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Do Managers Reciprocate? Field Experimental Evidence From a Competitive Market

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Abstract

A substantive amount of lab experimental evidence suggests that the norm of reciprocity has important economic consequences. However, it is unclear whether the norm of reciprocity survives in a natural and competitive environment with experienced agents. For this purpose we analyze data from a natural field experiment conducted with sales representatives who were instructed to randomly distribute product samples as gifts to their business partners. We find that distributing gifts to store managers boosts sales revenue substantially, which is consistent with the notion of reciprocity. However, the results underline that the nature of the relationship between market participants crucially affects the prevalence of reciprocal behavior.

1 Introduction

According to the norm of reciprocity people should respond to favorable treatment likewise. A great amount of evidence has been gathered in lab experiments indicating that many subjects behave consistently according to this rule. Scholars propagate that reciprocity plays a crucial role in sustaining provisions to public goods (see Fehr and Gächter (2000a)), in facilitating the enforcement of incomplete contracts (see Fehr et al. (1997)) and in the design of performance incentives (see Irlenbusch and Sliwka (2005) and Fehr et al. (2007)). Moreover, reciprocal motivations are often held responsible for downward wage rigidity and involuntary unemployment (see Akerlof (1982) or Bewley (1999)). Despite these important micro- and macroeconomic consequences the prevalence of social preferences in *naturally* occurring competitive markets remains largely unexplored.[1] Empirical evidence from such markets is important because the presumption that competition crowds out pro-social behavior is prevalent among economists.[2]

In the present study we investigate whether the norm of reciprocity survives in a natural and competitive environment with experienced agents. For this purpose we analyze data from a natural field experiment[3] conducted in a competitive business-to-business context. We advise sales representatives ("the sellers") from a Swiss subsidiary of a large multinational consumer products firm to randomly distribute product samples as gifts to their business partners ("the buyers") and record their sales performance.

Our field experiment contributes to the literature in several ways. First, buyers do not know they are taking part in an experiment. Hence, their behavior is unaffected by the experimenter demand effect which is potentially present in lab experiments. Moreover, the design is integrated into the daily routine of the sellers and therefore allows them to behave naturally. Second, in contrast to the usual student subject pool, the buyers are experienced market participants who should be acquainted with the commonly used persuasion methods in the sales business.[4] Third, the market is highly competitive due to its saturation. This business-to-business context should leave little room for social preferences

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[1]A series of laboratory experiments study the relation between competition and social preferences. Some studies find that competition weakens the importance of social preferences on outcomes (e.g. Fischbacher et al. (2003), Carpenter (2005)), others find robust effects (e.g. Fehr et al. (1998)). To the best of our knowledge List (2006) performed the only natural field experiment studying reciprocity in a competitive environment.

[2]E.g. see the discussions in Stigler (1981) and Bowles (1998).

[3]According to the taxonomy of Harrison and List (2004) a natural field experiment is an experiment "...where the environment is one where the subjects naturally undertake these tasks and where the subjects do not know that they are in an experiment (p. 1014)."

[4]See Williams et al. (2004) for evidence that knowledge of persuasive intentions can reduce the susceptibility to persuasion.

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and consequently allows for a conservative test of the economic importance of reciprocity in natural markets.

The results are clear-cut, notwithstanding the conservative setting. We observe that the distribution of gifts helps in boosting sales revenue significantly. Distributing a gift at the beginning of the negotiations with the store manager increases sales revenue by on average more than 340 percent. From the seller's viewpoint gift giving increases the efficiency of her negotiations. Our results therefore corroborate previous lab experimental results on reciprocity. However, we also find that the occurrence of reciprocity is conditional on environmental factors. Surprisingly, there is no indication for positive reciprocal behavior if buyers and sellers interact for the first time.

The rest of this paper is structured as follows. Section 2 describes how the topic of this paper relates to existing literature. In Section 3 we present the experimental design and provide further background information. The experimental results are reported in Section 4. In Section 5 we conclude with a discussion of the results.

2   Related Literature

The bottom line of various lab experiments is that a non-negligible fraction of people reciprocate positively and negatively to friendly or hostile actions from other individuals even if reciprocating is costly (see Fehr and Gächter (2000b) for a survey). Fehr et al. (1997) argue that neglecting these reciprocal "...motives may lead to wrong predictions and to wrong normative inferences (p. 833)". Several models have been proposed to incorporate reciprocal motivations (see Sobel (2005) for a survey). Natural field experiments in the labor market have thus far provided only weak evidence for positive reciprocity in the wage-effort relationship (see Gneezy and List (2006), Kube et al. (2006), Al-Ubaydli et al. (2006) and Hennig-Schmidt et al. (2005)).[5] List (2006) compares the behavior of the same population of sports-cards traders in both the lab and the field. He discovers a positive correlation between offered prices and product quality in the lab. However, this link does not survive the step from the lab into the field when quality cannot be verified. Levitt and List (2006) argue in their general review on the relation between field and lab experiments that "the lack of congruence between moral and wealth-maximizing actions can lead laboratory experiments to yield quantitative insights that may not be readily extrapolated to the outside

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[5] However, Kube et al. (2006) show that wage-cuts can have strong and long lasting negative effects on workers' productivity. Bellemare and Shearer (2007) find significant short run positive reciprocity in an experiment conducted within a tree planting firm.

world (p. 29)". Our paper addresses this issue and tests for positive reciprocity in a competitive market with experienced market participants.

