LETTER

doi:10.1038/nature13977

Business culture and dishonesty in the banking industry

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Trust in others' honesty is a key component of the long-term performance of firms, industries, and even whole countries[1–4]. However, in recent years, numerous scandals involving fraud have undermined confidence in the financial industry[5–7]. Contemporary commentators have attributed these scandals to the financial sector's business culture[8–10], but no scientific evidence supports this claim. Here we show that employees of a large, international bank behave, on average, honestly in a control condition. However, when their professional identity as bank employees is rendered salient, a significant proportion of them become dishonest. This effect is specific to bank employees because control experiments with employees from other industries and with students show that they do not become more dishonest when their professional identity or bank-related items are rendered salient. Our results thus suggest that the prevailing business culture in the banking industry weakens and undermines the honesty norm, implying that measures to re-establish an honest culture are very important.

Banks and financial markets are fundamental pillars of every advanced economy, and banking services are a key requirement for economic development[11]. The recent wave of problematic financial practices and scandals involving fraud, however, has caused serious economic damage and may threaten the stability and reputation of banks and the financial sector as a whole. For example, the practices of the two rogue traders Jerôme Kerviel and Kweku Adoboli resulted in total damages of almost US$10 billion[5]. Other examples, such as the manipulation of key interest rates (for example, LIBOR[6]), as well as several tax evasion affairs[12], have led to a dramatic loss of reputation and a crisis of trust[7] in the financial sector.

Policy makers are increasingly concerned about these scandals, and often attribute problems to the prevailing business culture (that is, the norms and informal rules) in the banking industry[8], which is thought to tolerate dishonest behaviours instead of prohibiting them. Lord Adair Turner, who was chairman of the UK Financial Services Authority from 2008 to 2013, argued that "bank executives face the challenge of setting clearly from the top a culture which tells people that there are things they shouldn't do, even if they are legal, even if they are profitable and even if it is highly likely that the supervisor will never spot them"[10].

Despite its policy relevance, sound empirical evidence on the culture in the banking industry is lacking. Identifying the effects of business culture poses several challenges. Simply comparing the prevalence of dishonesty among bank employees and other professionals can be misleading. More honest people may select different professions than less honest people, which makes it difficult to disentangle cultural and selection effects. Moreover, professional groups vary along many unobservable dimensions. For example, differences in honesty could be related to differences in personal financial situations across professions. Failing to account for such dimensions could result in spurious correlations.

We take a novel approach that is inspired by the economic theory of identity[13], which proposes that individuals have multiple social identities based on, for example, gender, ethnicity or profession. Identities are associated with specific social norms prescribing permissible behaviours. Which identity and associated norms are behaviourally relevant depends on the relative weight an individual attributes to an identity. In a given situation, behaviour is shifted towards those norms that are associated with the more salient identity[14–17]. Thus, if the banking culture favours dishonest behaviours, it should be possible to trigger dishonesty in bank employees by rendering their professional identity salient[14].

To study whether the banking culture causes dishonesty, we recruited 128 bank employees from a large, international bank for an experiment. We randomly assigned the employees either to a treatment condition that increased the salience of their professional identity or to a control condition in which their professional identity was not made salient. Random assignment ensures that subjects in the two conditions are statistically indistinguishable in all observable and unobservable characteristics. This circumvents problems related to selection and spurious correlation.

On average, the bank employees had 11.5 years of experience in the banking industry. Roughly half of them worked in a core business unit, that is, as private bankers, asset managers, traders or investment managers. The others came from one of the support units (for example, risk or human resources management). Subjects participated in a short online survey. After answering some filler questions about subjective wellbeing, subjects in the professional identity condition were asked seven questions about their professional background (for example, "At which bank are you presently employed?" or "What is your function at this bank?"). Those in the control condition were asked seven questions that were unrelated to their profession (for example, "How many hours per week do you watch television on average?").

