to emotions, became weaker. Hence, this study sheds light on the brain mechanism leading to consistency in dishonest behavior.

In static settings, numerous researchers have devised methods to measure the innate preference for truth-telling. Early such attempts include Gneezy (2005), Mazar et al. (2008) and Erat and Gneezy (2012). Lying experiments after Fischbacher and Föllmi-Heusi (2013) try to make the environment completely anonymous, which is required to measure the truly innate preference. Abeler et al. (2017) and Gneezy et al (2017) are two recent studies that show the state of art in the literature on lying aversion. According to these studies, people are reluctant to lie even in a completely anonymous environment, and when they do lie for monetary profit, they often do not maximize their monetary payoff in order to avoid a “bigger” lie.

Our results are of importance for two reasons. First, those fill in a void in the existing literature on consistency versus moral licensing in dishonest behavior by incorporating the idea of pre-planning. Our results show that it may be possible to reduce future dishonesty by providing information about the details of future events beforehand. And this leads to the second reason of importance: our results provide indication of designing policies to reveal (or not) information about the possibilities of telling a lie depending on the structure of the interaction – in order to reduce dishonest behavior in an organization.

The rest of the paper continues as follows. Section 2 describes the experimental design and hypotheses. Section 3 reports the results and Section 4 concludes.

2. Hypotheses and Experimental Details

To study the dynamics of dishonest behavior and the effects of planning, we conducted a simple two-stage experiment. In each stage, a subject observed a picture of a coin. Regardless of whether the head or the tail appeared on the screen, in each stage the subject could earn more

money if he/she reported ‘Head’ instead of reporting ‘Tail’.¹

The monetary stake differed across the stages. The first stage was the *high stake* stage. A subject could earn KRW 5,000 (= about USD 4.36 with an exchange rate of 1 USD =1146.8 KRW) by reporting ‘Head’, but nothing at all for reporting ‘Tail’. Thus, the marginal gain of reporting ‘Head’ (irrespective of the picture shown) was KRW 5,000. In the second stage, on the other hand, KRW 2,000 (=USD 1.75) was given when reporting ‘Head’, and KRW 1,000 (=USD 0.87) was given when reporting ‘Tail’. So, the additional gain from a possible dishonest behavior was KRW 1,000. This design is implemented to examine whether a subject becomes more vulnerable to even a smaller monetary temptation once he/she has given up (or got succumbed to) a larger temptation.

All participants had a monetary incentive to lie in the second stage, but not all had the incentive to tell a lie in the first stage. In specific, in the second stage, everybody observed the picture of the tail side of the coin (although ex-ante they did not know that would be the case), for which they all had a monetary incentive to be dishonest and report ‘head’. In the first stage, on the other hand, about half of the subjects observed the picture of the head side, while the other half observed the tail side. Beforehand, they did not know which side they would observe, thus did not know whether they would have to tell a lie to earn more money.

Given this basic structure, we implemented a 2x2 factorial design. The instruction given at the beginning of the experiment differed across the treatments. The dimension of the treatment varied in two ways. First, either the subjects were given the description of the whole experiment at the beginning, or were given only the description of the imminent stage. Second, subjects either observed a head in the first stage, or a tail in the first stage.

Those who were assigned to the ‘Myopic-decision’ treatments (treatment M) were told that they would make two decisions, but were not told what the second decision making would be. Thus, the subjects in treatment M did not have a chance to make a plan or form an internal criterion. On the contrary, the subjects in the ‘Planned-decision’ treatments (treatment P) were told at the beginning the details of both the first and the second stage decision making problems, and thus were given a chance to make a plan. Furthermore, they were invited to think about how he/she would report when the picture of the head or the tail showed up. Finally, treatments in which subjects observed Head (Tail) is called treatment H (T). To sum up, we consider the

¹ To avoid confusion about which side is the head, the subjects were shown the pictures of the coin with labels. Also, we did not tell the subjects how the face of the coin is chosen – and hence did not implement deception.

following four treatments in Table 1.

