Journal of Economic Psychology 34 (2013) 1–7

Contents lists available at SciVerse ScienceDirect

Journal of Economic Psychology

journal homepage: www.elsevier.com/locate/joep

Lying and team incentives

Julian Conrads [1], Bernd Irlenbusch *, Rainer Michael Rilke [1], Gari Walkowitz [1]

University of Cologne, Department of Corporate Development and Business Ethics, Albertus-Magnus-Platz, 50939 Cologne, Germany

ARTICLE INFO

Article history:
Received 20 March 2012
Received in revised form 17 October 2012
Accepted 28 October 2012
Available online 20 November 2012

JEL classification:
C91
C92
M52

PsycINFO classification:
2910
3020
3120
3660

Keywords:
Compensation schemes
Lying
Team
Individual differences
Experiment

ABSTRACT

We investigate the influence of two popular compensation schemes on subjects' inclination to lie by adapting an experimental setup of Fischbacher and Heusi (2008). Lying turns out to be more pronounced under team incentives than under individual piece-rates, which highlights a fairly neglected feature of compensation schemes. Moreover, when disentangling different motives of the more pronounced unethical conduct under team incentives, we find that subjects tend to lie more under team incentives because they can diffuse their responsibility, i.e., their deceptive acts cannot unambiguously be attributed to them individually. Our findings are robust even when controlling for individual difference variables. In both compensation schemes subjects who are younger, male, high on Extraversion, and high on Neuroticism tend to lie more.

1. Introduction

Deception and lying is common in all kinds of social interaction (Bok, 1999; Feldman, 2009) and recently, this topic also raised considerable interest in the experimental economics literature (Croson, 2005). In a simple and innovative die-rolling game Fischbacher and Heusi (2008), henceforth F&H, for example, find that people systematically over-report the true value of a private die-roll when the reported number determines their individual pay. Interestingly, people seem not to exaggerate their claims to the full extent what the authors call 'incomplete lying'. This result is in line with the idea of 'self-concept maintenance' investigated by Mazar, Amir, and Ariely (2008). They argue that lying to a small extent does not necessarily require changing one's self-image as an honest person. Gneezy (2005) investigates the role of consequences on the inclination of lying and finds that people deceive more often the higher the own profit from lying and the lower the loss for the deceived person (for an extension see Sutter, 2009). Schweitzer and Hsee (2002) point out that people tend to justify lying more easily when other people benefit from dishonest behavior. Following this argument, Wiltermuth (2011) shows that

* Corresponding author. Tel.: +49 (0) 221 470 1848; fax: +49 (0) 221 470 1849.
E-mail address: bernd.irlenbusch@uni-koeln.de (B. Irlenbusch).
[1] Tel.: +49 (0) 221 470 1848; fax: +49 (0) 221 470 1849.

0167-4870/$ - see front matter © 2012 Elsevier B.V. All rights reserved.
http://dx.doi.org/10.1016/j.joep.2012.10.011

people are more likely to cheat when the benefits of doing so are split with another person even if this other person is totally unknown to the cheater. In a similar vain, Mazar and Aggarwal (2011) demonstrate that individuals who are primed in a collectivist mindset more frequently behave unethically, i.e., offering bribes, as they feel less responsible for their own actions. Thus, deceit also seems to be psychologically easier because of diffusion of responsibility, i.e., the likelihood to deceive increases when individual causal agency for unethical behavior is obscured (Bandura, 1991; Bandura, Barbaranelli, Caprara, & Pastorelli, 1996).

In this paper we take an organizational perspective and look at the influence of different compensation schemes on deceptive behavior and lying. Such a perspective is also taken by Cadsby, Song, and Tapon (2010) who employ an anagram task and experimentally analyze the differences in cheating under piece-rate, target-based and tournament incentive schemes. They find that lying in terms of overclaimed words is most pronounced under the target-based system as targets seem to encourage people to lie particularly if one is close to the target. By following up on their work in the current study we compare lying behavior under the two probably most commonly observed incentive schemes in organizations, i.e., individual piece-rate compensation and team compensation schemes (Gibbons, 1998; Lazear & Gibbs, 2009). Ledford, Lawler, and Mohrman (1995) for example show that more than 70% of major US firms use some form of team-based rewards. Using data of a representative survey of German companies Berger, Herbertz, and Sliwka (2010) find that performance-related pay such as piece-rate compensation and team-based variable compensation are widespread. This suggests that the investigation of potential deceptive behavior under these two compensation schemes is important.

