It's Not What You Get but When You Get It: The Effect of Gift Sequence on Deposit Balances and Customer Sentiment in a Commercial Bank

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ABSTRACT

The impact of gifts on deposit balances and customer satisfaction was examined in a longitudinal field experiment conducted at a commercial bank. Gifts increased deposit balances, survey response rates, and customer satisfaction compared to the no-gift control. Several factors were manipulated within the gift treatment: gift type, the accompanying message, and the sequence of gift value, which was either improving ($35 then $100 gift), worsening ($100 then $35 gift), or a single gift. There was a highly detrimental effect of decreasing gift value on deposit balances. This "deterioration aversion" persisted in a long-term follow-up analysis of deposit balances. A vignette experiment replicated deterioration aversion and extended the results, demonstrating increased effectiveness of improving gifts over constant gift sequences, and finding that the mechanism underlying deterioration aversion involves the violation of expectations.

Keywords: reciprocity, sequences, rewards programs, loyalty programs, expectations

Customer reward programs are ubiquitous. They are intended to boost customer loyalty by rewarding cumulative purchases, thereby creating both goodwill and switching costs (Banerjee and Summers 1987; O'Brien and Jones 1995; Shoemaker and Lewis 1999). Despite their prevalence, however, there is ongoing debate about whether reward programs are actually profitable (Dowling and Uncles 1997; Reichheld and Teal 1996; Singh, Jain, and Krishnan 2008).

We propose two psychological factors that help explain why reward programs have not fulfilled their promise, neither of which has been explicitly tested in the marketing literature. The first involves information-processing limitations. Reward programs often involve points that can be exchanged for discounts or free products. The complexity of cashing in rewards and the information bombardment from multiple competing programs can be a source of confusion and frustration. The second involves expectations about receiving rewards. As customers become accustomed to receiving rewards, they begin to view them as an entitlement, which implies that their value will decline over time if their magnitude is held constant.

We tested the efficacy of a novel rewards program that was designed to minimize these pitfalls using a randomized, controlled field experiment with bank customers. Customers in the program were rewarded with surprise gifts, which eliminated the cognitive and attentional demands associated with traditional, transactional points-based rewards programs. Unexpected gifts also invoke the social norm of reciprocity (Cialdini 1985), prompting customers to seek to repay the gifts. Though we do not explicitly compare the efficacy of a reciprocity-based rewards program to that of a transactional rewards program, we do demonstrate a significant boost in

customer loyalty compared to a no-reward control, as evidenced by increased account balances, survey response rates, and satisfaction with the bank. Thus, one contribution of this paper is a confirmation of the power of reciprocation to generate revenue and to promote positive customer sentiment.

We also examine the effect of different sequences of gifts on customers' motivation and satisfaction. Previous research has shown that the sequence of outcomes over time influences people's overall evaluation of an extended experience. Holding total value constant, people prefer improving sequences of rewards to deteriorating sequences (Frank and Hutchens 1993; Loewenstein and Sicherman 1991; Schmitt and Kemper 1996). Similarly, the retrospective evaluation of actual experiences of discomfort (e.g., Kahneman et al. 1993) and entertainment (e.g., Baumgartner, Sujan, and Padgett 1997) depends on the trend of the experience, rather than simply the total amount of pleasure or pain. To address the effect of sequence, we randomly assigned bank customers to receive one of three gift sequences: increasing, decreasing, or a single gift.

A main contribution of this paper is a dramatic demonstration of the detrimental effect of decreasing (i.e., worsening) gift sequences. We find strong evidence for "deterioration aversion"—a distaste for worsening trends which is so strong that adding a gift of lesser value to an ongoing sequence can completely undermine the positive effect of the gifts on customer loyalty. This suggests that rewarding customers leads them to expect future rewards of a similar or greater value, and that companies face repercussions for failing to meet those expectations. Though we did not measure expectations in our field experiment, we conducted a follow-up

vignette experiment that compared hypothetical reactions to various sequences of gifts and explored the psychological mechanism underlying the relationship between gift sequence and satisfaction. The vignette experiment confirms that violated expectations mediate the negative effect of worsening trends.