Table 1. Treatment description

2x2 Factorial Design	Observation in the first stage	
	Head	Tail
Myopic	MH	MT
Planned	PH	PT

Note that the subjects assigned to MH and PH did not have a monetary incentive to tell a lie in the first stage as truth-telling was more rewarding than lying.

This design serves two purposes. First, by comparing MT to MH and PT to PH, we will be able to investigate whether the environment and the past decision have a lasting effect on honesty. Moral licensing or moral cleansing theory (see for example, Merritt et al., 2010 and Blanken et al., 2014) predicts that those who lie in the past tend to behave more honestly to maintain a good self-image. In contrast, the finding of Garrett et al. (2016) suggests that those who lied in the first stage would lie more in the second, because “the brain adapts to dishonesty.”

It is noteworthy that in Garrett et al. (2016), subjects were asked to do a similar task (sending a message to the matched partner) repeatedly, whereas in most of moral licensing experiments subjects performed two different tasks (e.g., filling in a questionnaire and then donating money to charity) subsequently. In this aspect, our design is closer to that of Garrett et al. (2016). However, the subjects in Garrett et al.’s experiment were not given a chance to make a plan beforehand. Hence, we expect consistency to dominate in subjects’ responses in treatment M as in Garrett et al.’s, whereas it is unclear which effect will dominate in treatment P. Our design allows to examine the validity of this reasoning.

Second, according to the theory of conscience accounting (Gneezy et al., 2014), when subjects know that they will have a chance to behave nicely later, subjects are *less* reluctant to take an immoral action in the early stage. This pattern of behavior was found in Gneezy et al. (2014), where subjects were given a chance to tell a lie to the partner and then a chance to donate money to charity. We are to test if this prediction remains valid when subjects are given repeated opportunities to tell a lie, in which subjects are likely to show consistent, rather than

compensatory, behavior as argued above. Thus, our hypotheses are stated as follows:

- H.1** Effect of prior opportunity: subjects are more likely to lie in the second stage in MT (PT) than in MH (PH).
- H.2** Effect of pre-planning I: subjects in PT, anticipating that they will have a chance to be honest in the second stage, are more likely to lie in the first stage compared to the subjects in MT.
- H.3** Effect of pre-planning II: following their plan, subjects are more likely to lie ‘in the first stage *but not* in the second stage’ in PT than in MT.

We conducted the experiment at the laboratory managed by the Center for Research in Experimental and Theoretical Economics (CREATE) at Yonsei University, South Korea. We invited 145 undergraduate and graduate students by email. The subject interface was built by Google survey – all subjects were South Koreans. Observing the picture of a coin, subjects completed a sentence “_____ side is up” by choosing ‘Head’ or ‘Tail’. The instructions were in Korean, and a translated version of the instruction is in the Appendix. Immediately after the experiment the subjects answered a demographic survey regarding their age, major, gender and religion, and then went to another room one by one. There they were paid the earned money and a show-up fee (KRW 3,000 = USD 2.62).² Each subject was assigned to a single treatment (i.e., between-subject design), and did not participate in any economics experiment before. The experiment took about 30 minutes and the average payment was KRW 8565 (= USD 7.55).

3. Results

3.1 Descriptions and Observations

We start with presenting the descriptive statistics of the experimental data. Table 2 below reports the proportion of subjects reporting ‘Head’, the corresponding standard deviation, and the number of subjects per treatment – divided by per stage within treatment. The

² Fischbacher and Föllmi-Heusi (2013) proposed a double-blind protocol that strongly ensures the anonymity of subjects so as to measure the purely internal preference for truth telling. We did not follow their protocol because our main interest, unlike theirs, does not lie in measuring the preference accurately, but in the dynamic responses to temptations to dishonesty through treatment effects. Furthermore, neither of our benchmark studies such as Gneezy et al. (2014) and Garrett et al. (2016) followed such double-blind protocol. Hence, to make our result to comparable to the existing ones, we decided to adopt the current design.

corresponding diagrammatic representations are in Figure 1.

