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The dark side of team incentives: Experimental evidence on advice quality from financial service professionals

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ABSTRACT

In an experiment with professionals from the financial services sector, we investigate the impact of a team incentive scheme on the recommendation quality of investment products when advisors benefit from advising lower quality products. Experimental results reveal that, when group affiliation is strong, inferior products are recommended significantly more often under team incentives than under individual incentives.

1. Introduction

Consumers often have to rely on experts' advice when making investment decisions, especially in the presence of strong informational asymmetries, a lack of expertise, and uncertainty about future profits. However, in the wake of the recent financial crisis, claims have been made that financial advisors mislead private investors about the riskiness of products, inducing investments in inferior financial assets. Indeed, in their professional routine, financial service experts constantly face the dilemma of how to balance their own interests with those of their customers. Several experimental studies have shown that broadly suggested disclosure of conflict of interest does not necessarily help to reduce the misadvising problem (Cain et al., 2005, 2011; Ismayilov and Potters, 2013). Therefore, further search for effective mechanisms for solving this problem is still required.

The impact of monetary profit on misadvising, as well as misreporting, has recently gained increasing interest and is often seen as one of the important drivers of unethical behavior (Gneezy, 2005; Inderst and Ottaviani, 2009; Sutter, 2009;

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Popova, 2010; Gibson et al., 2013; Angelova and Regner, 2013; Gneezy et al., 2013). It has been shown that not only the size of a monetary incentive itself is relevant for unethical behavior but also the type of the incentive scheme (Schweitzer et al., 2004; Denis et al., 2006; Ordonez et al., 2009; Cadsby et al., 2010; Conrads et al., 2013). For example, Cadsby et al. (2010) find experimental evidence that performance is over reported more often under target-based incentive schemes than under piece rate or tournament schemes. Denis et al. (2006) find a positive correlation between the likelihood of stock manipulation fraud and intensity of option-based compensation of CEOs. In a recent experiment, where Conrads et al. (2013) employed the dice-rolling game of Fischbacher and Heusi (2013), students lied significantly more often when team incentives were offered. However, in this experiment, lies had no negative impact on any other subject but raised the costs for the experimenter.

Even if the advisors may not be focused purely on their narrow personal interest, they may still be tempted to adjust their recommendations to benefit their team or the financial institution they work for. They may do this, for instance, because of strong team identification or loyalty to the employer at the expense of their customers' interests. Thus, advice from potentially biased experts might lead to sub-optimal investment decisions, particularly when their monetary incentives are tied to the short-term goals of the financial institution rather than their customers' interests.

In general, the effect of team incentives on potential misadvising may be twofold: On the one hand, a simple economic model would predict that misadvising is less prominent under a team bonus, as the individual marginal monetary benefit from misadvising is smaller, and a free-rider problem occurs as demonstrated by Holmstrom (1982). However, recent research indicates that the underlying mechanism of cheating under team incentives cannot be explained by purely economic considerations. For example, several experimental studies have pointed out that splitting the benefits with another person increases the likelihood of cheating (Gino and Pierce, 2010; Wiltermuth, 2011; Conrads et al., 2013; Gino et al., 2013). In this way, Conrads et al. (2013) observed that lying in teams is partially driven by the opportunity to hide individual misdeeds. Gino et al. (2009) showed that corrupt social norms may serve as a trigger of unethical behavior in teams.

The key research question of this paper is how a team or an individual incentive scheme affects advice quality, and whether the effects are moderated by the strength of the relationship between team associates. Mazar et al. (2008) demonstrated that a desire to keep a positive self-image facilitates deception. Considering our research question, team incentives may provide a justification for dishonest acts by means of, e.g., "*helping the team members*" which reduces the perceived immorality of the self. In this case, team incentives may help to reduce the perceived moral costs of dishonesty toward customers and increase the delivery of bad advice. The justification of dishonesty for team benefit may be easier especially when the relationship between the team members is strong. Therefore, we hypothesize that the detrimental effect of team incentives is moderated by the strength of the relationship among team members. To the best of our knowledge, very little research has been conducted on individual closeness and misbehavior. Gino and Pierce (2010) observed a positive effect of feeling empathy with others in helping them out by lying, whereas Wiltermuth (2011) found no significant effect of experimental matching with either a friend or a stranger on misreporting. However, investigating how closeness among individuals alters the likelihood of engaging in dishonest behavior remains of great importance, as human decisions are often made in social environments where actors have strong social ties. Therefore, in our experiment we focus on the disadvantages of team incentives among individuals with different degrees of group affiliation.