We use a variant of the die-rolling game of F&H, which in their version resembles an individual piece-rate compensation scheme. We are able to confirm F&H's findings, i.e., people systematically lie but quite often they are reluctant to do so to the full extent. Our team compensation scheme is modeled as a revenue sharing mechanism (for an earlier experimental study on revenue sharing see Nalbantian & Schotter, 1997). The production outputs of two agents are pooled and each agent receives one half of a compensation unit for each unit of the joint production output. Comparing the marginal incentives to lie under the two schemes reveals that under the team compensation scheme the marginal gain from lying, i.e., the return from exaggerating the own production output by one unit, is only half of the marginal gain from lying under the individual piece-rate scheme. Assuming increasing marginal costs of lying this could lead one to assume that lying should be more pronounced under the individual piece-rate scheme than under the team incentive scheme. On the other hand, in the team incentive scheme lying is not exclusively beneficial for oneself – as it is the case under the individual compensation scheme – but it also benefits the other agent in the team. Thus, an agent under a team incentive scheme might be more able to justify such a *white lie* to herself compared to a lie under the individual scheme – after all she is doing something 'good' for the other team member (see Wiltermuth, 2011). Moreover, lying under the team incentive scheme might be psychologically easier because this compensation scheme promotes *diffusion of one's own responsibility*, i.e., tracing lies back to individual team members is more difficult under team compensation compared to individual compensation.

Extending upon our two main experimental treatments we additionally run a control treatment in order to explore potential motives of lying behavior under the two compensation schemes. Disentangling different motives behind deceptive actions would shed some light on the effectiveness of intra-organizational arrangements to reduce lying behavior when distinct compensation incentives are present.

The discussed lines of reasoning point into different directions whether lying is more severe under an individual than a team incentive scheme. Our experimental results suggest that lying is in fact more pronounced under the team incentives than under the individual piece-rate scheme. We also find *diffusion of responsibility* to be a stronger driving force for lying in teams than the *white lie* justification.

2. Experiment

Our experiment employed a simple one shot decision task closely resembling the baseline treatment of F&H. We ran two waves of experimental sessions. The first wave included our two main experimental treatments. Within each session we randomly assigned subjects either to the piece-rate or the team based compensation scheme. The second wave consisted of a control treatment designed to investigate potential motives of lying behavior under each of the above compensation schemes.[2] Due to the short nature of the task we followed the procedure of F&H in conducting the experiment after several different other experiments. Experimental sessions were run in the laboratories of Bonn University and the University of Cologne between August 2010 and August 2012 and involved 554 subjects (with a mean age of 24.55 and 51% being female).

At the end of each experiment we asked subjects to fill in a questionnaire for a statistical survey for which they would be rewarded independently of the preceding experiment. The questionnaire contained questions about gender, age and personality measured by a 10-item Big-Five inventory covering the traits Openness, Conscientiousness, Extraversion, Agreeableness and Neuroticism (Rammstedt & John, 2007).[3] A separate instruction sheet explained that their pay would be based on 'points'

[2] We thank one of the anonymous referees for suggesting such treatment.

[3] We decided to include a rather abstract but in HR-departments frequently used personality construct measure which was apparently unrelated to the preceding die rolling task. In order to not induce an experimenter demand effect we refrained from explicitly asking about underlying motives regarding subjects' behavior in the die rolling task.

p_i that were randomly determined, i.e., by rolling a standard 6-sided die. By introducing points that were interpreted as 'random production output' we slightly adapted the setting of F&H. The reason was that we were particularly interested in investigating lying under different compensation schemes.

In our two main experimental treatments it was explained to the subjects that the points p_i of subject i resulted from the number d_i shown on the die, i.e., $p_i = d_i$, if $d_i \in \{1,\ldots,5\}$. If a 6 was diced ($d_i = 6$), no points were earned ($p_i = 0$). Subjects were randomly assigned to the two treatments that differed in the way points, i.e., random production outputs, were translated into payoffs π_i. The first main experimental treatment *Individual* closely resembled the baseline treatment in F&H, i.e., subjects were instructed that the payoff of agent i would be defined as $\pi_i = p_i$. In the second main experimental treatment *Team* a subject i was randomly and anonymously matched with a different subject j to form a team. Subjects were told that team-member i's individual payoff would be defined according to the following sharing rule: $\pi_i = 1/2 \cdot (p_i + p_j)$. Subjects also learned that team-member j's payoff would be exactly the same, i.e., $\pi_j = \pi_i$.

