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Abstract

In this paper we investigate if people cheat more when they observe their peers cheating because they *conform* or because they become *aware* that cheating is something to actively consider. In our experiment subjects toss a coin in private and report the outcome (white or black). We reward only those who report white and leave them the possibility to cheat without being discovered. In our 2x2 experimental design, we manipulated subjects' report sheet to i) suggest (or not) that cheating is an option; ii) suggest that their peers were honest (or dishonest). We find that increasing awareness of cheating as an option significantly increases the probability that women cheat; whereas men – who are already aware that cheating is an option - are not affected. When we suggest that peers have cheated, men cheat significantly more, whereas women do not.

Keywords: cheating, norms, conformity, awareness, gender differences.

JEL codes: D63, K42, D81

1. Introduction

Every day the news reports about corporate frauds, tax evasion, theft and other kinds of unethical behavior (see Mazar and Ariely, 2006). This phenomenon has become so widespread that books on this topic immediately become bestsellers[1]. Even in academia we have scandals with famous and influential professors[2] being accused of plagiarism, data manipulation and scientific misconduct.

Research on unethical behavior has attracted the attention of scholars across different disciplines – psychology (e.g., Hegarty and Sims, 1978; Beck and Ajzen, 1991; Depaulo et al., 1996; Monin and Jordan, 2009), philosophy (Green, 2004), economics (e.g. Erat and Gneezy 2011; Gneezy, 2005; Pruckner and Sausgruber, 2011; Sutter, 2009) and neuroscience (e.g., Cazzaniga, 1995; Yang et al., 2005; Harvey; 2010). All of these researchers have tried to identify the conditions under which individuals behave dishonestly.

In this paper we want to contribute to this debate and test if and how the exposure to bad or good examples influences the choice between honesty and dishonesty. In fact, the literature in social psychology (Gino et al. 2009a; Gino et al. 2009b) has shown that cheating is influenced by both the awareness of the act and what peers do in the same situations. In other words, unethical actions of peers can boost individual cheating both because they convey the message that cheating is an option but also because this option is the *norm* to follow (see Cialdini and Trost, 1998).

In line with this reasoning, Greene and Paxton (2009) specify (and wonderfully named) two explanations of honest behavior: 'Will' and 'Grace'. According to the 'Grace' hypothesis some people do not cheat simply because they do not actively consider the option in the given setting (no temptation to cheat); whereas, according to the 'Will' hypothesis, people do consider

[1] Few examples: "The Cheating Culture: Why More Americans Are Doing Wrong to Get Ahead" (2004) by David Callahan, "The Honest Truth About Dishonesty: How We Lie to Everyone-Especially Ourselves" (2012) by Dan Ariely.

[2] Just to cite some examples: Prof. Mark Hauser (Harvard University) and Prof. Diederik Stapel (Tilburg University).

cheating as an option but they deliberatively decide to overcome the temptation to cheat and stay honest[3]. It follows that subjects not isolated and that observe their peers being dishonest: 1) can become aware that cheating is an option which can be actively chosen (losing their Grace) and, 2) can infer that cheating is the *norm,* and might choose (Will) to follow this.

In this paper we want to separate Will from Grace, or in other words, the effect of *cheating conformity* from the effect of *cheating awareness*[4]. To the best of our knowledge, this distinction has not been investigated in the previous literature and these two effects have never been disentangled. Separating the conformity from the awareness effect improves our understanding of the decision process in ethical dilemmas and this can have important policy implications. Should we spread good examples and keep the bad ones secret? Is it a good idea to reveal high level of dishonesty in a community? If people learn that the norm is to be honest, can we expect that people conform and cheat less?