We address this question by implementing a simple sender-receiver game, in which advisors, represented by financial sector professionals who took part in training, recommended an investment product to customers. Each customer, represented by a student participant, decided whether or not to buy the recommended product. Customers were not informed about the product's features and as participants interacted only once, the products were pure credence goods (Darby and Karni, 1973; Dulleck and Kerschbamer, 2006). The advisors, however, were informed about the revenue distribution and the size of the commission rate attributed to each product. The product quality in our setting was operationalized by high expected return and low risk, and was inversely related to the size of the commission rate paid to the advisor. In particular, we compared the quality of the recommended products under an individual commission rate and a team bonus payment. For the latter, the commissions of three advisors were paid into a team account, which then was evenly distributed among its members. Additionally, we used the difference in the amount of time spent in the joint training seminars as a natural variation of subjects' closeness.

Both product design and incentive schemes are derived from common situations in the financial advisory business. Being financial professionals, advisors are confronted with very similar situations in their day-to-day business where they can typically choose from a set of products with different commission rates, returns on investment, and risk. Furthermore, retail bankers' compensation schemes often combine components of individual and group commissions. We thus believe that conducting this experiment with financial service professionals employs a useful social framing that adds to the external validity of the experiment (e.g., Carpenter et al., 2005).

Our main finding is that, compared to individual incentive schemes, advisors who were strongly affiliated with fellow team members recommended lower quality products when facing team incentives. However, we did not observe any difference in recommendation quality between treatments when relationship strength was weak.

The remainder of this paper is organized as follows. In Section 2 we describe the experimental design and procedure. Section 3 presents the results and the last section concludes.

Table 1
Payoffs from different investment products used in the experiment.

Recommendation quality	Commission rate (in €)	Customer's revenue (in €)			
		Minimum	Maximum	Expected value	Standard deviation
1	9	0	16	8	4.90
2	8	2	14	8	3.74
3	7	6	14	10	2.58
4	6	8	12	10	1.41
5	5	10	14	12	1.41
6	4	12	12	12	0.00

Note: The products were shown to advisors in the following order by recommendation quality: 1, 5, 6, 2, 3, and 4. Recommendation quality, expected customer value, and standard deviation were not presented to the advisors, but could be easily inferred from the experimental instructions.

2. Experiment

2.1. Design

In this one-shot experiment we investigated a simple sender-receiver game in which one player (henceforth referred to as *advisor*) has private information about six different payoff allocations for himself and his counterpart (henceforth *customer*). In the experimental instructions, we named these payoff allocations as *investment products*. Each of the products brings a commission rate to the advisor and a stochastic return to the customer. The advisor's commission rate corresponds to a fixed amount of money and is presented in column 2 of Table 1. The customer's return on investment is drawn from a uniform distribution on the integer values from a predetermined range defined by columns 3 and 4. Columns 5 and 6 report the expected value and standard deviation of customer revenue, but they were not presented to the subjects. As can be seen from Table 1, the products are designed such that higher commission rates are paid for lower product qualities, as measured by the customer's expected payoff and its volatility. For instance, the customer's payoff of the worst product is drawn from the set {0, 1, 2, . . ., 15, 16} and brings the advisor a commission of €9. The second-worst product brings the customer a random amount from the set {2, 3, 4, . . ., 14}, whereas the advisor receives €8. The best product pays the customer €12 for certain, but only €4 to the advisor. As products are monotonically ranked for any customer who prefers higher returns and lower uncertainty, we use the product's inverse rank as a measure of recommendation quality – hence, this quality measure of the worst product is equal to 1, and that of the best product is equal to 6.

The customer has no information on his and his advisor's payoffs from any investment. He knows only that his earnings range from 0 to €16. The advisor, on the other hand, knows the exact distribution of the revenues and the size of the commission rate for each investment product. His task is to recommend one of these six products to the customer. After learning the advisor's recommendation, the customer can pick either of the products or an outside option that brings him €5, and €2.50 to the advisor. Thus, the earnings from the investment depend only on the customer's choice and payoff realization, but not on the advisor's message.

Two experimental treatments were designed by changing the incentive scheme. In both treatments, each advisor interacts with one customer. In the *Individual Commission* treatment, the advisor himself receives the commission rate associated with the product chosen by his or her customer. In the *Group Commission* treatment, advisors are randomly and anonymously allocated into groups of three, and their earned commissions are summed up and split among all three group members equally.