In our control treatment, *Team-Mixed*, we varied the subjects' influence on the team member's payoff. In this treatment two types existed, a player i with individual compensation and a player j with team compensation. Subject i was randomly and anonymously matched with a different subject j to form a team. Subject i was informed that her own payoff was determined according to the following rule: $\pi_i = 1/2 \cdot (p_i + p_c)$ with p_c representing the output determined by a random die roll executed by the computer. It is important to note that the setting in *Team* differed from the individual compensation setting in *Team-Mixed*. In the latter subject i's payoff did not depend on subject j's reported outcome. The payoff of player j with team compensation in *Team-Mixed* was determined according to the following rule: $\pi_j = 1/2 \cdot (p_i + p_j)$. This payoff rule is similar to the one applied in our treatment *Team*, however, subject j in *Team-Mixed* did not produce a positive externality for subject i. Hence, the payoff of player i with individual compensation was determined by i's own die roll and a random draw. The payoff of player j with team compensation was determined by j's own die roll and the roll of the player with individual compensation. Both team members were also informed about the compensation rule of the respective other team member. We designed the *Team-Mixed* treatment such that the marginal gains from lying for both player types were the same as the marginal gains from lying in the *Team* treatment.

Subjects were asked to privately role the die in their cubicles and to jot down the appearing number on a sheet of paper which was handed out to the subjects and collected afterwards.[4] This procedure ensured that the experimenter was not able to observe the truly diced numbers whatsoever and this was known to the subjects. Hence, subjects could easily lie about their rolled number and consequently could secretly manipulate their payoff that was solely dependent on their reported production output. After subjects had reported their production output they filled in the personality questionnaire which was administered after the die roll. At the end of the sessions each subject k was privately paid π_k which was calculated based on the reported production output and the respective payoff rule. Each payoff unit was worth 1 €. It should be emphasized that we designed the incentive schemes such that they were comparable with respect to two important characteristics. Firstly, the expected payoff of a subject was 2.5 € under all experimental treatments if one assumes that all subjects honestly reported their true numbers. Secondly, in our two main treatments *Individual* and *Team*, if all subjects behaved selfishly and maximally exaggerated their numbers, they earned 5 €.

3. Hypotheses

We are primarily interested in whether agents are inclined to lie more under the individual piece rate or the team incentive scheme. As mentioned earlier two competing hypotheses are at hand. The first one relates to the fact that the marginal gain from lying is higher under the individual piece-rate scheme than under the team incentives. If we assume increasing costs of lying we can derive our first hypothesis.

Hypothesis 1. More lying is observed under the individual piece-rate incentive scheme than under the team incentive scheme.

On the other hand, under the team incentive scheme a liar has the excuse that lying comes with doing something good for the other member of the team, i.e., a lie is partly a *white lie*. Such an excuse is not available under the individual piece-rate incentive scheme. Furthermore, under the team incentive scheme subjects' individual deceptive acts are not unambiguously attributable to them individually. Due to this possible *diffusion of responsibility* of a seemingly overreported payoff subjects might be more inclined to overreport. These considerations result in our second hypothesis.

Hypothesis 2. More lying is observed under the team incentive scheme than under the individual piece-rate incentive scheme.

To see which of the two hypotheses can be supported we have to turn to our data.

[4] To be more precise we asked them to jot down the very first number that appeared on the die. In fact, we followed the procedure of F&H and explicitly allowed the subjects to roll the die several times. As F&H we argued that by doing so subjects could assure themselves of the die being fair.