Several studies have shown that women are less likely to engage in unethical behavior (see for instance Arlow, 1991; Dreber and Johannesson, 2008; Erat and Gneezy 2011; Kidwell et al., 1987). One possible explanation for this difference is a diverse socialization: men are more often taught to embrace competition and therefore more likely to break rules to achieve success (Vermeir and Van Kenhole, 2008). Another explanation is that women are less prone to unethical behavior because it is more difficult for them to deal with the guilt felt subsequent to unethical behavior (Ritter, 2006; Vermier and Van Kenhove, 2008). Finally, women may avoid unethical behavior because they think their unethical action will have negative consequences not only for their self-image but also for the group-image. In other words, women feel greater responsibility toward others and are more prone to the ethics of care (Gilligan, 1982). For all of the above reasons we expect that men and women will react differently to our manipulations and that gender will play an important role for the size of the Will and Grace effects.

[3] Greene and Paxton (2009) find that dishonesty is related to neural activety to try to resist the tempatation of cheating, a finding favoring the grace effect.

[4] In the following we use the term cheating awareness to imply that a subject is *actively* considering the cheating option and therefore must resist the temptation to cheat.

2. Method

The experiment was conducted at the Laboratory for Experimental Economics (LEE), University of Copenhagen in the Fall 2011. A total of 209 first-year undergraduate Economics students participated. These students have been divided into "classes" since the beginning of the academic year. Each class has a specific schedule and is therefore forced to spend a lot time together[5]. We ask each class to come to the lab at a specific time slot to be sure that subjects in each session know each other.

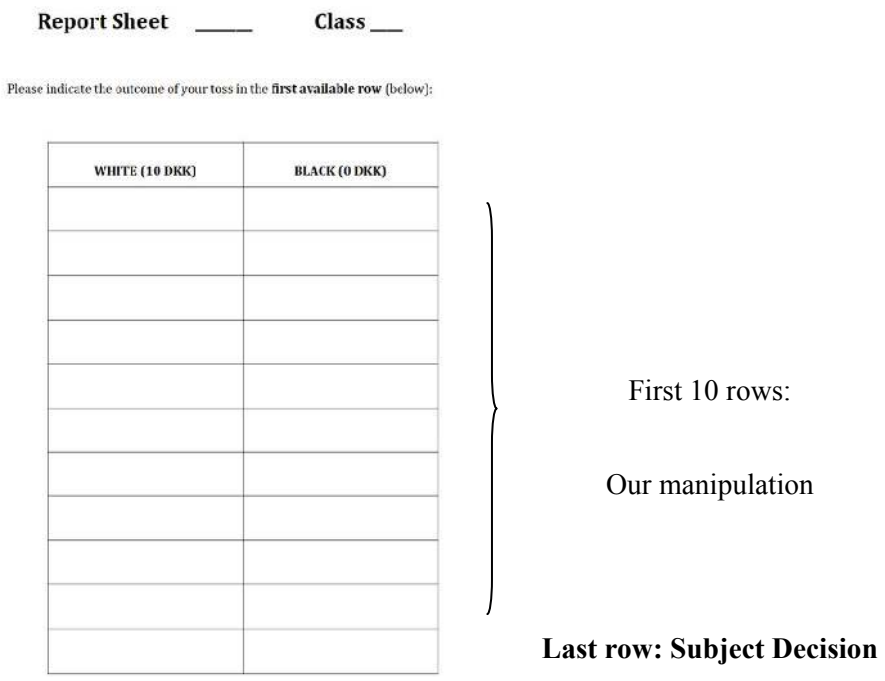
At the beginning of each session we randomly determined the order in which students participated. Then, we called students one-by-one and explained the rules of the game: a) each subject has to enter a separate room and in complete privacy flip a coin with two sides (black and white); b) we hand them a report sheet, on which they have to tick off the outcome; c) they receive 10 DKK (approx. 2 USD) if they report "white", but receive nothing (O DKK) otherwise. The task is taken from Bucciol and Piovesan (2011). Several other papers have used similar tasks (die roll) to explore the conditions under which individuals lie to gain higher earnings (Fischbacher and Heusi, 2008; Gino and Ariely, 2012; Shalvi et al., 2011).