After the priming questions, all subjects anonymously performed a coin tossing task that has been shown to reliably measure dishonest behaviour in an unobtrusive way[18–20] and to predict rule violation outside the laboratory[17]. The rules required subjects to take any coin, toss it ten times, and report the outcomes online. For each coin toss they could win an amount equal to approximately US$20 (as opposed to $0) depending on whether they reported 'heads' or 'tails'. Subjects knew in advance whether heads or tails would yield the monetary payoff for a specific coin toss. Moreover, subjects were informed that their earnings would only be paid out if they were higher than or equal to those of a randomly drawn subject from a pilot study. We introduced this element to mimic the competitive nature of the banking profession[9]. Given that the maximum payoff is approximately $200, subjects faced a considerable incentive to cheat by misreporting the outcomes of their coin tosses. Because subjects were unobserved during the task and because they could hide behind chance, it is impossible to identify who cheated. However, we can detect dishonesty at the group level by comparing the reported fraction of successful outcomes with the 50% benchmark implied by honest reporting. Using similar paradigms, researchers found that in situations in which cheating cannot be detected, many individuals do not take full advantage of cheating opportunities[18–22]. This phenomenon is typically attributed to the presence of an honesty norm[4,23] that causes psychological costs when one cheats, such as the loss of one's positive self-image[21].

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We conducted a manipulation check in which subjects converted word fragments into meaningful words. For example, they could complete the word fragment "_ _oker" with the bank-related word "broker" or an unrelated word such as "smoker". This allowed us to test whether the treatment increased professional identity salience. The frequency of bank-related words in the professional identity condition was increased by 40%, from 26% in the control to 36% ($P = 0.035$, rank-sum test), indicating that our manipulation was successful.

Figure 1a shows the binomial distribution of earnings in the coin tossing task that would result if everyone behaved honestly, and the empirical distribution from the control condition. Both distributions closely overlap, suggesting that the control group behaved mostly honestly. On average, they reported successful coin flips in 51.6% of the cases, which is not significantly different from 50% (95% confidence interval: 48%, 56%). By contrast, the bank employees were substantially more dishonest in the professional identity condition (Fig. 1b). On average, they reported 58.2% successful coin flips, which is significantly above chance (95% confidence interval: 53%, 63%) and significantly higher than the success rate reported by the control group ($P = 0.033$, rank-sum test). Figure 1 shows that the treatment effect appears to be driven by two factors: (1) a higher fraction of subjects claiming the maximum earnings; and (2) an increase in incomplete cheating (that is, reporting 6, 7 and 8 successful coin flips). Assuming that subjects did not cheat to their disadvantage, the rate of misreporting is 16% in the professional identity condition. Alternatively, we can compute the fraction of subjects who cheated, which is 26% (Supplementary Methods).

Regression analysis (Extended Data Table 1) shows that the treatment effect is robust even when we control for a large set of individual characteristics such as age, gender, education, income, and nationality ($P = 0.034$, Wald test). When also controlling for business unit and experience in the banking industry, we find that employees in core business units were more dishonest than those in support units ($P = 0.008$, Wald test). However, the treatment effect is not stronger in these units because the interaction between the professional identity condition and working in a core unit is not significant ($P = 0.960$, Wald test).

There are several possible channels through which the professional identity priming increased dishonesty. One possibility is that the banking culture is characterized by norms that consider competitive behaviour to be intrinsically desirable. Perhaps the professional identity condition, together with the competitive feature in the coin tossing task, triggered this cultural aspect and, thus, increased subjects' desire to compete. To examine this, we asked subjects the following question after the priming: "How important is it to you to be the best at what you do?" However, the professional identity prime did not change subjects' desire to compete ($P = 0.861$, rank-sum test; Extended Data Fig. 1). Moreover, regression analysis shows that the correlation between competitiveness and successful coin flips is statistically insignificant ($P = 0.642$, Wald test; Extended Data Table 3b). It is therefore unlikely that a change in subjects' desire to compete is the channel through which the treatment increased dishonesty. A related channel is that the professional identity questions might have reminded bank employees of their exposure to competitive incentive schemes and thereby increased cheating. If salience of competitive incentives were the driving force behind the increase in cheating, we should observe a stronger treatment effect in core business relative to support units, because competitive incentives are more prevalent in core units. As described earlier, however, the treatment effect in core units is similar and statistically indistinguishable from the support units.