The vignette experiment makes two additional contributions to our understanding of the effect of gift sequence. First, it offers even stronger evidence for deterioration aversion. Satisfaction was lower for worsening gift sequences compared to an improving sequence, even when the worsening sequence had a substantially greater total gift value. Second, in the field experiment we were not able to test whether there is any benefit to improving trends compared to a constant gift sequence. The vignette experiment revealed that an improving sequence can be more effective than a constant sequence of equal value.

Reciprocity

Reciprocity is a fundamental social norm which dictates that people repay positive actions such as gifts, favors, or concessions (Gouldner 1960). Reciprocity is often exploited in marketing, from the flowers unexpectedly forced into the palms of potential donors by Hare Krishnas to enclosing a cash gift with surveys to boost response rates (Cialdini 1985).

Field experiments have demonstrated the power of reciprocity and generally find that the better the gift, the better the response. Charitable donations were significantly higher when the request letter contained a gift of a postcard, and were higher still for a larger gift of four postcards (Falk 2007). In a field experiment at a manufacturing firm, sales were significantly

higher when purchasing agents received an expensive gift (a gold scissors and letter-opener set) compared to a less expensive gift (a silver set) (Beltramini 2000).

In the current experiment, we expect increases in deposit balances and customer sentiment to result from feelings of gratitude and indebtedness triggered by the gifts. We compare reactions to gifts of different sizes and examine the profitability of the gift reward program. The effect of the gifts in this rewards program may be especially pronounced because the first gift is completely unexpected, and surprise is associated with focus of attention (e.g., Sokolov 1963). The effect of surprise gifts is also likely to be magnified because their purpose is not entirely clear. Prior research has found that uncertainty about the rationale for positive outcomes increases the intensity and duration of positive affective reactions (Wilson et al. 2005).

The Value of Increasing Trends

Previous research suggests that sequencing gifts to have a positive trend can enhance their motivational value. One line of research examines *preferences* among sequences of outcomes. Despite the higher net present value of decreasing cash flows, increasing cash flows are preferred over constant or decreasing flows of equal value, even when subjects are provided with the rational for maximizing net present value (Loewenstein and Sicherman 1991). Sequences that end with a gain (e.g., lose $15, then win $85) are overwhelmingly preferred to sequences that end with a loss (e.g., win $85, then lose $15) (Ross and Simonson 1991). People show impatience when evaluating a single, desirable outcome, such as a fancy French dinner, which they would prefer to consume sooner, rather than later. However, if the fancy dinner is framed as a part of sequence with a mediocre Greek dinner (or even eating at home), then

peoples' preferences shift to postpone the fancy dinner so they can have it after the mediocre Greek dinner (Loewenstein and Prelec 1993; see also Magan et al. 2008). The preference for increasing trends has been demonstrated in numerous other contexts, ranging from academic performance (Hsee and Abelson 1991) to stock performance (Ariely and Zauberman 2000) to short-term health outcomes (Chapman 1996).[i]

These preferences suggest that people believe they will derive greater satisfaction from increasing trends, an intuition that is confirmed by research on *retrospective evaluations* of experience. Similar to the research on preference, this research finds that the overall value of a past experience is not based on the sum of the utility of its component parts, but that people tend to focus on what Ariely and Carmon (2003) refer to as "gestalt characteristics" of the sequence. Holding total intensity of experience constant, sequences that improve over time are rated more positively than constant sequences, and constant sequences are rated more positively than sequences that worsen over time.[ii]

There are "real world" findings that support a greater preference for and enjoyment of improving trends. The stock market rewards firms that have uninterrupted patterns of increasing earnings with higher price-earnings ratios, even after controlling for growth and risk proxies (Barth et al. 1999). Survey data on job satisfaction reveals a strong positive relationship between increases in wages over time and job satisfaction, but no relationship between absolute levels of pay and job satisfaction (Clark 1999).

If people report both a preference for and a greater retrospective evaluation of improving sequences, an implication is that these sequences should be more motivating when provided as a

reward for specific behaviors. The current study is the first to examine the motivational properties of different sequences of rewards.

