



# Licence to lie and the social (In)appropriateness of lying

Nina Serdarevic

Department of Economics, University of Bergen, Norway

## ARTICLE INFO

### Article history:

Received 2 September 2020  
Received in revised form 20 December 2020  
Accepted 22 December 2020  
Available online 26 December 2020

### JEL classification:

C91  
C92

### Keywords:

Social appropriateness  
Dishonesty  
Representative experiment  
Injunctive norms

## ABSTRACT

Environments that encourage dishonest behaviour can compromise intrinsic honesty by altering beliefs about what is considered socially appropriate behaviour. I extend the incentivised Krupka and Weber (2013) elicitation method to the domain of lying and present two complementary studies that show how different social environments not only instigate different levels of dishonest behaviour but also change what a representative sample of Norwegian citizens perceives as socially appropriate when it comes to lying.

© 2020 The Author. Published by Elsevier B.V. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

## 1. Introduction

Intrinsic preferences for honesty are crucial for a well-functioning society. Countries with a lower prevalence of rule violations typically also have citizens with higher intrinsic honesty (Gächter and Schulz, 2016). According to Worldwide Governance Indicators, Norway remains one of the world's least corrupt countries, suggesting the respect of citizens for the institutions that govern economic and social interactions. However, can preferences for truth-telling ever be so strong that they transcend conformity to situational pressures? People often find themselves in situations that are thought to tolerate or encourage dishonest practices (Schnatterly et al., 2018). Even in a simple economic experiment, subjects may change their behaviour due to explicit and implicit cues about what is expected to constitute appropriate behaviour (Zizzo, 2010).

In this paper, I ask whether reporting private information reflects people's preferences for truthfulness or whether it reflects conformity to what is believed to constitute appropriate behaviour. In doing so, I engage with the literature showing that social norms – perceptions of what most people do and what most would approve of – affects susceptibility to lying (Abeler et al., 2019).<sup>1</sup> This paper adds to the literature on lying by using a new method to further underline the importance of social norms

for lying and to the literature on social norms by eliciting, for the first time, the social inappropriateness of misreporting in the dice-rolling game by Fischbacher and Föllmi-Heusi (2013) (FFH), and how this varies with context.

In Experiment 1, I randomise subjects into one of three payoff-identical variants of the dice-rolling game, exogenously varying whether subjects are encouraged to report private information truthfully. While the first experiment serves to document the variability of reporting behaviour between these environments, the main contribution of the paper lies in Experiment 2, in which I implement the Krupka and Weber (2013) (KW) method among a representative sample of Norwegian citizens to elicit the underlying injunctive norms governing reporting behaviour in the three variants of the game.

The KW method has been applied to dictator games (Erkut et al., 2015), fairness (Vesely, 2015), environmental (Vesely and Klöckner, 2018) and discriminatory behaviour (Barr et al., 2015), and gift-exchange games (Gächter et al., 2013). Given that beliefs about socially shared perceptions are usually incorporated as post-hoc explanations for dishonesty, eliciting them in payoff-identical situations that vary in other respects may fruitfully complement approaches that model preferences for truth-telling by (1) allowing for more empirically informed predictions about how the features of decision-making situations affect lying, and (2) obtaining measures of how appropriate some lies are relative to others instead of viewing all lies as categorically wrong.

E-mail address: [nina.serdarevic@uib.no](mailto:nina.serdarevic@uib.no).

<sup>1</sup> Deviations from the norm result in feelings of guilt or shame (Weibull and Villa, 2005) and a disutility in proportion to the amount others infer one to cheat (Dufwenberg and Dufwenberg, 2018), as well as social identity concerns (Gneezy et al., 2018).