The distribution of free samples is a common practice among marketing practitioners (e.g. see Cialdini (1985) or *Brandweek* (1995)). However, experimental evidence as to the economic importance of these gifts is astonishingly meager (Bawa and Shoemaker (2004)). Moreover, the prevailing focus lays on familiarization with the product and the learning effect associated with the trial of the samples.[6] In our experiment, sales are made on the spot and leave the buyer no time for sampling the gift. Therefore we can sidestep learning effects.

Finally, recent field experimental studies analyze social preferences in *non-market contexts*.[7] The setting most similar to this is that of Falk (forthcoming), who finds that enclosing gifts in solicitation letters provokes reciprocal behavior in donors and therefore increases the frequency of charitable giving. In contrast to most previous field experimental studies on social preferences this paper goes beyond the non-market environment and focuses on a competitive setting.

3 Experimental Setup

The aim of this experiment is to identify the effect of gift giving in a natural market. This section describes the background, the experimental design and the behavioral predictions.

Background

The firm involved in our field experiment is a Swiss subsidiary of a multinational consumer products producer. It operates in a saturated market that is characterized by a high degree of competition and eroding profit margins. We collaborated with a local office consisting of five field sales representatives ("the sellers"). Three sellers are males and two sellers are females. All have profound work experience in the sales business. They work in different regions, covering the Swiss market. Sellers receive a fixed wage without any explicit performance incentives. Their customers ("the buyers") are retail shops, ranging from small independent stores to branches of large retail chains. Depending on the subjec-

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[6]Scott (1976), Steinberg and Yalch (1978) and Lammers (1991) provide field evidence concerning the impact of free samples on purchasing behavior. In one of the rare field experiments focusing on reciprocity in the business to consumer context Strohmetz et al. (2002) find that distributing a small piece of chocolate with the check significantly increased the tips given to the servers in a restaurant.

[7]See List and Lucking-Reiley (2002), Frey and Meier (2004), Shang and Croson (2005), Eckel and Grossman (2005) and Landry et al. (2006).

tively assessed importance, buyers are ranked into five categories (A, B, C, D and E) by the firm.

At the design stage of the field experiment we questioned the sellers about their sales strategies and routine. They regularly visit the buyers to present new offers and special promotions. The order of customer visits is determined by geographical proximity. They usually drop in without prior notice and try to address the manager of the retail store. In case the manager is not present, they speak to another member of staff. Often the sellers know the buyers personally but occasionally they encounter a buyer for the first time. The sellers are equipped with a sales booklet containing about three to five offers of different products. If a buyer wants a product, the sellers take the order using the forms in their sales booklet. Sales meetings last an average of approximately ten minutes.

With regard to our research question we were particularly interested in one aspect of sales strategies, namely the usage of gifts. It turned out that all sellers distributed product samples in past business negotiations. However, gifts were used infrequently and most importantly, they were mainly handed over *after* a deal. Buyers thus should not expect to receive a gift at the beginning of a sales meeting.

Design

Two weeks before the experiment started, the sellers attended a briefing led by one of the authors. They were informed about the fact that we intended to conduct a scientific experiment but they were not informed about our hypotheses. The sellers were instructed not to tell the buyers that this was an experiment. We clearly stated that the data would not be used for individual sales performance comparisons and that all data would be anonymized.

After a short introduction into the experiment and time schedule the experimental procedures were set out: The main treatment (*Gift*) and the control treatment (*No Gift*) were allocated such that every seller had to distribute a gift in roughly 50 percent of her sales meetings. The gifts had to be handed over as a "free sample" right at the *beginning* of the sales meeting. Each seller received a folder containing a sheet for every sales meeting. A text box containing the instructions (i.e. depending on the current treatment, whether they should distribute a gift or not) was placed at the upper part of each sheet. The order of the different sheets in each seller's folder was randomly assigned in advance. Sellers were told to work through the folder sheet by sheet without alternating the order. Concerning the sales pitch wording the sellers were instructed to use their usual sales strategy and, especially, to keep it constant across treatments. We purposely did not restrict the sellers' behavior by using a fixed protocol so as

to keep the situation as natural as possible.[8] All sellers were equipped with sales booklets containing five offers and sold the same products.[9]

The gift was a sample of the firm's products. It contained six tubes of toothpaste with a total cost of 10 Swiss francs (about 7.7 US Dollars), which is slightly more than the costs of gifts used in the past. The reason for choosing a product sample was that it makes the treatment variation unsuspicious. The customer would certainly have perceived a cash offering or some unrelated product in a different way. Furthermore, we wanted to use a gender-neutral gift.