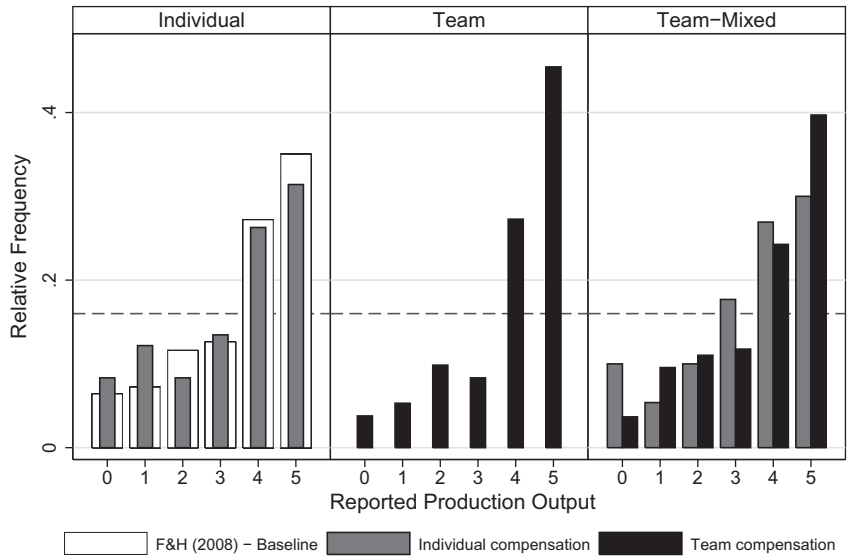

Fig. 1. Relative frequency of reported production outputs in the three different treatments. The dashed line represents the expected true value of .16.

Table 1
Descriptive statistics.

Treatment	n	Type	$\bar{p}_i$	Reported production output p_i (rel. frequencies)					
				0	1	2	3	4	5
Team	132		3.86	$.04^{---}$	$.05^{---}$	$.10^{--}$	$.08^{---}$	$.27^{+++}$	$.45^{+++}$
Individual	156		3.31^{***}	$.08^{---}$	$.12^{-}$	$.08^{---}$	.13	$.26^{+++}$	$.31^{+++}$
Team-Mixed	130	(*I*)	3.36^{***}	$.10^{--}$	$.05^{---}$	$.10^{--}$	.18	$.27^{+++}$	$.30^{+++}$
	136	(*T*)	3.63	$.04^{---}$	$.10^{--}$	$.11^{--}$	$.12^{--}$	$.24^{++}$	$.40^{+++}$
F&H	389		3.52	$.06^{---}$	$.07^{---}$	$.12^{---}$	$.13^{--}$	$.27^{+++}$	$.35^{+++}$

$\bar{p}_i$ is the average reported production output. (I) represents the player with individual compensation in *Team-Mixed*, (T) stands for the player with team compensation in *Team-Mixed*. Stars show the significance of a two-sided Mann–Whitney-U test (* = 10%-level, ** = 5%-level, *** = 1%-level) comparing the distribution of reported production outputs with the treatment *Team* with the hypothesis that reported production outputs are equally distributed. Plus and minus signs display the significance of a one-sided binomial test indicating that the observed relative frequency is smaller (larger) than $\frac{1}{6}$ ($^{-}$ ($^{+}$) = 10%-level, $^{--}$($^{++}$) = 5%-level, $^{---}$ ($^{+++}$) = 1%-level).

4. Results

Our main results are summarized in Fig. 1 and in Table 1. In the figure we see the distribution of reported production outputs in our treatments. Rolling fair dices should generate a uniform distribution of production outputs (dashed line), i.e., every possible production output should come up with the same probability of $\frac{1}{6}$ and an average actual production output of 2.5.

The left side of Fig. 1 shows the results of our treatment *Individual*. For comparative reasons the white bars indicate the results of the baseline treatment of F&H. Visual inspection already reveals that the results of our treatment *Individual* are very similar to their results. Indeed, a Mann–Whitney-U-test (MWU-test) comparing the distribution of reported production outputs between both treatments reveals that there is no statistically significant difference (p = .224, two-sided). A comparison of the treatment *Individual* with the treatment *Team* – shown in the second panel of Fig. 1–provides insights regarding our research question.

Observation 1. Reported production outputs are significantly higher in treatment *Team* than in treatment *Individual*.

While subjects report on average 3.31 in treatment *Individual*, they report on average 3.86 in the treatment *Team*. Subjects report significantly higher production outputs in the treatment *Team* than in treatment *Individual* (MWU-test: p = .003, two-sided).[5] The observation that subjects are more inclined to lie under the team incentive scheme is also supported, when comparing the frequencies of the maximal possible exaggeration, i.e., a reported production output of 5.