Table 2, and the bars in Figures 1.a and 1.b show the proportion of subjects who reported ‘Head’, in the order of MH, MT, PH and PT from left to right. Since a response is a binary (i.e., Bernoulli) variable, the usual confidence interval is misleading, and thus omitted. Those in MH and PH observed the head side in Stage 1, so everybody reported ‘Head’ in that stage.

Table 2. Descriptive statistics of reporting ‘Head’

	MH		MT		PH		PT	
	Stage 1	Stage 2						
Average	1	0.2353	0.5789	0.5526	1	0.5143	0.7368	0.5263
Std Dev	0	0.4306	0.5004	0.5039	0	0.5071	0.4463	0.506
N	34	34	38	38	35	35	38	38

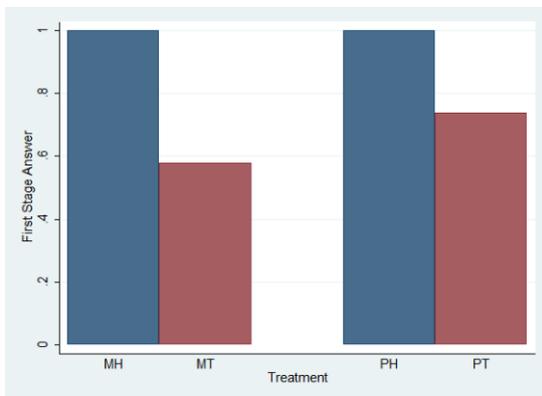


Figure 1.a Proportion reported ‘Head’ in Stage 1

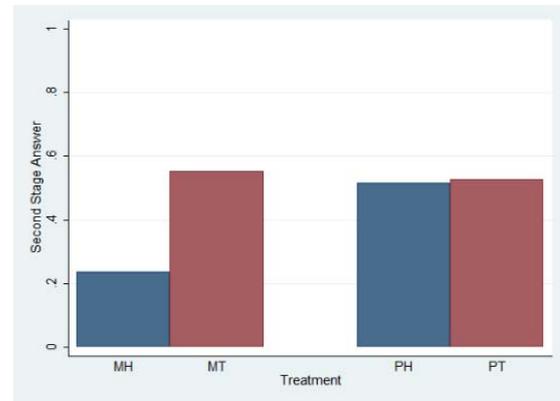


Figure 1.b Proportion reported ‘Head’ in Stage 2

From Figure 1.a, we obtain our first observation:

Observation 1. MT vs PT: More subjects lied in Stage 1 when they had a chance to pre-plan.

This is consistent with H.2, according to which subjects are more likely to lie in PT than in MT, anticipating that they would have a chance to be honest later. But, to fully understand the second stage decision, we need to consider it together with the first stage.

In any treatment, there were four possible responses in (Stage 1, Stage 2): (Head, Head), (Head, Tail), (Tail, Head), and (Tail, Tail). The subjects in MH and PH observed the head side in the first stage, and by reporting ‘Head’ they could earn KRW 5,000. Naturally, no one lied in the first stage in such a situation, and we observe only two responses, (Head, Head) and (Head, Tail), in these two treatments. On the other hand, those who were assigned to MT and PT observed the tail side in the first stage, and had to decide whether to lie to earn an additional KRW 5,000 by telling a lie or not. But it would be unreasonable to resist a stronger temptation (the high stake in the first stage) and then to give in to a weaker one (the low stake in the second stage). Indeed, subjects behave consistently in this regard and no one in our sample reported (Tail, Head). More detailed information is presented in Table 3.