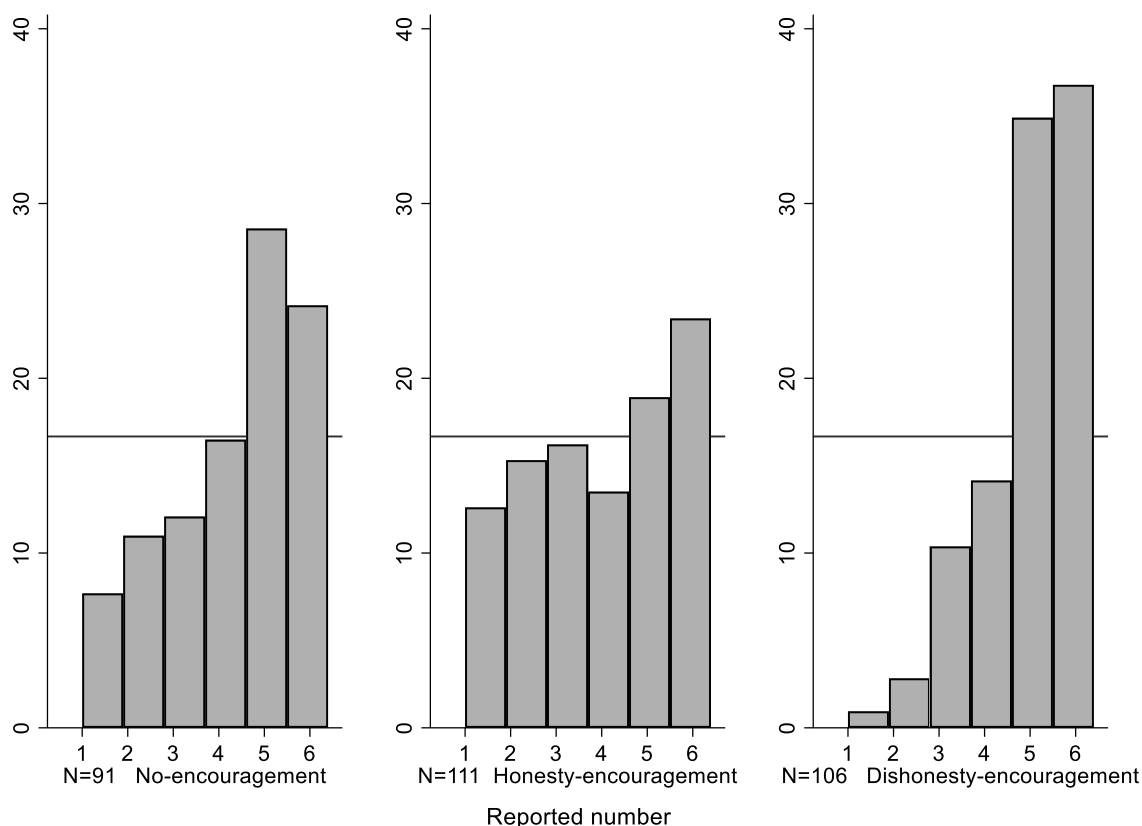


Fig. 1. Aggregated reporting behaviour (%) in the three variants of the dice-rolling game. Notes: The vertical line represents the expected distribution if every participant reported the true number of his or her die roll (16.7%).

2. Experiment 1: License to Lie

2.1. Design and procedures

Within each session, subjects were randomised into one of three variants of the dice-rolling game. The *no-encouragement* game is the standard variant of the dice-rolling game by FFH. After rolling the die, subjects were told to “report the number obtained from the first throw”, without receiving additional information about the expected truthfulness of their reporting behaviour.<sup>2</sup> In the *honesty-encouragement* game, the instructions were more explicit and added that the subjects “have to report truthfully”. Finally, in the *dishonesty-encouragement* game, participants were told that they “do not have to report truthfully”.<sup>3</sup>

A total of 308 subjects took part in a pen-and-paper experiment in the Citizen Lab at the University of Bergen. Subjects received 6.44 USD as payment for participation in addition to their earnings in the experiment. As material payoff depended on the reported number, participants were incentivised to report a higher number than they actually obtained in all three variants of the game. The number subjects reported to have obtained in the die roll was multiplied by 100 NOK (12.71 USD). Participants’ decisions remained truly anonymous in the experiment. Still, by comparing the distribution of the reported numbers to the expected distribution of a fair die (16.7%), I compared the degree of misreporting between the three variants of the game.

<sup>2</sup> Subjects in the FHH study were not explicitly told to report their obtained number truthfully. Still, the instructions were not completely free of implicit encouragements: “Your first throw decides how much you receive” and “Now please enter the number—i.e., the first you have thrown”.

<sup>3</sup> See the Supplementary Materials for detailed experimental instructions.