The report sheet is the key element of our experimental design. As shown in Figure 1, subjects have to indicate "white" or "black" in the last row of the report sheet. However, there are 10 rows of X's above this last row and this is where we did our 2x2 manipulations:

1. We suggest (or not) that cheating is an option: in Treatment 10W (ten whites), the report sheet shows 10 X's under the column "white". In Treatment 5W (five white) the report sheet lists 5 X's under the column "white" and 5 X's under the column "black" in mixed order.

[5] Not only are they supposed to study and prepare their homework together but often they share the same social activities.

FIGURE 1 – Report sheet



2. <u>We suggest (or not) that the other X's were reported by their class mates</u>: in the Handwritten Treatment (both for 5W and 10W) X's in the report sheet were made by hand (by us) whereas the X's in the Preprinted Treatment were printed. Note that the first half of the subjects called up for the experiment were given the "Preprinted" report sheets while the second half were give the "Handwritten" report sheets. By doing this, it is likely that subjects in the Handwritten Treatments would think that the X's were the coin flips reported by the classmates that were called immediately before them (the first half of the subjects). On the contrary, subjects receiving the "Preprinted" report sheet could *not* think that the preprinted X's were results reported by their classmates.

This subtle manipulation allows us to disentangle Will from Grace. *First*, we measure the Grace effect by comparing subjects' behavior in the 5W and 10W Preprinted Treatments. In the 5W Preprinted treatment subjects may not be aware of cheating is an option[6]; in contrast, the

[6] Please note that all subjects were aware that cheating was "technically" possible, since they were entering a room alone, went behind a wall and were tossing the coin in complete privacy. However, we

10W Preprinted treatment subtly suggest that cheating is an option. If some subjects react to this manipulation it cannot be because their beliefs about their peers' behavior have changed. The reason must be that they now consider cheating as an option either because they now realize that cheating is possible or because they now feel that it is relevant or appropriate to consider this alternative. *Second*, we measure the Will effect as the difference between the Handwritten and Preprinted Treatments for respectively 5W and 10W. This captures the effect of learning that one's peers cheat *while* controlling for the Grace effect. In the Preprinted treatments, the X's could only signal the behavior of some distant others, in contrast the X's in the Handwritten treatments signal the behavior of classmates participating in the same session. We therefore interpret any behavioral difference as a result of learning your in-group's behavior, compared to some distant others. The Appendix reports additional details about the instructions and procedures we used.

Before proceeding, we want to stress some important features of our design. First, even though we do not observe if the individual subject cheated we can estimate the proportion of subjects that cheat in each treatment since we know that the coin is fair and that the expected probability of having white is 0.5. Second, we did not say that these X's were previous decisions or that this report sheet has been used by others before. Instead, we ask subjects to ignore this part of the report sheet when giving them their instructions.

Table 1 reports some descriptive statistics of our sample. As mentioned in the previous section, we divide our sample by gender since it has been shown that men and women take different approaches to ethical reasoning. Moreover, we report statistics of subjects' score in the Cognitive Reflection Test (thereafter CRT, Frederick 2005). Subjects completed this test in another experiment as part of their teaching. The table reports that the variables are balanced across treatments.

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believe that 10W manipulation moves cheating in to our subjects' active choice set or in other words cheating become something they are considering.

Table 1: Gender composition and CRT across treatments

	5W Handwritten	5W Preprinted	10W Handwritten	10W Preprinted	Test 1: *p*-value
% of Female	35.85	32.08	25.48	30.77	0.72
CRT (average) for:					
Male	1.41	1.42	1.32	1.42	0.63
Female	1.32	0.88	1.77	1.19	0.49
Test 2: *p*-value	0.69	0.28	0.29	0.54	

Note: Test 1 is a Pearson's Chi square test comparing the distribution across treatments. Test 2 is the same test, but making binary comparison between males and females.