In addition to the treatment instructions, the sheets also contained a questionnaire, which provides additional data for our analysis. The sellers were asked to fill out the first half of the questionnaire before the sales meetings and the other half of the questionnaire immediately afterwards. The first half contained questions about (i) the customer category (*Category A, B, C, D or F*), and (ii) whether the buyer was visited for the first time (*Firstvisit*). Right after the sales meeting the sellers had to indicate (iii) the number of offers they were able to show to the buyer (*Offers shown*), (iv) the sales revenue they actually made for each of the five offers (*Sales Revenue*), (v) the duration of the sales meeting (*Duration*), and (vi) whether they negotiated with the store manager or not (*Manager*).[10]

The final part of the briefing consisted of a practical example. In order to acquaint all of the sellers with the procedures, each sellers was presented with a hypothetical sales meeting situation and had to fill out the questionnaire.

The sellers collected the data during the months of January and February 2006 and sent it to the authors. They were identified by a code, keeping the anonymity of sources. In total we have observations from 220 sales meetings. 109 in the main treatment and 111 in the control treatment.

Behavioral Predictions

Should a consumer's decision to buy depend on whether he or she receives a gift or not? And if so, should the gift increase or decrease sales? If a buyer perceives the negotiation with the seller as a one-shot game then, under standard assumptions, there is no reason to take the receipt of the gift into consideration. Yet, it is also possible that the situation is perceived as a repeated game: Buyers could have a strategic incentive to buy more in order to increase the probability

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[8]Our regression analysis accounts for differences in selling style between the sellers by using individual fixed effects.

[9]We used several sets of sales booklets in order to test various modes of product presentation, which were primarily in the interest of the firm. However, it is important to note that our main treatment variation (*Gift*) and presentational variations were perfectly orthogonal.

[10]Table 8 in the Appendix provides the question wording for the above variables and for some further controls which might influence the outcome of the sales meetings.

of receiving a gift in the future.

However, due to past gift giving practices this kind of repeated game argument is valid for *both* treatments. In the *Gift* treatment a buyer aims to increase the probability of receiving a gift at the next visit. The fact that, from time to time, buyers received gifts *after* the deal implies that they also have a strategic incentive in treatment *No Gift*. Buying more might increase the probability of receiving a gift right after the deal. Taken together, the incentive is even stronger in the *No Gift* treatment, since the gift is received immediately after the deal as opposed to somewhere in the future in case of treatment *Gift* (assuming that the buyers in the *Gift* treatment do not expect to receive another gift after the deal). Hence, under standard assumptions we would expect, if at all, a negative effect of the gift on sales revenue.

On the other hand, there is now ample lab evidence demonstrating the importance of reciprocal behavior in gift-exchange situations (see Fehr and Gächter (2000*b*)). Receiving a gift from a seller is presumably perceived as a kind action. In reaction, a reciprocally motivated buyer would be inclined to buy more. The notion of reciprocity therefore predicts a positive correlation between gift giving and sales revenues. We expect that reciprocal motivations will tempt the buyer to return the favor when they receive a gift and predict a positive treatment effect, i.e., sales revenue will be higher in the *Gift* treatment than in the *No Gift* treatment.

4 Results

The results are presented in three steps. First, we outline the empirical strategy. In a second step after assessing the impact of gift giving on attention, we test whether buyers reciprocate positively upon receiving a gift. And third, we provide some evidence illustrating the relevance of contextual factors for the prevalence of reciprocal behavior.

Empirical Strategy

We assess whether observable covariates are statistically similar across treatments using Pearson's χ^2 tests for binary control variables and a Wilcoxon rank-sum test for non-binary control variables (see Table 5 in the Appendix). With the exception of *Category E* we cannot reject the null hypothesis that control variables are balanced between treatments based on conventional significance levels. Alternatively, we estimated a Logit model with treatment status as a dependent variable and all controls as explanatory variables. None of the coefficients are significantly different from zero and joint insignificance of all coefficients cannot

be rejected (LR $\chi^2(16) = 15.03$, $p = 0.552$). In summary, the randomization resulted in a fairly well balanced set of buyers in the two treatment conditions.

All of our regression models are estimated using Ordinary Least Squares (OLS). The baseline model for the preceding analysis takes the following linear form:

$$Y = \alpha + \beta * Gift + \gamma * X + \delta * Seller + \epsilon,$$

where Y is either the total sales revenue or the number of offers sold per meeting[11] and $Gift$ is the binary treatment variable. In that the error term ϵ is potentially correlated within sellers, we include dummies for *Seller 1* to *Seller 4*. In addition to taking care of the nonstandard error term, these seller fixed effects capture differences in selling style and past gift giving practices. We alternatively estimated all models using Generalized Least Squares (GLS) with random effects specification of the error term. The results reported below are not sensitive to this manipulation. Similarly, the main results are qualitatively robust to a Tobit specification with bottom censoring at zero sales revenue (see Tables 6 and 7 in the Appendix).