2.2. Results

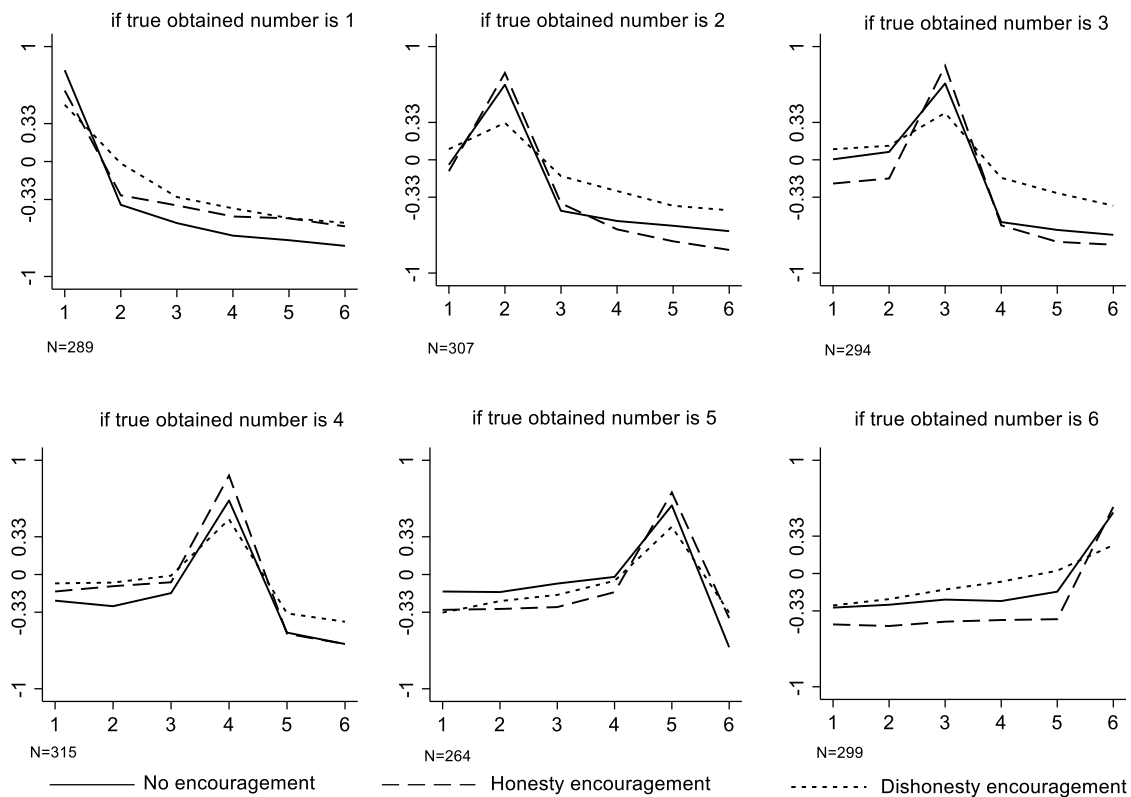
Fig. 1 shows that the distribution of reported numbers in each of the three variants of the game is increasing, implying that participants report higher numbers than those actually obtained. However, participants who are encouraged to misreport report significantly higher numbers than participants who receive no instructions about the expected truthfulness of their reporting ( $p < 0.01$ ,  $N = 197$ ).<sup>4</sup> Although participants appear to misreport less often when encouraged to be honest, their average reporting behaviour is not significantly distinguishable from that of participants who receive no instructions about the truthfulness of their reporting ( $p = 0.141$ ,  $N = 202$ ). The largest differences in average reporting behaviour are observed between participants who are encouraged to be honest and participants who are encouraged to lie ( $p < 0.01$ ,  $N = 217$ ).

3. Experiment 2: On the social (in)appropriateness of lying

3.1. Design and procedures

While the results of Experiment 1 are interesting in their own right, Experiment 2 takes the analysis a step further by employing the KW method among a representative sample of Norwegian citizens, examining whether encouragements to adopt a specific reporting behaviour alter perceptions of the inappropriateness of lying. The Norwegian Citizen Panel is a probability-based online survey offering a representative cross-section of the Norwegian population over the age of 18. The sample is recruited by post

<sup>4</sup> All differences in average reporting behaviour are tested with Fligner-Policello tests.