Table 3. Numbers of the subjects by responses

Report	MH	MT	PH	PT	Total
(Head, Head)	8	21	18	20	67
(Head, Tail)	26	1	17	8	52
(Tail, Head)	0	0	0	0	0
(Tail, Tail)	0	16	0	10	26
Total	34	38	35	38	145

Given the distribution several further observations are worth noting.

Observation 2. MH vs MT: More subjects lied in Stage 2 when they had a chance to lie in Stage 1.

Only 8 subjects out of 34 (23.5%) lied in the second stage in MH, whereas 21 subjects out of 38 (55.3%) did so in MT. This shows that the past actions have a spillover effect on the subsequent behavior, as predicted in H.1. Since not everybody in MT lied in the first stage, one may wish to control for income effect by focusing on those who reported ‘Head’ in Stage 1, which unfortunately invites a selection bias. Now, in order to control for the selection bias, we first eliminate the ones who were very reluctant to lie, and compare the rest in MH and MT. We can calculate the proportion of subjects who were reluctant to lie using the MT sample: since 16 of them never told a lie, the proportion is $16/38 = 42.1\%$. This means that

approximately 14 subjects in MH would have not lied at all if assigned to the MT treatment. Eliminating 14 subjects who reported (Head, Tail) from the sample of MH, we are left with 20 subjects in MH, among whom 8 subjects (40%) lied in the second stage. In contrast, 21 subjects out of 22 (95%) in MT earned KRW 5,000 in the first stage, and kept lying in the second to earn additional KRW 1,000. This result echoes that of Garrett et al. (2016), and in sharp contrast to the studies on moral licensing. Once subjects choose to be dishonest, they seem to become vulnerable to even a smaller temptation.

Interestingly, we do not observe this spillover effect in the sample of treatment P. That is, when given a chance to make a plan, 18 out of 35 (51.4%) in PH and 20 out of 38 (52.6%) in PT lied in the second stage. This may be natural since the impact of history would not exist if one made his/her decision at the outset as in PH and PT. This way of decision making resembles the static decision making, and thus we would likely observe “partial lying” which has been emphasized in recent studies (e.g., Abeler et al., 2017 and Gneezy et al., 2017).

Observation 3. MT vs PT: More subjects changed their choice from lying (in Stage 1) to not lying (in Stage 2) when pre-planning was possible.

In MT, only one subject reported (Head, Tail). In other words, almost everybody always or never lied. In contrast, a sizable proportion of subjects (8 out of 38) in PT lied for the high stake and did not lie for the small stake. This is in accord with H.3; more subjects in PT told a lie in the first stage than those in MT, planning to behave honestly in the second stage, and they followed their plan. This also can be interpreted as “partial lying” as mentioned above. A subject could “partially lie” in our dynamic setup only if one realized his/her own internal criterion (i.e., the lying cost) and stuck to the criterion. The opportunity to make a plan might facilitate this mental process. It turns out that in our sample, 21% (=8/38) of the subjects had a lying cost between KRW 1,000 and 5,000.

Observation 4. MT vs PT: More subjects lied at least once when pre-planning was possible.

Again, this observation is consistent with H.2. Knowing that they could compensate their conscience later, more subjects lied at least once in PT than in MT. In MT, those who did not lie for the high stake might have found that they should not lie for the low stake in order to be consistent. This is a finding comparable to the escalation result of Garrett et al. (2016). Not only dishonesty but honesty as well may have a lasting effect on the future behavior.

Observation 5. MH vs PH: More subjects lied in Stage 2 when pre-planning was possible.

This observation was not anticipated by our hypotheses. In contrast to that only 8 subjects (23.5%) lied in MH, 18 subjects (51.4%) lied in PH. The response in PH is largely consistent with other observations: about 52~55% of subjects always lied in MT and PT. What is not consistent with these observations is the fact that only 23.5% subjects lied for the small stake in MH. This may be again a manifestation of the impact of the past experience.