The variable *Category E* is included in all regression models as a control variable X in order to account for the condition that this variable is not perfectly balanced between treatments. Managers have potentially more authority to make acquisition decisions than regular employees do. In order to allow for different reactions to the gift between managers and regular employees we extend the baseline model by including a *Gift*Manager* interaction term.

To Give and Take

Starting a sales meeting with a gift could affect buyers' behavior in several ways. First, it could simply buy time. The average duration of a sales meeting is nine minutes in the *No Gift* treatment and ten minutes in the *Gift* treatment. Given that the act of handing over the gift is also time consuming, the net increase in attention seems negligible.

A second measure for the buyers' attention is the number of offers a seller is able to present (variable *Offers shown*). The sales booklet contained five offers. The average number of offers shown is 3.79 in the *No Gift* treatment and 4.16 in the *Gift* treatment state. In Model (1) of Table 1 we regress *Offers shown* on
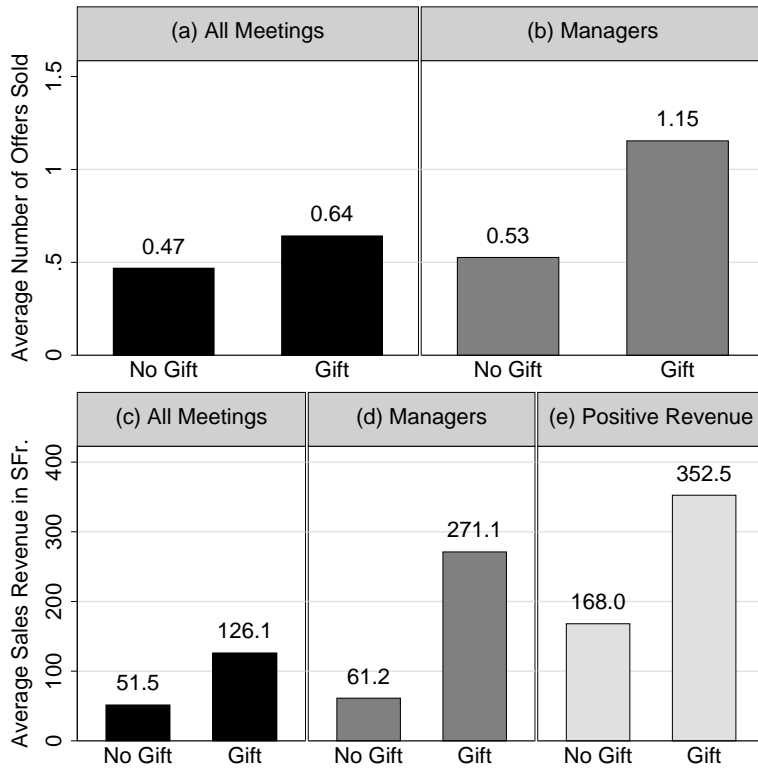
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[11]The number of offers sold is defined as the number of offers from which at least one unit was sold during sales meeting. As the sales booklets contain 5 offers, this variable can take values from 0 to 5.

the treatment dummy and the controls. The treatment variation does not significantly explain the increase in *Offers shown*. In Model (2) we allow for differences in the reaction to the gift between managers and regular staff (*Gift*Manager*). The effect of the gift is augmented if the seller talks to a manager but the difference is not significant. Managers consider significantly less offers than regular workers.

In a next step we concentrate on the number of offers sold. Panels (a) and (b) in Figure 1 illustrate the influence of the gift on the average number of offers sold per visit. In the full sample (Panel a) the gift has only a marginal impact on the number of offers sold. However, among the managers the effect turns out to be sizeable. The number of offers sold more than doubles from 0.53 offers on average in the *No Gift* treatment to 1.15 in the *Gift* treatment (see Panel b).

Figure 1: Reciprocity, Offers Sold and Revenue

The regressions explaining the variable *Offers sold* (Models (3) and (4) of Table 1) underscore these results statistically. In Model (3) the coefficient of *Gift* has the expected positive sign but it is far from significance. Model (4) tests for differences between managers and regular employees. *Gift*Manager* is

large and significant from an economic and statistical point of view ($p < 0.05$). The observation that managers react to the gift but regular employees do not is quite plausible if one considers that managers have generally more authority in decision-making. Furthermore, regular employees may not be allowed to keep the gift themselves.

Result 1: *On average managers accept more offers in the* Gift *treatment than in the* No Gift *treatment.*

Table 1: OLS Regression Results: Attention and Offers Sold

	Offers Shown		Offers Sold	
	(1)	(2)	(3)	(4)
Gift	0.284	0.187	0.112	-0.084
	(0.182)	(0.206)	(0.116)	(0.118)
*Gift*Manager*		0.292		0.574**
		(0.411)		(0.261)
Manager		-0.702**		0.099
		(0.284)		(0.158)
Seller FE?	YES	YES	YES	YES
Controls?	YES	YES	YES	YES
Obs.	220	220	220	220
Prob> F	0.000	0.000	0.000	0.000

Note: This table reports OLS coefficient estimates (robust standard errors in parentheses). Significance levels are denoted as follows: * p<0.1, ** p<0.05, and *** p<0.01. The dependent variable is the number of offers sold in each of the negotiations. *Category E* is included in the set of control variables for all reported models.