**Fig. 2.** Mean social appropriateness ratings by true number obtained and game variant. Notes: Each of the six sub-figures represents one scenario, the true number “person A” obtained on the die roll, and compares the mean appropriateness ratings of reporting a higher (lower) number than the true number obtained between the three variants of the game. Mean ratings are constructed by assigning values of  $-1$ ,  $-0.33$ ,  $0.33$  and  $1$  for the ratings “very socially inappropriate”, “somewhat socially inappropriate”, “somewhat socially appropriate”, and “very socially appropriate” respectively.

and contains individuals from various age categories, education levels, and geographical regions.<sup>5</sup>

I present a sample of 1,768 subjects with a description of a scenario in which a decision-maker from Experiment 1, “person A”, rolled a die and obtained a number between 1 and 6. Subjects were randomised to a 3 (*no-encouragement*, *honesty-encouragement*, *dishonesty-encouragement*) by 6 (*the true number obtained by person A*) between-subject design and asked to rate the appropriateness of numbers person A could report from “very socially inappropriate” to “very socially appropriate”. That is, within each of the three variants of the game, one subgroup of participants judges the actions available to a person A who obtained a one in the dice roll. Another subgroup rates the actions of a person A, who obtained a two, and so on.

Rather than revealing personal opinions about the appropriateness of various reporting behaviours, participants were incentivised with 60 USD to match their ratings to what they believed other citizens would view as appropriate within the three variants of the dice-rolling game.

### 3.2. Results

The general pattern of ratings in Fig. 2 reveals that participants in the three variants of the game consider reporting the true number obtained to be the most socially appropriate action across all six scenarios. To estimate the effect on inappropriateness of reporting a higher (lower) number than the true number, I ran

<sup>5</sup> See Skjerveim and Høgestøl (2017) for a methodology report outlining the recruitment and randomisation procedures for the wave in which this experiment was fielded.

an ordinary least squares regression for each of the six scenarios. In line with Eisenkopf et al. (2011), who show that the size of a lie affects people’s punishment decisions, Table 1 reports that lying is not judged as either appropriate or inappropriate; payoff-maximising lies are deemed more inappropriate than payoff-minimising lies.

However, subjects on average judge the reporting behaviour of person A differently depending on whether he or she lied out of own will or whether lying was encouraged; the social inappropriateness of lying is reduced when lying is encouraged. Table A.1 in the Appendix reports the treatment differences in the inappropriateness of misreporting. The perceived appropriateness of misreporting tends to decay at a slower rate in the “dishonesty-encouragement” game compared to the “honesty-encouragement” and “no-encouragement” game.<sup>6</sup>

### 4. Concluding remarks

Combining insights from an experiment conducted with a nationally representative sample of Norwegian citizens and a laboratory experiment, this paper shows that varying the instructions making it clear whether lying is allowed, changes reporting behaviour as well as what is perceived to constitute socially appropriate behaviour. These results emphasise the vulnerability of social norms in the dice-rolling game and speak more broadly to the impact of the experimenter demand effect.

<sup>6</sup> To account for multiple hypothesis testing, I apply the Benjamini–Hochberg False Discovery Rate method (Benjamini and Hochberg, 1995). The results remain qualitatively unaffected and are available upon request.