Norm obedience is typically affected by (1) what people believe they should do, and (2) what they believe others do[24]. In principle, the professional identity prime could have triggered beliefs that others report a higher number of successful coin flips than is true, and this could have induced subjects to report a higher number themselves. To address this, we conducted an incentivized experiment with 142 employees from the banking industry in which they had to predict other bank employees' reporting behaviour (Supplementary Discussion). If a change in beliefs was driving the treatment effect, we should observe that the professional identity questions induce bank employees to believe that other bank employees are more dishonest. However, and in contrast to this prediction, our manipulation did not affect beliefs about other bank employees' reporting behaviour ($P = 0.921$, rank-sum test; Extended Data Fig. 2).

Many critics believe that the professional culture in the banking industry promotes unethical behaviour owing to its focus on materialistic values[9,25,26]. We asked subjects about the extent to which they endorse the statement that social status is primarily determined by financial success. It seems likely that subjects who endorse this statement are more prone to seek status through financial success, implying that their responses provide an approximation of their materialism. We found that subjects in the professional identity condition endorsed the statement significantly more strongly than those in the control condition ($P = 0.034$, rank-sum test; Fig. 2a). Moreover, a stronger endorsement of the materialistic statement is positively correlated with the reported number of successful outcomes (Spearman's rho = 0.237, $P = 0.007$; Fig. 2b). These findings substantiate current concerns about the influence of materialistic values in the banking sector and indicate that the professional identity prime may have increased dishonesty through an increase in materialistic values.

Our results suggest that bank employees' compliance with the honesty norm was weakened in the professional identity condition. This raises

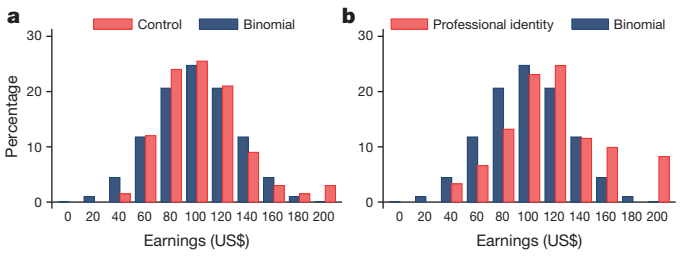

Figure 1 | Distribution of earnings in the coin tossing task claimed by the bank employees. **a**, **b**, Each successful coin toss yielded approximately $20. **a**, Distribution of earnings in the control condition in comparison to the binomial distribution implied by honest reporting. On average, bank employees reported 51.6% successful coin flips, which is not significantly different from 50% ($P = 0.415$, two-sided t-test; $n = 67$). **b**, Distribution of earnings in the professional identity condition in comparison to the binomial distribution. Bank employees in the professional identity condition reported 58.2% successful coin flips, which is significantly above chance ($P = 0.002$, two-sided t-test; $n = 61$) and significantly higher than the reported success rate in the control group ($P = 0.033$, two-sided rank-sum test; $n = 128$).

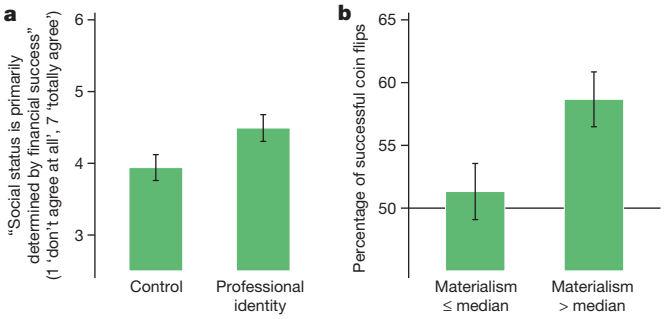

Figure 2 | Professional identity, materialism and cheating. **a**, Materialism measured by the extent to which bank employees endorse the statement "Social status is primarily determined by financial success" on a scale from 1 (not at all agree) to 7 (fully agree). Subjects in the professional identity condition show a significantly stronger endorsement of this statement ($P = 0.034$, two-sided rank-sum test; $n = 128$). **b**, Percentage of successful coin flips for participants with a below-median or median level of materialism compared to those with an above-median level of materialism. Above-median subjects are substantially more dishonest ($P = 0.010$, two-sided rank-sum test; $n = 128$). Error bars indicate standard error of the mean (s.e.m.).