So far we have shown that the gift has no dramatic effect on attention but increases the number of offers sold to managers. However, the ultimately relevant measure for assessing the success of the gift is yet missing. Our hypothesis is that sales revenues are higher in treatment *Gift* compared to *No Gift*. Panel (c) of Figure 1 shows that this is clearly the case. Sellers more than double their revenue by handing out a gift. All but one seller achieved a higher sales revenue in treatment *Gift* than in *No Gift*. A conservative Wilcoxon signed-rank test using differences between the sellers' averages in both treatments as observations rejects the null hypothesis that each seller has an equal sales revenue in *Gift* and *No Gift* (one sided *p*-value: $p = 0.040, N = 5$).

Panel (d) shows that the treatment effect is even more pronounced if sellers negotiate with store managers: sales revenue increases on average by more than 340 percent. A look at the sub-sample ($N = 143$) of meetings with regular employees (average sales revenue of 45.3 in *Gift* and 46.4 Swiss Francs in *No Gift*) suggests that the treatment effect in the total sample is entirely driven by the

managers. This point can also be inferred from Models (1) and (2) of Table 2, where we explain sales revenue by the treatment variable and usual controls. The coefficient is large and significant for *Gift*, but becomes statistically indistinguishable from zero as soon as the *Gift*Manager* interaction term is included. *Gift*Manager* on the other hand is significant and large: presenting a gift to the manager increases sales revenue on average by 187 Swiss Francs (*Gift* and *Gift*Manager*).

Does the increase in sales revenue make it worthwhile for the firm to use the gift? In the whole sample revenue increases on average by 65 Swiss Francs due to the gift. Whether this makes the gift profitable or not depends on the firm's profit margin. Given the cost of 10 Swiss Francs for the gift, a profit margin as low as 16 percent would suffice to make the gift on average profitable. We do not have exact information about the profit margin, but according to personal communication with the firm we know that it surpasses this threshold. When dealing with a manager the coefficient estimates add up to 187 Swiss Francs. A profit margin of 5.4 percent would thus suffice for the firm to break even. Assuming a profit margin of 25 percent, the gift generates four times more profit than it costs. Moreover the lower bound of the 95 percent confidence interval for *Gift*Manager* is 28,9 Swiss Francs, which is well above the cost of the gift. Taken together, the results show that the gift increases the efficiency of sales meetings substantially.

Result 2: *The gift has a positive influence on sales revenue. The increase in generated revenue is large enough to make it worthwhile for the firm to use the gift. The effect is driven by the sales meetings with the managers, among whom the use of the gift is highly profitable.*

Is the increase in revenue solely driven by the fact that the gift increases the number of offers sold? Comparing revenue between treatments conditional on that at least one product was sold (see Panel (e) of Figure 1) reveals a substantial treatment effect. The regression results in Model (3) of Table 2 show that, compared to the *No Gift* treatment, revenue is on average 156 Swiss Francs higher in the *Gift* treatment given that sellers have made a deal.[12] Hence, the treatment effects in the unconditional sample are not exclusively driven by a higher sales probability in *Gift*.

As described at the beginning of this section gift giving slightly, though insignificantly, increases buyers' attention. Greater attention might be responsible for the observed treatment effects. *Offers shown* is included in Model (4) and

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[12]In Model (3) *Manager*, *Wholesaler 3* and *Male* are included as additional control variables as they are not perfectly balanced between treatments in the restricted sample, according to a Pearson's χ^2 test.

Table 2: OLS Regression Results: Sales Revenue

	Sales Revenue				
	(1)	(2)	(3)	(4)	(5)
Gift	65.097**	1.811	156.405**	59.794**	-3.116
	(30.147)	(17.268)	(76.258)	(28.773)	(17.837)
*Gift*Manager*		185.233**			177.522**
		(79.325)			(76.588)
Manager		19.763	119.607		38.285
		(24.866))	(101.896)		(27.612)
Offers shown				18.673**	26.374**
				(8.024)	(10.390)
Seller FE?	YES	YES	YES	YES	YES
Controls?	YES	YES	YES	YES	YES
Obs.	220	220	73	220	220
Prob> F	0.000	0.000	0.000	0.000	0.000

Note: This table reports OLS coefficient estimates (robust standard errors in parentheses). Significance levels are denoted as follows: * $p<0.1$, ** $p<0.05$, and *** $p<0.01$. The dependent variable is sales revenue in Swiss Francs achieved per negotiation. Model (3) is based on the sub-sample of observations with a positive revenue. *Category E* is included in the set of control variables for all reported models. In Model (3) *Manager*, *Wholesaler 3* and *Male* are included as additional control variables as they are not perfectly balanced between treatments in the restricted sample.