3. Results

The results of our experiment are reported in Table 2. In the first four columns we have the percentage of subjects reporting white in our four treatments. A percentage of whites above 50 % indicates that some subjects have cheated. Indeed our task produced pronounced levels of cheating for men, while we have evidence that women cheated only in the 10W Preprinted treatment.

In the fifth column we compute the Grace effect. Our estimates of the Grace are respectively 28.3% (= 81.2 - 52.9) for women, and -2.7% (= 66.7 - 69.4) for men. Thus the Grace effect is large and significant (as indicated in the table) for women but close to zero and insignificant for men. This result suggests that males and females react differently when they learn that cheating is an option. It seems that men already have cheating in their active choice set in the Preprinted 5W, and therefore our subtly reminder did not change their behavior.

What about the Will mechanism? In the sixth and seventh columns we compute the Will effect of 5W and 10W respectively. For men, the effect of learning that their peers are honest (5W) is small and insignificant: 7.1% (= 76.5 - 69.4) but the effect of learning that they are dishonest (10W) is large and significant: 25.4% (= 92.1 - 66.7). Thus, controlling for the Grace effect, we find that informing men that their peers are honest does not affect cheating, while

giving information that peers cheat does increase dishonesty. This suggests that the Will mechanism is important for men, and that men's' prior belief is that peers are honest.

Table 2: Percent Reporting White and the estimated Will and Grace effects

	5W Handwritten (a)	5W Preprinted (b)	10W Handwritten (c)	10W Preprinted (d)	Grace Effect (d-b)	Will Effect 5w (a-b)	Will Effect 10w (c-d)
n=209							
Male	**76,5% *****	**69,4% *****	**92,1% *****	**66,7% ****	-2.7%	7,1%	25.4%***
n=144	*n=34*	*n=36*	*n=38*	*n=36*			
Female	**47,0%**	**52,9%**	**61,5%**	**81,2% *****	28.3%**	-5.9%	-19.7%
n=65	*n=19*	*n=17*	*n=13*	*n=16*			
Tests:	*Binominal test of difference from 50%:*				*Fisher exact test:*		
	**** p<0.01, ** p<0.05, * p<0.1*				**** p<0.01, ** p<0.05, * p<0.1*		

All tests are one-sided: we test the hypothesis that 'percentage reported white'>50%, Grace effect>0, and that the Will effect>0 against the null-hypothesis.

The reaction pattern for women is different. Their Will effects are respectively -5.9% (= 47.0 - 52.9) when learning that peers are honest, and -19.7% (= 61.5 - 81.2) when learning that peers cheat. Both of these effects are insignificant and clearly not positive. When females learn that peers are honest (controlling for the Grace mechanism) the effect is close to zero and insignificant. The effect of giving information that peers cheat is also insignificant (but if anything it is negative). This suggests that for women neither type of peer behavior is important for how attractive females find cheating or that their reaction to peers' cheating is to cheat less. In any case their reaction is very different from that of men.

Econometric test of the Will and Grace mechanisms

In the rest of the paper we estimate the gender difference controlling for systematic differences in CRT between men and women. Table 3 reports our regressions. The first (probit) regression (Model 1) essentially reproduces the results presented above. The constant parameter reflects the cheating level of men in the two 5W treatments. The significant positive parameter indicates that men in these treatments cheat (i.e. report significantly more than 50% white). The next parameter reflects the additional cheating probability in these treatments for women. This parameter indicates that there is a significant difference between the cheating levels of men and women. We see that the parameter is of the same magnitude as the constant but with the opposite sign. The sum of these two parameters is zero indicating that women in these treatments do not cheat.

Moving to the next set of parameters in model 1, *Grace* estimates the strength of the Grace effect for men (the difference between the 5W-Preprinted and the 10W-Preprinted treatments). The second variable, *Grace x Female*, measures the additional Grace effect for females. We see that the Grace effect for men is insignificant and close to zero, while the additional Grace effect for women is significant at the 10% level.