[5] F&H report an average of 3.52 in their baseline treatment. Also the distributions of numbers in F&H's baseline treatment and in *Team* are significantly different (MWU-test: p = .022, two-sided).

Table 2
Explaining reported production output p_i.

	(1)	(2)	(3)
Individual	−0.550***	−0.502***	−0.518***
	(0.18)	(0.18)	(0.18)
Team-Mixed (*I*)	−0.502***	−0.351*	−0.369*
	(0.19)	(0.20)	(0.20)
Team-Mixed (*T*)	−0.239	−0.165	−0.179
	(0.18)	(0.18)	(0.18)
Female		−0.392***	−0.475***
		(0.14)	(0.16)
Age		−0.026**	−0.016
		(0.01)	(0.01)
Openness			0.062
			(0.07)
Conscientiousness			−0.115
			(0.09)
Extraversion			0.183**
			(0.07)
Neuroticism			0.177**
			(0.08)
Constant	3.864***	4.654***	3.646***
	(0.12)	(0.35)	(0.59)
Observations	554	546	544
R-squared	0.020	0.039	0.059

OLS-regression coefficients (robust standard errors in parentheses), reference group: *Team* treatment; we did not include the personality factor Agreeableness in the regressions since its scale reliability was too low. The number of observations differs due to missing values. *Individual*, *Team-Mixed* (*I*) and *Team-Mixed* (*T*) represent dummy variables for the respective treatments.
* $p < .1$.
** $p < .05$.
*** $p < .001$.

Observation 2. A production output of 5 is reported more often in treatment *Team* than in Treatment *Individual*.

This observation is backed by a χ^2-test ($p = .014$, two-sided). In line with the findings of F&H we also observe that lying is 'incomplete' in our two treatments.

Observation 3. Incomplete lying is observed in both treatments, *Team* and *Individual*.

Support for this observation is shown in Table 1. The results indicate that in both treatments the frequencies of reported production of 4 significantly exceed the frequency that one would expect from honest subjects. While in both treatments 0, 1 and 2 are reported significantly less often, only the frequency of the production output of 3 under individual incentives cannot be distinguished from the relative frequency of $\frac{1}{6}$.

Observation 4. When investigating why lying is more pronounced in treatment *Team* than in treatment *Individual* the argument of *diffusion of responsibility* is likely to have a stronger force than the "*white lie*" justification.

To generate deeper insights into the underlying motives for the more pronounced lying in *Team* than in *Individual* we run the control treatment *Team-Mixed*. One explanation for the increased lying in *Team* might be the justification to do something good for the other team member. To investigate this *white lie* justification we compare the players with team-compensation in *Team-Mixed* with the players in *Team*. Note that the reported production output of the player with team-compensation in *Team-Mixed* has no impact on the other team member. Otherwise the two incentive situations are the same.

The average reported production output of players with team-compensation in *Team-Mixed* is statistically indistinguishable from players in *Team* (3.63 vs. 3.86, MWU-test: $p = .186$, two-sided). Since the output of the former compensation scheme has no effect on the earnings of the other team member one would expect that players in the treatment *Team* report higher outputs (compare our Hypothesis 2). Thus, it is not very likely that the pronounced lying in the treatment *Team* in comparison to treatment *Individual* is mainly driven by the *white lie* justification.[6]

[6] Interestingly, our finding is different from the results reported by Wiltermuth (2011) who finds in a real-effort anagram task that people are more likely to cheat when another person also benefits from it. In line with our study Danilov, Biemann, Kring, and Sliwka (in press) investigate advice giving in an experiment with financial professionals. In general, they find no difference in deceptive self-serving advice giving when professionals operate under team vs. individual incentives. Only when professionals in a team have established social ties they tend to convey more self-serving advice which harms clients.

Another explanation for the differences in lying in *Individual* and *Team* could be *diffusion of responsibility*. To test this we compare behavior of players with individual compensation in *Team-Mixed* and behavior of players in *Team*. In the latter treatment the individual responsibility for possible deceptive actions might be obscured.