**Table 1**  
Inappropriateness of reporting a higher (lower) number than the true number.

Report	if true # 1			if true # 2			if true # 3			if true # 4			if true # 5			if true # 6		
	NE	HE	DE	NE	HE	DE	NE	HE	DE	NE	HE	DE	NE	HE	DE	NE	HE	DE
1	0.8*** (0.07)	0.6*** (0.07)	0.5*** (0.07)	-0.7*** (0.08)	-0.9*** (0.11)	-0.2*** (0.11)	-0.7*** (0.10)	-1.0*** (0.10)	-0.3*** (0.09)	-0.9*** (0.09)	-1.0*** (0.10)	-0.6*** (0.10)	-0.8*** (0.13)	-1.0*** (0.11)	-0.8*** (0.12)	-0.8*** (0.12)	-1.0*** (0.11)	-0.5*** (0.15)
2	-1.2*** (0.10)	-0.9*** (0.10)	-0.5*** (0.10)	0.7*** (0.06)	0.8*** (0.06)	0.3*** (0.08)	-0.6*** (0.10)	-1.0*** (0.09)	-0.3*** (0.09)	-0.9*** (0.09)	-1.0*** (0.09)	-0.6*** (0.10)	-0.8*** (0.13)	-1.0*** (0.11)	-0.7*** (0.13)	-0.8*** (0.12)	-1.1*** (0.11)	-0.5*** (0.14)
3	-1.3*** (0.10)	-1.0*** (0.11)	-0.8*** (0.10)	-1.1*** (0.09)	-1.2*** (0.10)	-0.5*** (0.11)	0.7*** (0.07)	0.8*** (0.04)	0.4*** (0.08)	-0.8*** (0.09)	-0.9*** (0.09)	-0.5*** (0.09)	-0.7*** (0.12)	-1.0*** (0.10)	-0.6*** (0.12)	-0.8*** (0.12)	-1.0*** (0.11)	-0.4*** (0.14)
4	-1.4*** (0.10)	-1.1*** (0.11)	-0.9*** (0.11)	-1.2*** (0.09)	-1.4*** (0.10)	-0.6*** (0.12)	-1.2*** (0.10)	-1.4*** (0.09)	-0.6*** (0.09)	0.6*** (0.06)	0.9*** (0.04)	0.5*** (0.07)	-0.6*** (0.12)	-0.9*** (0.10)	-0.5*** (0.11)	-0.8*** (0.11)	-1.0*** (0.11)	-0.3*** (0.13)
5	-1.5*** (0.11)	-1.1*** (0.12)	-1.0*** (0.11)	-1.2*** (0.10)	-1.5*** (0.09)	-0.7*** (0.13)	-1.3*** (0.10)	-1.6*** (0.08)	-0.7*** (0.10)	-1.2*** (0.10)	-1.4*** (0.08)	-0.8*** (0.10)	0.6*** (0.07)	0.7*** (0.06)	0.4*** (0.09)	-0.7*** (0.11)	-1.0*** (0.11)	-0.2* (0.12)
6	-1.5*** (0.11)	-1.2*** (0.12)	-1.0*** (0.11)	-1.3*** (0.10)	-1.6*** (0.09)	-0.8*** (0.12)	-1.3*** (0.11)	-1.6*** (0.09)	-0.8*** (0.11)	-1.3*** (0.10)	-1.5*** (0.08)	-0.9*** (0.10)	-1.2*** (0.11)	-1.1*** (0.11)	-0.8*** (0.11)	0.5*** (0.08)	0.6*** (0.07)	0.3*** (0.09)
N = 289, R <sup>2</sup> = 0.288			N = 307, R <sup>2</sup> = 0.293			N = 294, R <sup>2</sup> = 0.305			N = 315, R <sup>2</sup> = 0.248			N = 264, R <sup>2</sup> = 0.182			N = 299, R <sup>2</sup> = 0.144			

Notes: Regression estimates with standard errors clustered at the individual level in parentheses, with no controls. Reporting the true obtained number is the reference group in each of the six regression specifications and is indicated by the mean appropriateness rating in the diagonally shaded area (constant term). Estimates above the diagonal represent decay in appropriateness of reporting a lower number than the true obtained. Estimates below the diagonal represent decay in appropriateness of reporting a higher number than the true obtained. NE: no-encouragement, HE: honesty-encouragement, DE: dishonesty-encouragement. \*p<0.10, \*\*p<0.05, \*\*\*p<0.01.