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the question as to whether this effect is specific to bank employees or whether it also appears in other professions. We thus repeated the experiment with 133 employees outside the banking industry. On average, they had 14.8 years of experience in a broad range of industries (for example, manufacturing, pharmaceutics, telecommunications and information technology). Many held positions in middle or upper management. As in the case of the bank employees, the non-banking employees were randomly assigned to a professional identity or control condition (Supplementary Methods and Notes). If problematic business norms that favour dishonesty are specific to the banking industry, we should not observe a treatment effect in non-banking employees.

We found that the professional identity condition had no significant influence on dishonest behaviour in non-banking employees ($P = 0.128$, rank-sum test; Fig. 3a and Extended Data Fig. 3). A differences-in-differences regression analysis (Extended Data Table 2a) confirms that the treatment effect is significantly different for bank employees relative to non-banking employees ($P = 0.013$, Wald test), and insignificant in non-banking employees ($P = 0.191$, Wald test), suggesting that the treatment effect is specific to the business culture in the banking industry.

An alternative reason for the treatment effect in bank employees is that the banking industry is intrinsically tied to the concept of money, and that the professional identity condition rendered the concept of money salient. As there is evidence that the concept of money triggers more selfish behaviours[27], the professional identity condition could also have triggered more selfish, that is, dishonest, behaviour. If that were the case, it would not be the norms of the banking culture, but the salience of money that increased dishonesty in bank employees.

To examine this, we conducted another control experiment with 222 university students. Like the bank employees, the students were randomly assigned to banking or control questions. In the banking condition we asked them, for example, to name an international bank and to list tasks they think are typical for bank employees. The control questions and other aspects of the design were essentially the same as in the previous two experiments (Supplementary Methods and Notes). Thus, if an increase in money salience caused the professional identity effect, the students in the banking condition should also behave more dishonestly than those in the control condition.

However, the data do not support the hypothesis that money salience drives the professional identity effect. The banking questions had no significant influence on dishonesty in students ($P = 0.390$, rank-sum test, Fig. 3a and Extended Data Fig. 4). A regression analysis (Extended Data Table 2b) shows that the behaviour of students and bank employees is not significantly different in the control condition ($P = 0.105$, Wald test), but—in contrast to the bank employees—the students did not change their behaviour in response to the manipulation ($P = 0.588$, Wald test). The regression analysis further confirms that the treatment effect in the bank employees and the students is significantly different ($P = 0.048$, Wald test).

Our results suggest that the prevailing business culture in the banking industry favours dishonest behaviour and thus has contributed to the loss of the industry's reputation. In contrast to their public image, however, we find that bank employees behave honestly on average in the control condition. To examine how bad bank employees' reputation is, we asked people from the general population about the percentage of successful coin flips they would expect bank employees to report in the coin tossing task. Other survey participants were asked how physicians, prison inmates, or people from the general population would behave in this task (Supplementary Methods). The participants believed that bank employees would be the most dishonest group (Fig. 3b); they believed that bank employees would report a rate of 64% successful coin flips, which corresponds to a cheating rate of 27%. This result, together with representative evidence from other sources (Extended Data Fig. 5), shows that the banking industry currently has a very bad reputation.

People's confidence in the honesty of bank employees is a key asset for the long-term stability of the financial industry. Understanding the determinants of dishonest business practices is therefore essential for the development of possible remedies. Our results suggest that banks should encourage honest behaviours by changing the norms associated with their workers' professional identity. For example, several experts and regulators have proposed that bank employees should take a professional oath analogous to the Hippocratic oath for physicians[28,29]. Such an oath, supported by ethics training, could prompt bank employees to consider the impact of their behaviour on society rather than focusing on their own short-term benefits. A norm change also requires that companies remove financial incentives that reward employees for dishonest behaviours. In addition, existing research suggests that ethics reminders may promote compliance with the honesty norm[4,21,30]. The use of ethics reminders requires a detailed analysis of work routines to find out where and when employees make critical decisions regarding norm obedience, so that normative demands can be rendered salient at the right time and place. These measures may be an important step towards fostering desirable and sustainable changes in business culture.