The players with individual compensation in *Team-Mixed* report on average a significantly smaller number than subjects in *Team* (3.36 vs. 3.86, MWU-test: $p = .004$, two-sided). In both settings reported outputs have a positive effect on the other team member's earnings. The difference is that in *Team* it is less obvious who of the two team members actually lied. This is not the case for the player with individual compensation in *Team-Mixed*. Thus, *diffusion of responsibility* seems to encourage players in *Team* to lie more than players in *Individual*.[7]

In the following we will check the robustness of our main findings controlling for individual difference variables collected after the die roll task. Relating gender, age and personality traits with (over) reported production outputs unveils some further interesting insights about potential determinants of lying behavior. In Table 2 we run a series of linear regression models to predict reported production outputs by stepwise including Treatments, Female, Age and Big-Five personality factors as explanatory variables. In all three regression models treatment *Team* serves as a reference group. Models (1)–(3) show that our main finding on the influence of team incentives on lying behavior (Observation 1) is quite robust. Furthermore, these models underline that players under both individual incentive schemes report smaller numbers than players under the two team incentives schemes. Thus, *diffusion of responsibility* seems to encourage players in *Team* to lie more than players in *Individual*. Our finding is in line with Mazar and Aggarwal (2011), who have shown that in an interdependent setting individuals feel less responsible for their own actions and this mediates the likelihood to transgress.

We also find that women and older subjects on average report significantly lower production outputs than men and younger subjects, respectively. These effects are also robust when controlling for the other variables (models (2) and (3)). Moreover, when pooling the data of all three treatments we see that women report a production output of zero significantly more often than men (χ^2-test: $p = .019$, two-sided). Recall that reporting a zero is a strong indicator of honesty since it results in a payoff of zero. There is an ongoing discussion on whether women tend to lie less than men when payoffs are at stake. Some studies support the notion of the less lying female gender (Dreber & Johannesson, 2008; Ellingsen, Johannesson, Lilja, & Zetterqvist, 2009; Pruckner & Sausgruber, 2008; Ross & Robertson, 2000). However, results from these studies do not always turn out to be significant and there are also studies which endorse that women lie more than men (Tyler & Feldman, 2004; Tyler, Feldman, & Reichert, 2006) or that there are no differences in lying behavior among genders (Belot & Schröder, 2012; Cadsby et al., 2010; DePaulo, Kashy, Kirkendol, Wyer, & Epstein, 1996; Lewis, 1993; Rowatt, Cunninghan, & Druen, 1998). Our study is in line with the first stream of literature.

Showing that age is negatively correlated with reported production outputs confirms previous findings on the relationship between age and lying behavior (i.e., see Ross & Robertson, 2000). Given the small variance in age in our student sample ($SD = 4.9$) we do not want to overemphasize this result but we consider it quite interesting that the standard result can already be confirmed with our data.

To check for the influence of the Big-Five personality factors we included four of the five factors into our model. Scale reliability is acceptable for Extraversion (Cronbach's $\alpha = .69$), Conscientiousness (.475), Neuroticism (.587), and Openness (.559). For Agreeableness scale reliability is unacceptably low (.107); therefore, we refrain from using this factor in our analysis.[8] Model (3) shows that when controlling for Treatment, Female, and Age, Extraversion and Neuroticism positively predict reported production outputs. Our finding supports previous results that extravert individuals – who are seen as gregarious, assertive, active, self-conscious, and excitement seeking and who like to participate in social interactions – are more inclined to tell lies than introvert persons (Kashy & DePaulo, 1996; Rowatt et al., 1998). There might also be lies born out of insecurity; people who have low self-consciousness and who are anxious may also choose to lie to appear more compliant and more motivated (c.f. Buss & Briggs, 1984; Kashy & DePaulo, 1996) – this inclination might be especially enhanced when those people can disguise their lies. We find support for this conjecture: Subjects scoring high in the Neuroticism domain report higher production outputs.

We conclude that team incentives really matter for honest conduct. Individual difference variables are also correlated with subjects' inclination to lie.