2.2. Procedure

The experiment was conducted between February and November 2011. Subjects who were assigned the role of advisor ($N = 94$, 9.6% female) were participants of a management seminar[1] for executives from cooperative German banks at the Academy of German Cooperatives ADG[2] in Montabaur, Germany. The experiment was conducted during the seminar and participation was voluntary.[3]

An experimenter who had not met any of the subjects before ran the experiment. The participants sat in one large room and each subject had a seat at an isolated workplace. They received experimental instructions with exact information about their role, task, and possible payoffs. Furthermore, through the instructions they were explicitly informed that their recommendation would have been sent to participants recruited at the Cologne Laboratory for Experimental Research, who were assigned the role of customers.

[1] Successful participation at the management seminar legitimates an executive to become chief executive officer of a cooperative bank, according to German Kreditwesengesetz (§33 KWG).
[2] More information about the Academy of German Cooperatives can be found under http://www.adg-international.com/adg_international/.
[3] All seminar participants decided to take part in the experiment.

Within each session, the subjects were randomly allocated to the *Group Commission* or *Individual Commission* treatments. Under the *Group Commission* treatment the subjects did not know the identities of the two other group members with whom they were matched. However, they knew that their experimental partners were from the same training group and were present in the same room during the experiment.

No communication was allowed during the experiment. After all the decisions were made, the subjects were asked to answer a questionnaire, including measures of group identity (Aron et al., 1992; Shamir and Kark, 2004) and Big Five personality traits (Rammstedt and John, 2007). They were also informed that the process of decision making and payment was anonymous and that payment would be carried out in cash two days later at the end of the seminar module. The average payoff to advisors was €5.36.

Subjects in the role of customers ($N = 105$)[4] were students from the University of Cologne and were recruited via ORSEE (Greiner, 2004). They participated in the experiment online and could either receive their experimental earnings via *PayPal* or pick them up in cash in the laboratory. The average payoff to customers was €8.97.

Each participant took part in the experiment only once.

2.3. Experimental manipulation

As described above, subjects in the role of advisors were financial professionals who participated in the executive seminar. The seminar consisted of 14 modules, each with five days of training. These modules spanned a period of 10 months. The participants did not know each other before the management seminar, as they came from different retail banking companies, branches, locations, and divisions. They were randomly assigned to the training groups and remained within the same class for all 14 modules.

We were interested mainly in the effect of team incentives on misadvising under different degrees of team affiliation. As mentioned above, we used the training duration as a natural variation of group affiliation. For this purpose, we ran two out of four experimental sessions with seminar groups from the third module (henceforth called *loose affiliates*, $N = 49$). These participants barely knew each other at the time of the experiment, as they had been spending only a few seminar days together and studying individually, rather than in groups. Thus, we expected these subjects not to be in a close relationship with each other and to be scarcely able to identify themselves with their training group.

Two other sessions were run with different participants attending the last seminar module in the 14th week ($N = 45$). These subjects had completed 14 weeks of training within the same group and had participated in numerous team activities. Therefore, we expected them to know each other well and strongly identify themselves with their training group. Accordingly, we assume that social ties between these subjects were stronger than those among the *loose affiliates*. Therefore, we refer to this subject sample as *close affiliates*. It is important to note that we randomly assigned participants to a compensation scheme within each session, but the assignment of team affiliation is necessarily non-random. Hence, our analysis focuses on a comparison between the two incentive schemes for each of the two degrees of *affiliation*.

To test whether the variation of time spent jointly in the course indeed captures group affiliation we used the Inclusion of Others in the Self (IOS) scale developed by Aron et al. (1992) as a post-experimental manipulation check. The IOS scale is broadly used in social psychology as a measure of the subjective sense of closeness, and in organizational research as a measure of organizational identification. This single item measure entails high test-retest reliability and discriminant validity. It consists of seven Venn-like diagrams with seven representations of different degrees of overlap of two circles, one of them representing the respondent's self and another representing the training group. Respectively, two circles that do not have any common intersection indicate the absence of closeness with other training participants (1 'do not identify myself with the training group at all'), and two completely overlapping circles correspond to the closest possible relationship between an individual and his or her classmates (7 'identify myself completely with the training group'). After the experiment, participants were asked to indicate one of the seven circle combinations that would most accurately describe their relationship with the training group.