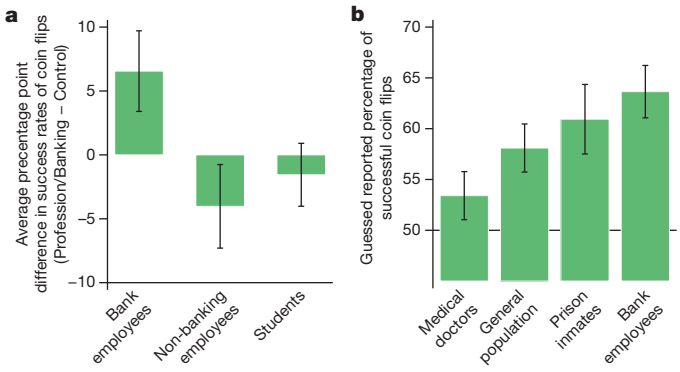

Figure 3 | Dishonest behaviour and beliefs about dishonest behaviour of different social groups. **a**, Comparison of treatment effects in the coin tossing task between bank employees, non-banking employees and students. The salience of professional identity caused an increase in dishonest behaviour in bank employees ($P = 0.033$, two-sided rank-sum test, $n = 128$). By contrast, no significant treatment effects were found in non-banking employees ($P = 0.128$, two-sided rank-sum test, $n = 133$) and students ($P = 0.390$, two-sided rank-sum test, $n = 222$). **b**, Results of a survey of individuals from the general population. Participants guessed the reported percentage of successful coin flips of either physicians ($n = 44$), bank employees ($n = 48$), prison inmates ($n = 45$) or the general population ($n = 46$). Bank employees are perceived to be less honest than physicians ($P = 0.005$, two-sided rank-sum test) and people from the general population ($P = 0.080$, two-sided rank-sum test). Bank employees are believed to behave about as dishonestly as prison inmates ($P = 0.558$, two-sided rank-sum test). Error bars indicate s.e.m.

Online Content Methods, along with any additional Extended Data display items and Source Data, are available in the online version of the paper; references unique to these sections appear only in the online paper.

Received 19 February; accepted 17 October 2014.
Published online 19 November 2014.

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Supplementary Information is available in the online version of the paper.

Acknowledgements We thank the participating bank, the alumni network organizations of three education programmes, and the municipal office for enabling the research; G. Akerlof and D. Ariely for critical discussions; C. Efferson, T. Herz and S. Gschwend for reading of the manuscript; and D. Bigliel and M. Brunner for research assistance. Financial support from the European Research Council Grant "Foundations of Economic Preferences" and the Gottlieb Duttweiler Institute is gratefully acknowledged.

Author Contributions A.C. and M.A.M. developed the research idea; A.C., E.F. and M.A.M. designed the study; A.C. and M.A.M. conducted the experiments, and analysed data. A.C., E.F. and M.A.M. wrote the manuscript.

Author Information Reprints and permissions information is available at www.nature.com/reprints. The authors declare no competing financial interests. Readers are welcome to comment on the online version of the paper. Correspondence and requests for materials should be addressed to A.C. (alain.cohn@econ.uzh.ch), E.F. (ernst.fehr@econ.uzh.ch) or M.A.M. (michel.marechal@econ.uzh.ch).