**Table A.1**  
Treatment differences in inappropriateness of reporting a higher (lower) number than the true number.

Report	if true # 1			if true # 2			if true # 3			if true # 4			if true # 5			if true # 6		
	NE-HE	NE-DE	DE-HE	NE-HE	NE-DE	DE-HE	NE-HE	NE-DE	DE-HE	NE-HE	NE-DE	DE-HE	NE-HE	NE-DE	DE-HE	NE-HE	NE-DE	DE-HE
1	-0.2* (0.09)	0.3*** (0.10)	-0.1 (0.10)	-0.2 (0.14)	0.5*** (0.13)	0.6*** (0.15)	-0.4*** (0.14)	0.3** (0.14)	0.7*** (0.13)	-0.1 (0.13)	0.3** (0.13)	0.5*** (0.13)	-0.3 (0.14)	0.0 (0.17)	0.3 (0.18)	-0.2 (0.17)	0.3 (0.17)	0.5*** (0.19)
2	0.3* (0.15)	0.7*** (0.15)	0.4*** (0.15)	0.1 (0.08)	-0.3*** (0.10)	-0.4*** (0.10)	-0.4*** (0.13)	0.3** (0.13)	0.7*** (0.13)	0.0 (0.13)	0.4*** (0.13)	0.4*** (0.14)	-0.3 (0.17)	0.1 (0.18)	0.4** (0.17)	-0.2 (0.17)	0.3* (0.17)	0.6*** (0.18)
3	0.3** (0.15)	0.5*** (0.15)	0.2 (0.15)	0.0 (0.13)	0.6*** (0.14)	0.7*** (0.15)	0.2* (0.08)	-0.3** (0.10)	-0.4*** (0.09)	-0.1 (0.13)	0.3** (0.13)	0.4*** (0.13)	-0.3** (0.16)	0.1 (0.17)	0.4*** (0.16)	-0.2 (0.17)	0.4** (0.17)	0.6*** (0.18)
4	0.3** (0.15)	0.5*** (0.15)	0.2 (0.16)	-0.2 (0.14)	0.6*** (0.15)	0.8*** (0.16)	-0.2 (0.13)	0.7*** (0.14)	0.8*** (0.13)	0.2*** (0.08)	-0.2* (0.09)	-0.4*** (0.15)	-0.2 (0.16)	0.2 (0.16)	0.4*** (0.15)	-0.2 (0.16)	0.5*** (0.17)	0.7*** (0.17)
5	0.4** (0.16)	0.5*** (0.15)	0.1 (0.17)	-0.2* (0.14)	0.5*** (0.16)	0.8*** (0.16)	-0.3* (0.13)	0.6*** (0.15)	0.8*** (0.13)	-0.2* (0.12)	0.3** (0.14)	0.6*** (0.13)	0.1 (0.10)	-0.2 (0.11)	-0.3*** (0.11)	-0.3* (0.15)	0.5*** (0.16)	0.8*** (0.16)
6	0.3** (0.16)	0.5*** (0.16)	0.2 (0.17)	-0.3* (0.14)	0.5*** (0.15)	0.8*** (0.14)	-0.2* (0.15)	0.5*** (0.14)	0.8*** (0.14)	-0.2* (0.13)	0.4** (0.14)	0.6*** (0.13)	0.1 (0.15)	0.5*** (0.16)	0.3** (0.16)	0.0 (0.11)	-0.3*** (0.11)	-0.3*** (0.11)
N = 289, R <sup>2</sup> = 0.288			N = 307, R <sup>2</sup> = 0.293			N = 294, R <sup>2</sup> = 0.305			N = 315, R <sup>2</sup> = 0.248			N = 264, R <sup>2</sup> = 0.182			N = 299, R <sup>2</sup> = 0.144			

Notes: Regression estimates with standard errors clustered at the individual level in parentheses, with no controls. Reporting the true obtained number is the reference group in each of the six regression specifications. The diagonally shaded area captures the treatment differences in mean appropriateness ratings of reporting truthfully. Estimates above the diagonal represent treatment differences in inappropriateness of reporting a lower number than the true number. Estimates below the diagonal represent treatment differences of reporting a higher number than the true number. \*p<0.10, \*\*p<0.05, \*\*\*p<0.01.

While the literature on lying and social norms is large, less research has directly elicited the injunctive norms underlying dishonest behaviour. Current scholarship has focused on descriptive norms, conditioning dishonesty on the observed behaviour of others (Köbis et al., 2015) and rule reminders aimed to increase the salience of injunctive norms (Lois and Wessa, 2020). As variations in context are likely to influence shared perceptions of appropriate behaviour, the KW method may be useful to apply to the domain of lying in order to more accurately predict how the inappropriateness of lying relates to dishonesty in different situations.