Explanations for the Effect

There are several possible explanations for why people demonstrate preferences for, and better evaluations of, improving trends (see Frederick and Loewenstein 2008; Loewenstein and Prelec 1993). After reviewing these different explanations, we propose that expectation formation and violation provides the most plausible account for the better performance of improving trends that we observe.

Anticipatory utility is one explanation for why people choose increasing over decreasing sequences. People derive anticipatory utility by delaying positive events (allowing them to savor the thought of the future pleasure) and by getting a negative event over with as soon as possible (expediting the disutility of dread) (Loewenstein 1987; Berns et al. 2006). Improving sequences allow the anticipation of future gain or pleasure, while worsening sequences force the anticipation of future pain or loss (or loss relative to the status quo). Anticipatory utility, however, cannot explain the current findings since customers were not aware of the value of the second gift value, or even aware that a second gift was forthcoming.

The literature on the retrospective evaluation of experience has stressed the importance of how the experience is encoded in memory. The overall hedonic evaluation is captured with great accuracy by the peak-end rule, a simple unweighted average of the most intense (and thus most salient) and the final moments of the experience (a recency effect) (Baumgartner, Sujan, and Padgett 1997; Frederickson and Kahneman 1993; Redelmeier and Kahneman 1996). In the

current field experiment, the peak value in the improving and worsening gift sequences is held constant, but our results could be accounted for by a recency effect since the last gift in the improving sequence is $100 and the last gift in the worsening sequence is $35. However, in the vignette experiment, we will offer evidence that it is the violation of expectations concerning the appropriate value of future gifts that mediates the relationship between gift sequence and satisfaction, and that expectation formation operates independently from, and prior to, the effect of recency.

Another potential explanation involves adaptation and the contrast effects that it produces. Adaptation describes the tendency to adjust to the current level of a stimulus and to be highly sensitive to small departures from it (Helson 1964). Adaptation implies that every period of an improving sequence will be experienced positively, whereas every subsequent period of a worsening sequence will be experienced negatively. Prospect theory (Kahneman and Tversky 1979) captures the essence of an account based on adaption. Prospect theory posits that outcomes are evaluated as gains and losses (rather than absolute wealth level), which makes the ordering of rewards very important. Improving sequences would be valued as a series of gains with a continuously upward shifting reference point. Worsening sequences would be valued as a stream of losses, with a downward shifting reference point. Another key feature of prospect theory, loss aversion, implies that, compared to a constant sequence, worsening sequences would be perceived more negatively than improving sequences would be perceived positively.

Although past attainments are an obvious point of reference in many situations, other reference points can also come into play, such as what others have or one’s own prior

expectations. In fact, a major impediment to the application of prospect theory has been ambiguity about what constitutes the applicable reference point in a particular setting. Responding to this limitation in a series of influential papers, Koszegi and Rabin (2006; 2009) have proposed that one can make sense of a wide range of data by assuming that people's expectations serve as a kind of universal reference point. The role of expectations about brand and product performance on satisfaction has also been documented in the marketing literature (e.g., Cadotte, Woodruff and Jenkins 1987; Oliver 1980). Such an account fits our data well, and an explicit test of the idea is included in our second study. Since receiving a surprise gift from a bank is a novel event, customers are not likely to have strong prior beliefs about the value of a suitable gift. The first gift may spur customers to form an impression about the appropriate value, which would lead to expectations about the value of a possible future gift. These expectations set a reference point by which future gifts are judged as gains or losses.

The idea that people do not have strong expectations about gifts but, after receiving initial gifts, judge the value of subsequent gifts relative to them, is consistent with the concept of "coherent arbitrariness" (Ariely, Loewenstein, and Prelec 2003). When subjects were asked to report how much compensation they would require to listen to annoying sounds, they were coherent in that they required greater compensation for sounds of longer duration. However, the compensation they demanded was arbitrary in the sense that it was influenced by anchor prices that subjects knew to be randomly generated. In unfamiliar contexts, such as compensation for unusual requests or thank-you gifts for loyal banking, people do not have strong priors about

what constitutes an appropriate reward. However, once an initial belief has been formed, expectations about future rewards are set and serve as a reference point for evaluation.