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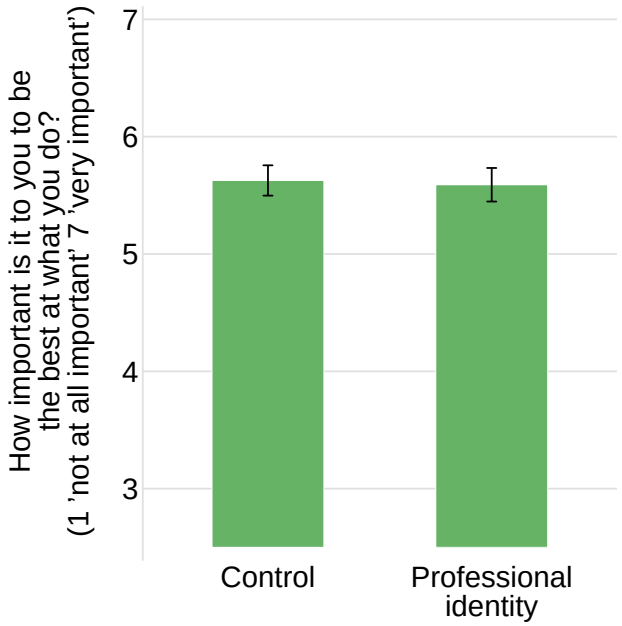

Extended Data Figure 1 | The impact of professional identity on bank employees' intrinsic competitiveness. Competitiveness is measured by the bank employees' answers to the question "How important is it to you to be the best at what you do?" on a scale from 1 (not at all important) to 7 (very important). We find no significant difference in competitiveness between the professional identity and the control condition ($P = 0.861$, two-sided rank-sum test, $n = 128$). Error bars indicate s.e.m.

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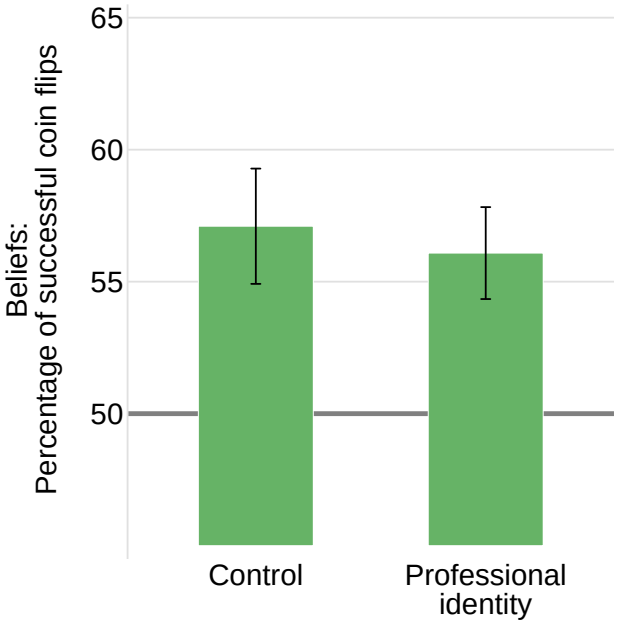

Extended Data Figure 2 | Bank employees' beliefs about other bank employees' percentage of successful coin flips. Incentivized belief elicitation experiment with bank employees. The professional identity condition had no significant influence on beliefs ($P = 0.921$, two-sided rank-sum test, $n = 142$). Error bars indicate s.e.m.

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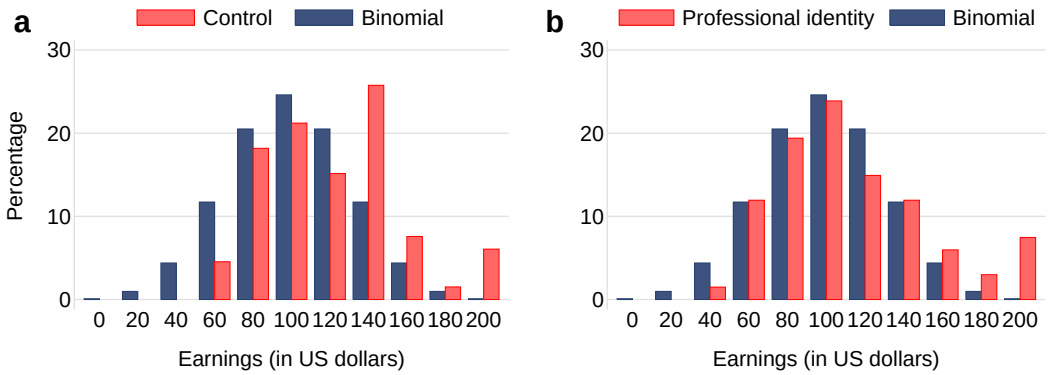