3.2 Statistical tests and support for observations

The Observations stated above are casual and must be tested statistically before we can make any conclusion. Below we provide such statistical tests, adopting the linear probability model. Although not reported here, we also employed Probit model, and found that the results remained basically the same.

Table 4. Regression Analysis of the Likelihood of Lying

Dep. var.	Lying in Stage1	Lying in Stage2		Reported (Head,Tail)	Lied at least once
MT	-0.216* (0.1133)	0.3114*** (0.1094)		-0.1444* (0.0744)	-0.216* (0.1133)
PH			0.2768** (0.1079)		
Age	-0.003 (0.0226)	-0.063** (0.0257)	-0.0558*** (0.0204)	0.039** (0.0148)	-0.003 (0.0226)
Econ&Biz	0.189 (0.1268)	-0.0049 (0.1154)	0.0262 (0.1119)	0.0603 (0.0833)	0.189 (0.1268)
Male	0.0787 (0.1145)	0.2261* (0.1187)	0.2689** (0.1097)	-0.0858 (0.0752)	0.0787 (0.1145)
Religious	-0.1769 (0.1114)	0.1169 (0.1166)	0.1737 (0.1094)	-0.0168 (0.0731)	-0.1769 (0.1114)
R ²	0.1053	0.1944	0.2461	0.1677	0.1053
Sample	MT & PT	MH & MT	MH & PH	MT & PT	
N	76	72	69	76	

N.B.: Numbers in parenthesis are SEs. * indicates statistical significance at 10%, ** indicates 5%, and *** indicates 1%.

We start with reporting the test results for Observations 1, 2 and 5, regressing the dummy variables indicating whether a subject told a lie in the first or the second stage on the treatment dummies, subject's age, and dummies for whether the subject studies Economics or Business administration, male and self-reported religiosity (whether having a religion or not). Table 4 shows the estimated coefficients and the standard errors.

The first column supports Observation 1 and H.2. This shows that indeed subjects tended to lie more in PT compared to in MT and this difference is statistically significant at 10% level ($p\text{-value}=0.061$).

The statistical tests for Observation 2 (H.1) are presented in the second column. The difference between MH and MT is significant at 1% level. In other words, subjects lied significantly more often in Stage 2 if they were given a chance to lie in Stage 1. Also, it turns out that relatively younger and male subjects were more likely to tell a lie in Stage 2.

The third column shows support for Observation 5, i.e., the difference between MH and PH is also statistically significant. As argued above, this is due to that subjects were very reluctant to lie in MH. We again observe that relatively younger, non-religious and male subjects lied more. These are in line with the existing literature on lab experiment (e.g., Gneezy et al., 2013) but in opposite to some field results (e.g. Bucciol et al., 2013). Since these are only controls and not our point of interest, we do not discuss these any further.

Next, we move on to the statistical tests for the effects of pre-planning (Observations 3 and 4 or H.2 and H.3). In the regressions reported in the fourth and the fifth columns, the independent variables remain the same, but the dependent variables are whether the subject reported (Head, Tail), or the subject lied at least once in the experiment.

The fourth column shows that significantly more subjects changed one's response (i.e., partially lied) in PT than in MT. The estimated effect of planning is statistically significant at 10% level ($p\text{-value}=0.056$). This provides support for Observation 3 (or H.2).

Finally, the fifth column shows that more subjects, anticipating that they could make it up, lied in PT than in MT, and the effect is significant at 10% level. Hence, this supports Observation 4 (or H.3). Note also that the numbers in the first and the fifth columns identical because there was no one who did not lie in the first and then did lie in the second stage. Thus, the number of subjects who lied at least once is that of subjects who lied in the first stage.