(5) of Table 2 in order to isolate the impact of the gift from attention effects. Although the coefficient of *Offers shown* is significant, the coefficient estimates for both, *Gift* and *Gift*Manager*, are robust to this specification. Hence, gifts influence the sellers' success independent of attention.

Result 3: *Conditional on that at least one product is sold the sellers obtain a substantially higher sales revenue in the* Gift *treatment than in the* No Gift *treatment. The effect of the gift remains strong when taking attention into account.*

The First Time

Sellers often know their customers personally from earlier visits. In some of the sales meetings they talk to buyers they do not know. Our questionnaire data allows us to distinguish between these two cases. Much to our surprise, the variable *Firstvisit* proves to be a very decisive factor in our treatment effect.

The gift is counterproductive and tends to *lower* sales revenue in situations ($N = 82$) where customers and sellers do not know each other: while the average revenue in the *No Gift* treatment is 23.5 Swiss Francs, it is only half the size in the *Gift* treatment (11.1 Swiss Francs). The regression results from Model (1)

Table 3: OLS Regression Results: The First Time

	Sales Revenue	
	(1)	(2)
Gift	123.780**	14.276
	(47.987)	(29.112)
*Gift*Firstvisit*	-145.937***	-26.737
	(49.566)	(30.910)
*Gift*Firstvisit*Manager*		-263.337**
		(118.661)
*Gift*Manager*		242.864**
		(103.345)
*Firstvisit*Manager*		29.220
		(49.638)
Firstvisit	-1.165	-11.957
	(33.029)	(28.368)
Manager		6.277
		(31.314)
Seller FE?	YES	YES
Controls?	YES	YES
Obs.	220	220
Prob> F	0.000	0.000

Note: This table reports OLS coefficient estimates (robust standard errors in parentheses). Significance levels are denoted as follows: * $p<0.1$, ** $p<0.05$, and *** $p<0.01$. The dependent variable is sales revenue in Swiss Francs achieved in each of the negotiations. *Category E* is included in the set of control variables.

in Table 3 demonstrate a similar picture: the coefficient of the *Gift*Firstvisit* interaction term is significantly negative. Adding up the coefficient estimates for *Gift* and *Gift*Firstvisit* yields a negative net gift exchange effect. However, the difference is statistically insignificant (Wald test: $F=1.92$, p=0.167).

Model (2) shows that, like above, the effect is mainly driven by the meetings with managers. The significant three-way interaction between *Gift*, *Firstvisit* and *Manager* suggests that the negative first-time effect is especially strong in sales meetings with managers.[13] Hence, customers do not buy more in the *Gift* treatment if they do not know the giver.[14]

Result 4: *The positive effect of the gift on sales revenue vanishes if sellers and buyers do not know each other from previous interactions.*

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[13] *Gift*Firstvisit*Manager* is negative but becomes insignificant with a Tobit specification of the latter regression model. See Table 7 in the Appendix.

[14] One seller was newly hired during the period of the experiment and therefore did not know any of the buyers personally. This seller's revenue is on average lower in *Gift* than in *No Gift*. As mentioned above, the opposite holds true for all other sellers. The results are robust to the exclusion of observations stemming from this newly hired seller.

5 Discussion and Concluding Remarks

We analyzed data from a natural field experiment testing the importance of reciprocity in a competitive market with experienced agents. Sales representatives from a multinational consumer products firm were instructed to randomly distribute a gift to their business partners. Consistent with the notion of reciprocity, gifts increased the sellers' success in sales substantially, especially if they were handed over to the manager of the store. This result is remarkable given that the literature on gift-exchange has recently been challenged by studies showing that reciprocal behavior is of lesser importance in more naturally occurring settings (e.g. Gneezy and List (2006), List (2006)). Furthermore, there is some evidence that competition tends to reduce social preferences (Carpenter (2005)), or diminishes the impact of social preferences on the outcome (Fischbacher et al. (2003)). The customers in our experiment are observed in a natural and highly competitive setting. We therefore consider our result strong evidence for the significance of reciprocal behavior.

However, our results also indicate that the prevalence of reciprocity is conditional on environmental factors. If sellers and buyers meet for the first time and therefore do not know each other, no reciprocal behavior is observable. In contrast, the gift is rather counterproductive and hinders the sellers' success in sales. One potential explanation for this phenomenon is that the nature of the relationship determines how buyers interpret the receipt of gifts and the underlying intentions. Given that seller and buyer know each other the gift can be interpreted as a gesture of friendship. On the other hand, unfamiliar buyers may become suspicious and consider the gift as a persuasive attempt to push sales or even as a bribe. Trawick et al. (1989) conducted a survey among purchasing agents and found that gifts are considered to be less ethical and to negatively affect supplier choice if they are distributed to prospective instead of current customers. Another potential explanation for the absence of reciprocal behavior relates to the concept of social distance (e.g. see Hoffman et al. (1996) or Charness et al. (2007)). Buyers might perceive the social distance to be greater when dealing with an unknown customer and therefore feel less indebted to reciprocate.[15]