3. Results

3.1. Manipulation check: Effect of training on group affiliation

As described in the previous section, we varied two dimensions in our experimental design: the incentive scheme and the number of training modules that subjects had attended together before the experiment.

We claim that at the end of the 14 weeks training the perceived interpersonal relationship between peers was closer, as they had become better acquainted with each other by interacting during the training. Consistent with our prediction, participants in the *close affiliation* condition reported stronger group identification (M = 5.13, SD = 1.01) than those in the *loose affiliation* condition (M = 4.67, SD = 1.07). This difference is significant ($z = -1.946$, $p = 0.0516$, two-sided Mann–Whitney U test).[5]

[4] Including 11 replacement subjects.

[5] The difference is significant at the 5% level if testing with the t test: $t(94) = -2.1366$, $p < 0.05$.

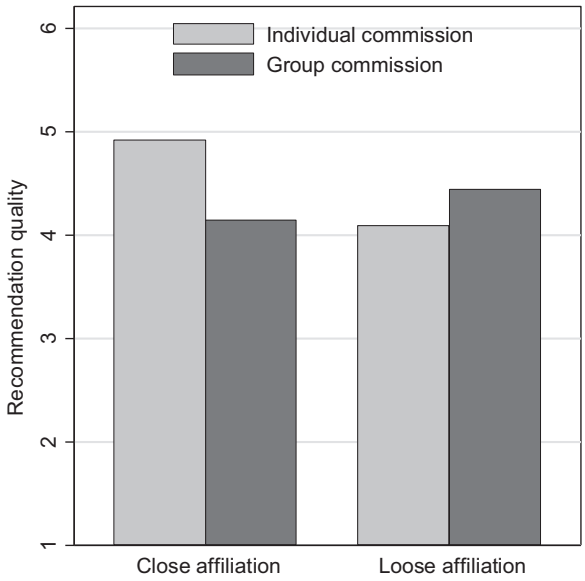

Fig. 1. Average recommendation quality.
Note: Recommendation quality ranges from 1 to 6, with higher numbers indicating better quality.

We thus conclude that in our experiment the duration of the joint experience indeed has a significant impact on the interpersonal closeness of the subjects with their classmates.

3.2. Effect of incentive scheme on recommendation quality

We examine recommendation quality measured by the number assigned to the respective product (1 for the worst and 6 for the best product). Since we can make clean treatment comparisons solely between team and individual incentives within a given level of affiliation, we focus mainly on the comparison of *close* (*loose*) *affiliates* between the *Group Commission* and *Individual Commission* treatments. The main result of our study is summarized in Fig. 1. The average recommendation quality of *close affiliates* was significantly lower when they received team incentives (M = 4.14, SD = 1.35) than in the case of individual incentives (M = 4.92, SD = 0.97, $z = 1.986$, $p = 0.0471$, two-sided MWU test).[6] However, the recommendations of advisors from the *loose affiliation* group do not significantly differ between *Group Commission* (M = 4.44, SD = 1.25) and *Individual Commission* treatments (M = 4.09, SD = 1.57, $z = -0.654$, $p = 0.5130$, two-sided MWU test).

Overall, the above non-parametric analysis suggests that team incentives induce lower recommendation quality among advisors with close affiliation. We summarize these findings as follows:

RESULT 1. *When affiliation between financial advisors is close, they recommend products of significantly lower quality if they receive team incentives compared to individual incentives. However, among loosely affiliated advisors there is no significant difference in recommendation quality for these two incentive schemes.*

Interestingly, *closely affiliated* advisors recommended better products under the individual incentive scheme than *loosely affiliated* advisors ($z = 1.765$, $p = 0.0775$, two-sided MWU test). The explorative nature of this finding does not allow us to claim causality, i.e., detrimental effects of group affiliation under individual incentives. A potential interpretation of this result is that too much "greed" under individual incentives may reduce group reputation or cultivate a bad image in front of teammates. These concerns may be internalized to a greater extent under close affiliation, especially when they are not counteracted by monetary team benefit.