4. Discussion

In this study, we revisit an important question in the study of dishonest behavior. We investigate which of consistency and moral licensing determines the dishonest behavior pattern when people have the opportunity to tell lies repeatedly. Furthermore, we also investigate whether the possibility of pre-planning can interact with the consistency or the moral licensing factors and influence the decision making procedure. We implement a two-stage experiment where the subjects are either allowed to pre-plan their decision or not. We also control for the opportunity for the possible dishonest behavior.

Confirming to the literature on consistency, we find that more subjects lied in the second stage when given a chance to lie in the first stage. Adding to the literature and in line with the moral licensing theory, we also find that more subjects changed their choice from lying in the first stage to not lying in the second stage when they had a chance to pre-plan their actions. This is an important result because it implies that if it is possible for agents to engage in dishonest behavior in an organization, then revealing information about such future opportunities might stabilize such behavior.

However, we also observe that more subjects lie in the first stage and more subjects lie at least once (out of two stages) when they had a chance to pre-plan. Hence, the overall effectiveness of such information revealing policy (including the dishonest behavior in the initial stages) will remain an empirical question.

Our results also raise some very important questions. We have implemented a specific frame (making an incorrect statement for monetary gain) of dishonest behavior. It remains to see whether other frames – including that of white-lies – may cause the same results. The experiment focuses on comparing the two possible sources of continuation of dishonest behavior, consistency and moral licensing, and investigates so through treatment effects. It will be interesting to investigate whether the results are robust when the lying task is in the loss frame (Grelleau et al., 2016). Also, the issues of conformity or awareness (Fosgaard et al., 2013) may affect the results. Finally, the possibilities of reputation formation and punishment will allow further complications but stronger external validity. We leave these issues for possible future works.

Reference

- Abeler, Johannes, Daniele Nosenzo and Collin Raymond (2016), “Preferences for truth-telling”, working paper
- Abelson, R. P., E. Aronson, W. J. McGuire, T. M. Newcomb, M. J. Rosenberg, P. H., Tannenbaum (1968), *Theories of cognitive consistency: A sourcebook*, Rnad McNally, Chicago
- Blanken, Irene, Niels van de Ven and Marcel Zeelenberg (2015), “A meta-analytic review of moral licensing”, *Personality and Social Psychology Bulletin*, 41(4), 540-558
- Blanken, Irene, Niels van de Ven, Marcel Zeelenberg, M. Meijers (2014), “Three attempts to replicate the moral licensing effect”, *Social Psychology*, 45, 232-238
- Buccioli, A., Landini, F., & Piovesan, M. (2013). Unethical behavior in the field: Demographic characteristics and beliefs of the cheater. *Journal of Economic Behavior & Organization*, 93, 248-257.
- Cojoc, D., & Stoian, A. (2014). Dishonesty and charitable behavior. *Experimental Economics*, 17(4), 717-732.
- Conway, Paul and Johanna Peetz (2012), “When does feeling moral actually make you a better person? Conceptual abstraction moderates whether past moral deeds motivate consistency or compensatory behavior”, *Personality and Social Psychology Bulletin*, 38(7), 907-919
- Erat, Sanjiv and Uri Gneezy (2012), “White lies”, *Management Science*, 58(4), 723-733
- Fischbacher, Urs and Franziska Föllmi-Heusi (2013), “Lies in disguise—An experimental study on cheating”, *Journal of the European Economic Association*, 11(3), 525-547
- Fosgaard, T. R., Hansen, L. G., & Piovesan, M. (2013). Separating Will from Grace: An experiment on conformity and awareness in cheating. *Journal of Economic Behavior & Organization*, 93, 279-284.
- Garrett, Neil, Stephanie C Lazzaro, Dan Ariely and Tali Sharot (2016), “The brain adapts to dishonesty”, *Nature Neuroscience*, 19(12), 1727-1732
- Gawronski, B. and F. Strack (2012), *Cognitive consistency: A fundamental principle in social cognition*, Guilford Press, New York
- Gneezy, U., Rockenbach, B., & Serra-Garcia, M. (2013). Measuring lying aversion. *Journal of Economic Behavior & Organization*, 93, 293-300.
- Gneezy, Uri, Agne Kajackaite and Joel Sobel (2017), “Lying aversion and the size of the lie”, working paper
- Gneezy, Uri, Alex Imas and Kristof Madarasz (2014), “Conscience accounting: Emotion dynamics and social behavior”, *Management Science*, 60(11), 2645-2658