This study focused on short run effects of gift giving. An interesting next step is to look at the role of intertemporal substitution and the role of adaptation in repeated gift giving. If the buyers in the *Gift* decrease their expenditures

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[15] Interestingly, Bellemare and Shearer (2007) find that reciprocal behavior is more pronounced in their labor market field experiment, as the workers' tenure increases. It therefore seems that the interaction between the giver-responder relationship and reciprocal motivation is not restricted to the specific setting of this paper.

in subsequent sales talks, the long term effect of the gift might be zero. While our data does not allow to test this argument the results from Falk (forthcoming) and Bellemare and Shearer (2007) suggest that intertemporal substitution is unimportant for reciprocal behavior. Other contextual factors not analyzed in this paper might be of crucial importance for the prevalence of reciprocity in the field. Such factors include for example the nature and value of the gift. Buyers would surely interpret 10 Swiss Francs in cash differently than the six tubes of tooth paste. The different nature of gifts might also account for the mixed findings from recent field experiments. In fact our results are in line with Falk (forthcoming), where a non-monetary gift is distributed, but differ from List (2006), where the first mover's gift is just cash. Hence, the absence of reciprocal behavior in the field does not necessarily mean that people are not motivated by reciprocity. It might just be due to the fact that the receiver does not perceive the gift as a kind action. Analyzing the "currency" of reciprocity is an important task for future research.

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Appendix

Table 4: Summary statistics

Variable	Mean	Std. Dev.	Min.	Max.
Sales Revenue	88.445	244.676	0	2196
Offers Sold	0.555	0.932	0	4
Duration	9.523	8.131	0	50
Offers shown	3.973	1.404	0	5
Manager	0.35	0.478	0	1
Category A	0.055	0.228	0	1
Category B	0.205	0.404	0	1
Category C	0.409	0.493	0	1
Category D	0.059	0.236	0	1
Category E	0.273	0.446	0	1
Wholesaler 1	0.618	0.487	0	1
Wholesaler 2	0.109	0.312	0	1
Wholesaler 3	0.273	0.446	0	1
Shopping mall	0.286	0.453	0	1
# Visits	1.973	2.532	0	13
Firstvisit	.373	.485	0	1
January	0.495	0.501	0	1
Male	0.255	0.437	0	1
Seller 1	0.059	0.236	0	1
Seller 2	0.227	0.42	0	1
Seller 3	0.405	0.492	0	1
Seller 4	0.264	0.442	0	1
Seller 5	0.045	0.209	0	1
Obs.		220		

Table 5: Assessing the Balance of Covariates

Variable	Gift	No Gift	p-value
Category A	0.064	0.045	0.531
	(0.246)	(0.208)	
Category B	0.229	0.18	0.366
	(0.422)	(0.386)	
Category C	0.45	0.369	0.227
	(0.5)	(0.485)	
Category D	0.064	0.054	0.749
	(0.246)	(0.227)	
Category E	0.193	0.351	0.008
	(0.396)	(0.48)	
Wholesaler 1	0.624	0.613	0.864
	(0.487)	(0.489)	
Wholesaler 2	0.138	0.081	0.179
	(0.346)	(0.274)	
Wholesaler 3	0.239	0.306	0.259
	(0.428)	(0.463)	
Shopping mall	0.294	0.279	0.815
	(0.458)	(0.451)	
Manager	0.358	0.342	0.81
	(0.482)	(0.477)	
Male	0.284	0.225	0.314
	(0.453)	(0.42)	
Firstvisit	0.367	0.378	0.861
	(0.484)	(0.487)	
# Visits	2.22	1.73	0.243
	(2.773)	(2.256)	
January	0.505	0.486	0.788
	(0.502)	(0.502)	
Seller 1	0.064	0.054	0.749
	(0.246)	(0.227)	
Seller 2	0.229	0.225	0.942
	(0.422)	(0.42)	
Seller 3	0.376	0.432	0.395
	(0.487)	(0.498)	
Seller 4	0.284	0.243	0.488
	(0.453)	(0.431)	
Seller 5	0.046	0.045	0.977
	(0.21)	(0.208)	

Note: Sample averages (and standard deviations in parentheses) are reported in the first two columns. The last column contains p-values (two sided Pearsons's χ^2 tests respectively Wilcoxon ranksum tests for the non-binary control variable *# visits*) for the null hypothesis of perfect randomization.