Extended Data Figure 3 | Distribution of earnings in the coin tossing task claimed by the non-banking employees. **a**, **b**, Each successful coin toss yielded approximately $20. **a**, Distribution of earnings in the control condition and binomial distribution (implied by honest reporting). **b**, Distribution of earnings in the professional identity condition and binomial distribution. The rate of successful coin flips is 55.8% (12% misreporting) in the professional identity condition, and 59.8% (20% misreporting) in the control condition, which is not significantly different ($P = 0.128$, two-sided rank-sum test, $n = 133$).

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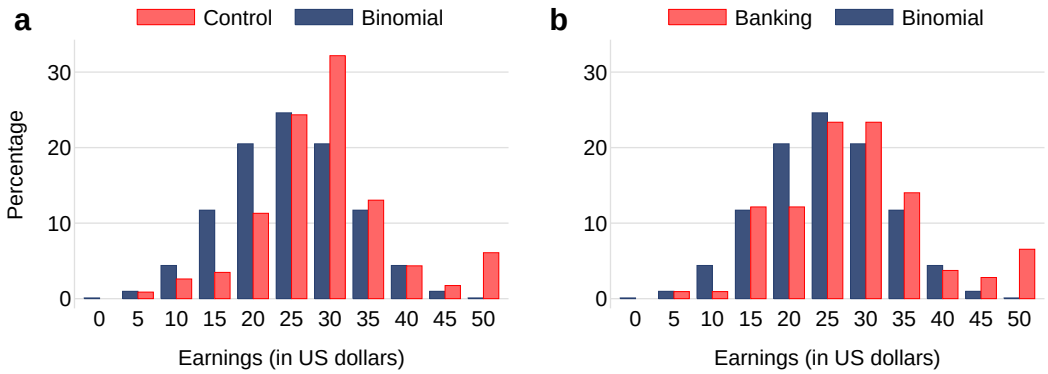

Extended Data Figure 4 | Distribution of earnings in the coin tossing task claimed by the students. **a**, **b**, Each successful coin toss yielded approximately $5. **a**, Distribution of earnings in the control condition and binomial distribution (implied by honest reporting). **b**, Distribution of earnings in the banking condition and binomial distribution. The rate of successful coin flips is 57.9% (16% misreporting) in the control condition and 56.4% (13% misreporting) in the banking condition, which is not significantly different ($P = 0.390$, two-sided rank-sum test, $n = 222$).

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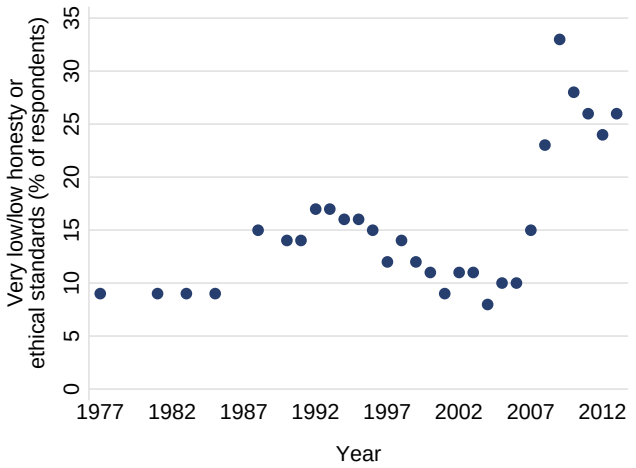

Extended Data Figure 5 | Gallup survey of honesty standards of people in the banking industry. Fraction of US citizens thinking that bankers have very low or low honesty or ethical standards from 1977 to 2013. This graph is an interpretation of data compiled by Gallup, Inc. However, Gallup, Inc. had no part in the creation of this graphic interpretation.