5. Concluding remarks

We investigate the influence of two widespread compensation schemes on agents' inclination to lie. By employing a simple experimental design introduced by Fischbacher and Heusi (2008) and controlling for individual difference variables

[7] The behavior of the player with individual compensation in *Team-Mixed* offers another valuable insight: One might argue that subjects have a minimum earnings goal that they want to reach by over-reporting production outputs and since the marginal gain from lying in *Team* is only half of that in *Individual* cheating might be higher in *Team*. To test this claim we compare the reported production outputs of players with individual compensation from *Team-Mixed* (marginal gain equal to $\frac{1}{2}$) with those from *Individual* (marginal gain equal to 1). Note that in both treatments players cannot diffuse their responsibility, i.e., they do not benefit from another player's production output. We find that players with individual compensation from *Team-Mixed* (3.36) do not report significantly higher outputs than those from *Individual* (3.31) (MWU-test: $p = .959$, two-sided). This is remarkable given the fact that players with individual compensation from *Team-Mixed* even have an excuse to over-report because another player would benefit from their lies. Thus, the motive of a minimum earnings goal seems not to play a decisive role.

[8] Rammstedt and John (2007) themselves point to a noticeable and substantial loss in reliability and validity in their 2-item Agreeableness scale as compared to larger Big-Five personality measures like, e.g., NEO-PI-R or BFI-44 (see Rammstedt & John, 2007, p. 210).

(Female, Age, and Big-Five personality traits) we find that lying is prevalent under both schemes but more pronounced under team incentives than individual piece-rates. This robust finding highlights a so far fairly neglected feature of compensation schemes. It shows that organizations are well advised to be vigilant regarding potentially harming side-effects of compensation schemes, especially when agents can diffuse and displace their responsibility for unethical conduct. Our study shows that besides benefiting others agents working under team incentives might be particularly prone to lying and deception because it is easier to hide individual wrongdoing under a team than an individual compensation scheme which makes it more difficult to pinpoint a liar in a team. Interestingly, this finding on the corruptive effect of a contingent responsibility shift supports an argument raised by Fischbacher and Heusi (2008). In their seminal paper they show that many subjects do not lie *to the full extend*, i.e., subjects report an outcome of 4 instead of 5 (see also Observation 3). The authors argue that subjects know that honesty might be a favorable trait and if a 4 is assessed differently than a 5 in respect to honesty, it might be reasonable not to lie to the full extent and to try to disguise the lie and appear honest. Similarly, players in our treatment *Team* and players with team compensation in *Team-Mixed* might also see lying to be unethical but they are able to diffuse their responsibility.

Acknowledgements

We are grateful to two anonymous referees and Ralph Bayer for valuable comments, and we thank Caroline Martens, Frauke Meyer, Katharina Peeters and Katrin Recktenwald for excellent research assistance. Financial support from the Deutsche Forschungsgemeinschaft through grant 'TP3 Design of Incentive Schemes within Firms: Bonus Systems and Performance Evaluations' (sub-project of the DFG-Forschergruppe 'Design and Behavior') and through the Leibniz-Award to Axel Ockenfels is gratefully acknowledged.