3.3. Regression analysis

We also estimate a number of ordered probit regression models with robust standard errors and session clusters, reported in Table 2. The dependent variable is recommendation quality, whereas the main exogenous variable of interest is the dummy

[6] As the advisors were asked to recommend one out of six products, we consider the propensity of strategically good recommendation aiming to direct the customer toward less optimal products as low (Sutter, 2009). Indeed, 91.4% of advisors expected customers to follow their recommendations. Only two out of nine subjects, who did not expect the customers to follow their advice, chose the best product. As for the customers, only 63.8% chose the recommended product. 16.2% chose the outside option, and 20% a different product. There is no significant difference in customer's choice between the *Individual Commission* and *Group Commission* treatments.

Table 2
Ordered probit regression results.

Dependent variable: Recommendation quality 1 = low, 6 = high	(1)	(2)	(3)
Group commission	0.27	0.29	0.33
	(0.28)	(0.19)	(0.40)
Close affiliation	0.65*	0.70**	0.71
	(0.33)	(0.35)	(0.46)
Group commission * Close affiliation	−0.87***	−0.99***	−1.00**
	(0.23)	(0.18)	(0.40)
Female		−0.49	−0.54
		(0.46)	(0.38)
Age		0.00	0.01
		(0.01)	(0.01)
Conscientiousness		0.19***	0.21***
		(0.05)	(0.05)
Extroversion			0.03
			(0.14)
Neuroticism			−0.09*
			(0.05)
Openness			0.04
			(0.04)
Agreeableness			−0.10
			(0.07)
Observations	94	93	92

Note: Data clustered on sessions. Robust standard errors reported in parentheses. The reference group is *Loose Affiliation Group Commission*.
* Significant at the 10 percent level.
** Significant at the 5 percent level.
*** Significant at the 1 percent level.

for the incentive scheme and interaction variable *Group Commission * Close Affiliation*. As we see from model 1 the group commission has no significant impact on recommendation quality among *loose affiliates*. However, among *close affiliates* team incentives induce significantly lower recommendation quality ($p < 0.01$).

Apart from incentive schemes and group affiliation, individual characteristics can also influence the subjects' propensity to engage in unethical behavior (O'Fallon and Butterfield, 2005; Treviño et al., 2006). In the next step, we include gender, age, and the Big Five personality dimensions in our regression analysis.[7] The coefficients for gender and age are not significant. However, the regression results point out the relevance of personality for moral behavior. As model 2 shows, participants scoring high on the personality trait *Conscientiousness* recommend significantly better products ($p < 0.01$). *Conscientiousness* is considered to reflect dependability, dutifulness, order, self-discipline, and competence, and can induce more honest decisions, resulting in better recommendations (i.e., Digman, 1990). Indeed, previous studies have found a positive correlation between conscientiousness and moral behavior (i.e., Salgado, 2002; Hogan and Ones, 1997; Murphy and Lee, 1994). In model 3 we add control variables for the remaining Big Five dimensions. The previous results remain unchanged. Additionally, we find a weakly negative effect of *Neuroticism* on recommendation quality. This finding is in line with Conrads et al. (2013). Although the impact of personality traits on recommendation quality is not the key focus of this paper, this result underlines the validity of our data. We summarize Result 2:

RESULT 2. *More conscientious or less neurotic subjects recommend higher quality products.*

4. Concluding remarks

A potential negative impact of individual incentive schemes, such as relative performance pay or target-based incentives, on ethical behavior has been broadly discussed in economics and management research (i.e., Schweitzer et al., 2004; Denis et al., 2006; Ordonez et al., 2009; Cadsby et al., 2010). Moreover, some recent studies (e.g., Conrads et al., 2013) have indicated that team incentives may induce lying. Our results show that team incentives can induce a lower recommendation quality for credence goods by professional financial service advisors when they are from a sample with closer social ties. In the experiment, retail banking professionals were asked to recommend one out of six investment products to customers. Here, advisors had the opportunity to reap material benefits by recommending financially unattractive products to customers. We find that group incentives lead to lower recommendation quality when the group affiliation is strong. As close affiliation between team members is what we encounter in real-world organizations, where group bonuses are paid to team members who typically work together over long time horizons, this problem is particularly relevant. Our results indicate that under close group affiliation, individual incentives may be beneficial to induce more honest behavior, potentially because the selfish nature of distorted advice is more obvious and may raise the individual costs of lying.

[7] The Big Five personality traits are measured with a 10-item scale (2-items per each trait) as suggested by Rammstedt and John (2007). Each value ranges from 0 to 8, where 8 indicates the intensity of the personality trait.

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Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at http://dx.doi.org/10.1016/j.jebo.2013.03.012.

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