**Declaration of competing interest**

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

**Acknowledgements**

I thank the editor and an anonymous referee for their valuable comments and suggestions for improving this paper. I thank Sigve Tjøtta, Rita Ginja, Daniele Nosenzo, Xiaogeng Xu and the various seminar participants at the University of Bergen, DIGSSCORE, the Norwegian School of Economics, Field Days (University of Copenhagen) for helpful comments and discussions. I thank Ane Mathea Bjonnes, Pernille Bucher, Marie Urdal, Amanda Kvarven,

and Eirik Strømland for assisting in Experiment 1. I am grateful to the Meltzer's Høyskole Fund, Norway for its financial support.

**Appendix A**

See Table A.1.

**Appendix B. Supplementary material**

Supplementary material related to this article can be found online at <https://doi.org/10.1016/j.econlet.2020.109716>.

**References**

Abeler, J., Nosenzo, D., Raymond, C., 2019. Preferences for truth-telling. *Econometrica* 87 (4), 1115–1153.  
 Barr, A., Lane, T., Nosenzo, D., 2015. On the social appropriateness of discrimination. *cedex discussion paper series*.  
 Benjamini, Y., Hochberg, Y., 1995. Controlling the false discovery rate: A practical and powerful approach to multiple testing. *J. R. Stat. Soc. Ser. B Stat. Methodol.* 57 (1), 289–300.  
 Dufwenberg, M., Dufwenberg, M.A., 2018. Lies in disguise—A theoretical analysis of cheating. *J. Econom. Theory* 175, 248–264.  
 Eisenkopf, G., Gurtoviy, R., Utikal, V., 2011. Size Matters: When it Comes to Lies (Tech. Rep.). In IAAEG Discussion Paper Series, pp. 1–19.  
 Erkut, H., Nosenzo, D., Sefton, M., 2015. Identifying social norms using coordination games: Spectators vs. stakeholders. *Econom. Lett.* 130, 28–31.  
 Fischbacher, U., Föllmi-Heusi, F., 2013. Lies in disguise—An experimental study on cheating. *J. Eur. Econom. Assoc.* 11 (3), 525–547.

- Gächter, S., Nosenzo, D., Sefton, M., 2013. Peer effects in pro-social behavior: Social norms or social preferences? *J. Eur. Econom. Assoc.* 11 (3), 548–573.
- Gächter, S., Schulz, J.F., 2016. Intrinsic honesty and the prevalence of rule violations across societies. *Nature* 531 (7595), 496–499.
- Gneezy, U., Kajackaite, A., Sobel, J., 2018. Lying aversion and the size of the Lie. *Amer. Econ. Rev.* 108 (2), 419–453.
- Köbis, N.C., Van Prooijen, J.W., Righetti, F., Van Lange, P.A., 2015. Who doesn't?—The impact of descriptive norms on corruption. *PLoS One* 10 (6), 1–14.
- Krupka, E.L., Weber, R.A., 2013. Identifying social norms using coordination games: Why does dictator game sharing vary? *J. Eur. Econom. Assoc.* 11 (3), 495–524.
- Lois, G., Wessa, M., 2020. Honest mistake or perhaps not: The role of descriptive and injunctive norms on the magnitude of dishonesty. *J. Behav. Decis. Mak.* 1–15.
- Schnatterly, K., Gangloff, K.A., Tuschke, A., 2018. CEO Wrongdoing: A review of pressure, opportunity, and rationalization. *J. Manage.* 44 (6), 2405–2432.
- Skjervheim, Høgestøl, A., 2017. Norwegian Citizen Panel Methodology Report Wave, Vol. 8. Technical report, Ideas 2 Evidence, University of Bergen, Bergen, pp. 2–17.
- Vesely, S., 2015. Elicitation of normative and fairness judgments: Do incentives matter? *Judgm. Decis. Mak.* 10 (2), 191–197.
- Vesely, S., Klöckner, C.A., 2018. Global social norms and environmental behavior. *Environ. Behav.* 50 (3), 247–272.
- Weibull, J.W., Villa, E., 2005. Crime, Punishment and Social Norms. In: *SSE/EFI Working Paper Series in Economics and Finance*, vol. 610, Stockholm School of Economics, pp. 1–29.
- Zizzo, D.J., 2010. Experimenter demand effects in economic experiments. *Exp. Econom.* 13 (1), 75–98.