- Grolleau, G., Kocher, M. G., & Sutan, A. (2016). Cheating and loss aversion: Do people cheat more to avoid a loss?. *Management Science*, 62(12), 3428-3438.
- Mazar, Nina and Chen-Bo Zhong (2010), "Do green products make us better people?", *Psychological Science*, 21(4), 494-498
- Mazar, Nina, On Amir and Dan Ariely (2008), "The dishonesty of honest people: A theory of self-concept maintenance", *Journal of Marketing Research*, 45, 633-644
- Merritt, A. C., D. A. Effron and B. Monin (2010), "Moral self-licensing: When being good frees us to be bad", *Social and Personality Psychology Compass*, 4, 344-357

Appendix: Instructions

<Screen 1> [For all treatments]

Thank you for participating in our experiment. Please read the instruction carefully. Please wait for further instruction from the experimenter.

<Screen 2> [Only for PH and PT]

You will make two similar decisions in this experiment. In the next page, you will see either “the picture side” or “the number side” of a coin.

[picture side shown] & [number side shown]

After seeing the side of a coin in the next page, you choose to report either “the picture side appeared” or “the number side appeared.”

If you choose to report that “the picture side appeared,” you obtain X.

If you choose to report that “the number side appeared,” you obtain Y.

The amount of money you obtain depends only on your report.

In your first decision making problem, X is KRW 5,000 and Y is KRW 0.

In your second decision making problem, X is KRW 2,000 and Y is KRW 1,000.

In the next page, either “the picture side” or “the number side” of a coin will appear. Please think about what your decision will be.

In your first decision making problem, what would be your report if “the picture side” of a coin appears? What if “the number side” of a coin appears?

In your second decision making problem, what would be your report if “the picture side” of a coin appears? What if “the number side” of a coin appears?

If you have any question, please raise your hand.

<Screen 3> [For all treatments]

Decision making 1

Your first decision making problem is the following. In the next page, you will see either “the picture side” or “the number side” of a coin.

[picture side shown] & [number side shown]

After seeing the side of a coin in the next page, you choose to report either “picture side appeared” or “number side appeared.”

If you choose to report “the picture side appeared,” you obtain KRW 5,000.

If you choose to report “the number side appeared,” you obtain KRW 0.

The amount of money you obtain depends only on your report.

If you have any question, please raise your hand.

<Screen 4> [For all treatments]

You choose to report either “picture side appeared” or “number side appeared.”

If you choose to report “the picture side appeared,” you obtain KRW 5,000.

If you choose to report “the number side appeared,” you obtain KRW 0.

[picture side shown in MH and PH while number side shown in MT and PT]

The _____ of a coin appeared.

- picture side
- number side

<Screen 5> [For all treatments]

Decision making 2

Your second decision making problem is the following. In the next page, you will see again either “the picture side” or “the number side” of a coin.

After seeing the side of a coin in the next page, you choose to report either “the picture side appeared” or “the number side appeared.”

If you choose to report “the picture side appeared,” you obtain KRW 2,000.

If you choose to report “the number side appeared,” you obtain KRW 1,000.

The amount of money you obtain depends only on your report.

If you have any question, please raise your hand.

<Screen 6> [For all treatments]

You choose to report either “the picture side appeared” or “the number side appeared.”

If you choose to report “the picture side appeared,” you obtain KRW 2,000.

If you choose to report “the number side appeared,” you obtain KRW 1,000.

[Number side shown in all treatments]

The _____ of a coin appeared.

- picture side
- number side