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Extended Data Table 1 | Effect of professional identity on cheating in bank employees

	(a)	(b)
Dependent variable:	1 if successful outcome	
Professional identity	0.065**	0.060**
	(0.031)	(0.030)
Age	-0.000	0.000
	(0.002)	(0.003)
Male	-0.001	0.006
	(0.034)	(0.033)
University degree	0.006	0.016
	(0.031)	(0.034)
Foreign nationality	0.062	0.050
	(0.046)	(0.049)
Relative income	-0.005	-0.006
	(0.012)	(0.012)
Core business unit		0.086***
		(0.033)
Years in industry		-0.000
		(0.003)
Observations	1280	1280
Sample	Bank employees	Bank employees

Probit estimates. Reported results are marginal effects calculated at the median levels of the covariates. Robust standard errors corrected for clustering on the individual level are in parentheses. **a**, The decision to report a successful outcome is regressed on a dummy for the professional identity condition and individual characteristics ($n = 128$). **b**, The second model also includes job-related variables ($n = 128$). Significance levels: *$P < 0.10$, **$P < 0.05$, ***$P < 0.01$ (two-sided Wald tests).

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Extended Data Table 2 | Effect of professional identity/banking condition on cheating in bank and non-banking employees/students

Dependent variable:	(a)	(b)
	1 if successful outcome	
Professional identity/Banking condition	-0.042 (0.032)	-0.013 (0.025)
Professional identity/Banking condition X Bank employees	0.111** (0.045)	0.078** (0.040)
Bank employees	-0.082** (0.034)	-0.064 (0.040)
Age	-0.001 (0.002)	-0.000 (0.002)
Male	0.024 (0.025)	0.027 (0.020)
University degree	0.029 (0.024)	0.007 (0.030)
Foreign nationality	0.048 (0.036)	0.016 (0.026)
Relative income	-0.003 (0.009)	
Years in industry	0.002 (0.002)	
Observations	2610	3500
Sample	Bank employees and non-banking employees	Bank employees and students

Probit estimates. Reported results are marginal effects calculated at the median levels of the covariates. Robust standard errors corrected for clustering on the individual level are in parentheses. The decision to report a successful outcome is regressed on a dummy for the professional identity/banking condition and individual characteristics. We include a dummy for bank employees and an interaction term between this dummy and the treatment dummy. **a**, The first model compares the treatment effect in bank and non-banking employees ($n = 261$), which is indicated in the table by the interaction between 'Professional identity/Banking condition' and 'Bank employees'. **b**, The second model compares the treatment effect in bank employees and students ($n = 350$), which is again indicated by the interaction between 'Professional identity/Banking condition' and 'Bank employees'. We corrected the marginal effect of the interaction term by taking into account the nonlinearity of the Probit model. Significance levels: *$P < 0.10$, **$P < 0.05$, ***$P < 0.01$ (two-sided Wald tests).

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Extended Data Table 3 | Competitiveness, professional identity and cheating in bank employees

	(a)	(b)
Dependent variable:	1 if successful outcome	
Professional identity	0.060**	0.060**
	(0.030)	(0.030)
Age	0.000	0.000
	(0.003)	(0.003)
Male	0.006	0.009
	(0.033)	(0.030)
University degree	0.016	0.017
	(0.034)	(0.034)
Foreign nationality	0.050	0.048
	(0.049)	(0.049)
Relative income	-0.006	-0.008
	(0.012)	(0.012)
Core business unit	0.086***	0.087***
	(0.033)	(0.033)
Years in industry	-0.000	0.000
	(0.003)	(0.003)
Competitiveness		0.008
		(0.017)
Observations	1280	1280
Sample	Bank employees	Bank employees

Probit estimates. Reported results are marginal effects calculated at the median levels of the covariates. Robust standard errors corrected for clustering on the individual level are in parentheses. **a**, The decision to report a successful outcome is regressed on a dummy for the professional identity condition and individual characteristics ($n = 128$). **b**, The second model also includes the bank employees' degree of competitiveness as an additional control variable ($n = 128$). Significance levels: $^{*}P < 0.10$, $^{**}P < 0.05$, $^{***}P < 0.01$ (two-sided Wald tests).

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