Finally the variable, *Will* reflects the will effect for men (the difference between the 10W-Preprinted and the 10W-Handwritten). The second variable, *Will x Female*, is the additional Will effect for women. Here we have a significant positive Will effect for men. Again the parameter reflecting the *added* effect if the subject is a woman is significant and negative indicating a significant gender difference. The added effect for women more than cancels out the positive Will effect for men reflecting that if there is a Will effect for women it is likely to be negative.

Table 3 – Probit regression explaining the likehood of reporting white

Dependent variable: White (=1) or Black (=0)	**1**	**2**
Constant	0.608***	0.209
	(0.168)	(0.199)
Female	-0.608***	-0.545**
	(0.225)	(0.261)
Grace	-0.178	-0.200
	(0.306)	(0.321)
Grace x Female	1.065*	1.094
	(0.631)	(0.674)
Will	0.981***	1.090***
	(0.368)	(0.398)
Will x Female	-1.575**	-1.875**
	(0.710)	(0.848)
Intelligence		0.304***
		(0.0585)
Observations	209	209
Pseudo r2	0.0768	0.116
LR test	100.8	158.0
Prob<chi2	0	0

NOTE:
Clustering on classes,
Robust standard errors in parentheses
**** p<0.01, ** p<0.05, * p<0.1*

In the second regression (Model 2) we add the CRT score to check if systematic differences in CRT between men and women can explain the gender difference we found in the first regression. We see that CRT does affect the probability of cheating positively – thus the more intelligent (and reflexive) a subject is, the more likely he/she is to cheat. Looking at the other parameters and comparing them to the first regression we see that the CRT variable

captures the explanatory power of the constant in the first regression. However, none of the other parameters are affected substantially. Specifically all the gender difference variables remain virtually unaffected. Thus the gender differences we see in our experiment cannot be explained by systematic differences in CRT.

4. Discussion

We design and run an experiment that disentangles the effect of *cheating conformity* (Will) from the effect of increased *cheating awareness* (Grace) when people learn that their peers cheat. About half of the men in the baseline treatment cheat suggesting that men are aware of -and actively consider- this option without being subtly reminded about it. In contrast, women are not. But when women are subtly being reminded, they cheat as much as men. When men receive information that their peers cheat they exhibit a strong Will effect and conform to the cheating norm (almost all men cheat in this case). Women, on the other hand, do not exhibit a Will effect - in fact if they have any reaction, it is less cheating.

Our findings suggest that both the Will and the Grace mechanisms are important but that there is a significant gender difference: we find that Grace matters for women and Will matters for men. One implication of this is that it may be important to take gender into account when designing policies aimed at regulating dishonest behavior. Different policies may be needed for tackling problems of cheating in groups, organizations, or societies dominated by women compared to male dominated ones.

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Appendix: Oral instructions and additional information

Hello! My name is _____. Today you have the chance to win 10 DKK.
Here is the sheet (*show them the report sheet*) that you will use during the game. In this game, you are going to toss this coin (*show the coin*) to find out whether you win the prize. You will have to go this other room and toss the coin in private.
On this sheet, you have to indicate the outcome, white or black, in the first available row. If you indicate white you will receive 10 DKK, if you indicate black you will receive 0 DKK. Please focus on the first available row and do not pay attention of the other columns.
Everything is clear? Please now go to the room and toss the coin.

Subjects enter the separate room with the coin and their report sheet (see Figure A1)

Figure A1:

a) entering the room b) behind the wall c) tossing the coin

When they are done subjects exit the room and return us the coin and the (filled report sheet.

The experimenter collects the material, check if they have indicated white or black and in case they have reported white, the experimenter pays immediately 10 DKK. When subject leave the table, the experimenter adds to the report sheet the computer ID number. Only when the experimenter is ready to welcome another participant, the helper calls the following number.