Table 6: Robustness Checks: Random Effects Models

	Sales Revenue							Offers Sold	
	(1) GLS	(2) GLS	(3) GLS	(4) GLS	(5) GLS	(6) GLS	(7) GLS	(8) GLS	(9) GLS
Gift	64.540**	-6.709	191.251**	59.245**	-11.894	118.272**	4.629	0.111	-0.125
	(30.135)	(16.786)	(85.816)	(28.848)	(17.262)	(49.213)	(28.317)	(0.115)	(0.117)
Gift*Manager		197.285**			191.431**		254.641**		0.603**
		(82.899)			(80.475)		(104.225)		(0.281)
Gift*Firstvisit						-137.665***	-12.278		
						(52.001)	(29.185)		
Firstvisit*Manager							40.598		
							(48.659)		
Gift*Firstvisit*Manager							-281.657**		
							(112.219)		
Manager		16.547			35.013		0.159		0.101
		(24.993)			(26.635)		(31.241)		(0.169)
Firstvisit						-27.058	-42.898**		
						(24.637)	(19.214)		
Offers shown				19.435***	29.566***				
				(7.138)	(9.232)				
Seller FE?	NO	NO	NO	NO	NO	NO	NO	NO	NO
Controls ?	YES	YES	YES	YES	YES	YES	YES	YES	YES
Obs.	220	220	73	220	220	220	220	220	220
Prob> χ^2	0.001	0.000	0.142	0.004	0.001	0.000	0.000	0.000	0.000
R^2	0.049	0.135	0.228	0.064	0.161	0.095	0.1812	0.084	0.150

Note: Table reports GLS coefficient estimates from a Random Effects model (robust standard errors in parentheses). Significance levels are denoted as follows: * $p<0.1$, ** $p<0.05$, and *** $p<0.01$. The dependent variable is sales revenue in Swiss Francs, respectively the number of offers sold per sales meeting. *Category E* is included in the set of control variables for all reported models. In Model (3) *Manager, Wholesaler 3* and *Male* are included as additional control variables as they are not perfectly balanced between treatments in the restricted sample.

Table 7: Robustness Checks: Tobit Models

	Sales Revenue						Offers Sold	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Tobit	Tobit	Tobit	Tobit	Tobit	Tobit	Tobit	Tobit
Gift	107.914	-60.515	84.585	-69.367	197.990**	-0.939	0.177	-0.368
	(78.774)	(86.009)	(74.917)	(85.852)	(99.213)	(97.759)	(0.316)	(0.400)
Gift*Manager		373.609**		318.048*		413.254**		1.225*
		(176.714)		(169.986)		(201.149)		(0.639)
Gift*Firstvisit					-332.643**	-191.695		
					(165.697)	(185.945)		
Firstvisit*Manager						197.457		
						(214.403)		
Gift*Firstvisit*Manager						-157.672		
						(294.581)		
Manager		55.014		132.965		-15.417		0.239
		(101.677)		(110.983)		(115.874)		(0.462)
Firstvisit					-28.728	-137.675		
					(135.929)	(153.188)		
Offers shown			86.377**	100.589***				
			(35.513)	(37.201)				
Seller FE?	YES	YES	YES	YES	YES	YES	YES	YES
Controls ?	YES	YES	YES	YES	YES	YES	YES	YES
Obs.	220	220	220	220	220	220	220	220
Prob> χ^2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note: Table reports coefficient estimates from a Tobit model with bottom censoring at zero sales revenue (robust standard errors in parentheses). Significance levels are denoted as follows: * $p<0.1$, ** $p<0.05$, and *** $p<0.01$. The dependent variables are sales revenue in Swiss Francs, respectively the number of offers sold per sales meeting. *Category E* is included in the set of control variables for all reported models.

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Table 8: Question wording and Coding (Translated from German to English)

Variable	Definition	Question wording [Possible answers in brackets]
Sales Revenue	total sales revenue from all offers	Indicate the achieved sales revenue (total net purchase prices) in Swiss Francs for each offer. offer 1 (name)..., offer 2 (name)..., offer 3 (name)..., offer 4 (name)..., offer 5 (name)...
Offers Sold	number of offers sold	
Duration	duration of the sales meetings in minutes	How many minutes did the customer have time to look at your offers? [minutes]
Offers shown		Could you show the customer all offer from the sales booklet? Please cross: [yes, no] If no, which offer could you **not** show your customer? Please cross: [offer 1, offer 2, offer 3, offer 4, offer 5]
Manager	1=negotiated with the manager, 0=else	Did you negotiate with the manager? Please cross: [yes, no]
Category A	1=customer is categorized as A, 0=else	In which category does your customer fall? Please cross: [A, B, C, D, E]
Category B	1=customer is categorized as B, 0=else	
Category C	1=customer is categorized as C, 0=else	
Category D	1=customer is categorized as D, 0=else	
Category E	1=customer is categorized as E, 0=else	
Wholesaler 1	1=customer buys from wholesaler 1, 0=else	The customer buys from wholesaler... Please cross: [name wholesaler 1, name wholesaler 2, name wholesaler 3]
Wholesaler 2	1=customer buys from wholesaler 2, 0=else	
Wholesaler 3	1=customer buys from wholesaler 3, 0=else	
Shopping mall	1=shop is located in a mall, 0=else	Is the shop located in a mall? Please cross: [yes, no]
# Visits	total number of visits since 1st of January 2005	How many times die you visit this customer since 1st of January 2005?
Firstvisit	1=customer is visited for the first time	When did you last visit this customer? [date, or I visit this customer for the first time]
January	1=customer is visited in January, 0=customer is visited in February	
Male	1=customer is male, 0=customer is female	With whom did you negotiate primarily? Please cross: [male,female]