References

Bandura, Albert (1991). Social cognitive theory of moral thought and action. In W. M. Kurtnies & J. L. Gerwitz (Eds.). *Handbook of moral behavior and development* (Vol. 1, pp. 45–103). Hillsdale, NJ: Erlbaum.
Bandura, Albert, Barbaranelli, Claudio, Caprara, Gian Vittorio, & Pastorelli, Concetta (1996). Mechanisms of moral disengagement in the exercise of moral agency. *Journal of Personality and Social Psychology, 71*(2), 364–374.
Belot, Michéle & Schröder, Marina (2012). Sloppy work, lies and theft: A novel experimental design to study counterproductive behavior. *Working paper* (Vol. 18). Otto von Guericke University Magdeburg.
Berger, Johannes, Herbertz, Claus, & Sliwka, Dirk (2010). Incentives and cooperation in firms: Field evidence. *IZA discussion papers* (Vol. 5618).
Bok, Sissela (1999). *Lying – Moral choice in public and private life*. Vintage Books.
Buss, Arnold H., & Briggs, Stephen R. (1984). Drama and the self in social interaction. *Journal of Personality and Social Psychology, 47*(6), 1310–1324.
Cadsby, C. B., Song, Fei, & Tapon, Francis (2010). Are you paying your employees to cheat? An experimental investigation. *BE Journal of Economic Analysis & Policy, 10*(1), 1–30.
Croson, Rachel T. A. (2005). Deception in economics experiments. In Caroline Gerschlager (Ed.), *Deception in markets an economic analysis* (pp. 113–130). Palgrave Macmillan. chapter 5.
Danilov, Anastasia, Biemann, Torsten, Kring, Thorn, & Sliwka, Dirk (in press). The dark side of team incentives: Experimental evidence on advice quality from financial service professionals. *Journal of Economic Behavior and Organization*.
DePaulo, Bella M., Kashy, Deborah A., Kirkendol, Susan E., Wyer, Melissa M., & Epstein, Jennifer A. (1996). Lying in everyday life. *Journal of Personality and Social Psychology, 70*(5), 979–995.
Dreber, Anna, & Johannesson, Magnus (2008). Gender differences in deception. *Economics Letters, 99*(1), 197–199.
Ellingsen, Tore, Johannesson, Magnus, Lilja, Jannie, & Zetterqvist, Henrik (2009). Trust and truth. *The Economic Journal, 119*(534), 252–276.
Feldman, Robert (2009). *Liar: The truth about ling*. New York: Virgin Books, Grand Central Publishing.
Fischbacher, Urs & Heusi, Franziska (2008). Lies in disguise – An experimental study on cheating. *Working Paper* (Vol. 40). Thurgau Institute of Economics and Department of Economics at the University of Konstanz.
Gibbons, Robert (1998). Incentives in organizations. *Journal of Economic Perspectives, 12*(4), 115–132. <http://www.jstor.org/stable/10.2307/3069614>.
Gneezy, Uri (2005). Deception: The role of consequences. *American Economic Review, 95*(1), 384–394.
Kashy, Deborah A., & DePaulo, Bella M. (1996). Who lies? *Journal of Personality and Social Psychology, 70*(5), 1037–1051.
Lazear, Edward P., & Gibbs, Michael (2009). *Personnel economics in practice*. Wiley.
Ledford, Gerald E., Lawler, Edward E., & Mohrman, Susan A. (1995). Reward innovations in fortune 1000 companies. *Compensation & Benefits Review, 27*(4), 76–80.
Lewis, Michael (1993). The development of deception. In Michael Lewis & Carolyn Saarni (Eds.), *Lying and deception in everyday life* (pp. 90–105). New York: The Guilford Press.
Mazar, Nina, & Aggarwal, Pankaj (2011). Greasing the palm: Can collectivism promote bribery? *Psychological Science, 22*, 843–849.
Mazar, Nina, Amir, On, & Ariely, Dan (2008). The dishonesty of honest people: A theory of self-concept maintenance. *Journal of Marketing Research, 45*(6), 633–644.
Nalbantian, Haig R., & Schotter, Andrew (1997). Productivity under group incentives: An experimental study. *American Economic Review, 87*(3), 314–341.
Pruckner, Gerald J. & Sausgruber, Rupert (2008). Honesty on the streets – A natural field experiment on newspaper purchasing. *Working Paper* (Vol. 24). University of Innsbruck.
Rammstedt, Beatrice, & John, Oliver P. (2007). Measuring personality in one minute or less: A 10-item short version of the big five inventory in English and German. *Journal of Research in Personality, 41*(1), 203–212.
Ross, William T., & Robertson, Diana C. (2000). Lying: The impact of decision context. *Business Ethics Quarterly, 10*(2), 409–440.
Rowatt, Wade C., Cunninghan, Michael R., & Druen, Perri B. (1998). Deception to get a date. *Personality and Social Psychology Bulletin, 24*(11), 1228–1242.
Schweitzer, Maurice E., & Hsee, Christopher K. (2002). Stretching the truth: Elastic justification and motivated communication of uncertain information. *Journal of Risk and Uncertainty, 25*(2), 185–201.
Sutter, Matthias (2009). Deception through telling the truth?! Experimental evidence from individuals and teams. *Economic Journal, 119*(534), 47–60.
Tyler, James M., & Feldman, Robert S. (2004). Truth, lies, and self-presentation: How gender and anticipated future interaction relate to deceptive behavior. *Journal of Applied Social Psychology, 34*(12), 2602–2615.
Tyler, James M., Feldman, Robert S., & Reichert, Andreas (2006). The price of deceptive behavior: Disliking and lying to people who lie to us. *Journal of Experimental Social Psychology, 42*(1), 69–77.
Wiltermuth, Scott S. (2011). Cheating more when the spoils are split. *Organizational Behavior and Human Decision Processes, 115*(2), 157–168.