FIELD EXPERIMENT WITH BANK CUSTOMERS

We conducted a natural field experiment (by the criteria of Harrison and List 2004) to gauge the efficacy of (1) sending gifts to bank customers and (2) using different cost sequences of the gifts. Based on theories of reciprocity, we hypothesized that customers who received gifts would show higher deposit balances and would experience more positive sentiment towards the bank. Sentiment was measured by survey response rates and responses to a short survey administered by mail at the conclusion of the experiment. Based on research demonstrating robust preferences for, and evaluations of, improving sequences, we hypothesized that customers who received improving sequences of gifts would show higher deposit balances and would experience more positive sentiment towards the bank.

In addition to the experimental manipulations involving the presence and cost of gifts, half of the participants in the gift treatment conditions were given a suggestion of how they could reciprocate: a number to call to sign up for additional services.[iii] Previous research is mixed on the issue of whether asking customers to reciprocate has a positive or negative effect. The persuasion literature theorizes that people use "persuasion knowledge" about the tactics, strategies, and motives of marketers to help ensure that they make consumption decisions that are in their own best interests (Friestad and Wright 1994). Urging customers to contact the bank

to set up new services might suggest ulterior motives and prompt customers to actively resist the inclination to reciprocate. Prior research has demonstrated that people doubt the sincerity of salespeople when ulterior motives are primed (Campbell and Kirmani 2000). Similarly, the desire to reciprocate extra effort made by firms (such as in product presentation) is undermined if the effort is thought to be part of a sales strategy (Morales 2005). These lines of research suggest that customers who receive a hint that they might want to reciprocate might be less likely to do so. However, pointing to the opposite prediction, other research has found that subjects evaluated a hypothetical gift more positively, and expressed a greater desire to reciprocate the gift, when they were given an implicit request for reciprocation: a letter stating that the company would appreciate their business in the future (Bodur and Grohmann 2005). Given these mixed findings, we were curious, but did not have a strong prediction, about whether providing an implicit suggestion that the gifts should be reciprocated would have a beneficial or adverse effect on customer loyalty.

METHODS

Bank Customers

The experiment was conducted with high-balance customers (with assets totaling more than $100,000 combined in checking accounts, saving accounts, money market accounts, and CDs) in a large commercial bank. The bank believed that these customers were most likely to hold assets at competing banks and thus had the discretion to increase their holdings at the target

bank either through transfers, by increasing spending out of competing accounts, or by increasing the magnitude or frequency of deposits.

As will become apparent in the analysis, this selection criterion resulted in reversion to the mean effect across all conditions. Since bank customers were selected for their high balances, over time there was a general trend in the data for deposit balances to decrease. The bank managers fully anticipated this effect based on previous tracking of high-balance customers. Thus, the anticipated and observed effect of our treatments was to decrease this rate of decline rather than to produce an actual increase in balances.

Available data on these customers included the number of years the customer had been with the bank and the number of distinct services that the customer had with the bank (investment account, online banking, estate planning, etc.). These variables and dummy variables for the three markets in which the experiment was conducted, are used as controls in the regression analyses.

Experimental Procedures

Customers were selected in equal numbers from each of the three markets and were randomly assigned to condition. Twelve hundred customers were assigned to the no-gift control condition and 750 to the experimental gift treatments. Thirty-seven of the accounts selected as high-balance customers closed after the selection process but prior to the start of the experiment (before any gift was delivered) and were dropped from the study. Six accounts were dropped from analysis due to extreme values at the start.[iv] This brought the number of customers in Phase 1 to 1,178 in the control condition and 729 in the gift treatment conditions.

Customers in the control condition did not receive any gifts and, aside from the survey at the end of the experiment, were simply monitored. In Phase 1 of the experiment, three variables were manipulated in the gift treatment groups: (1) the type of gift, (2) the cost of the gift, and (3) whether or not the card enclosed with the gift suggested a way that the customer could reciprocate the gift (see Table 1 for a summary of the experimental conditions).

[Insert Table 1 about here.]

The type of gift was manipulated based on the bank's desire to understand the relative efficacy of different types of gifts. The gift types were gift certificates for either a local gas station chain or a local high-end restaurant. For the gas gift certificates, the enclosed card read, "We value your business and want to thank you for banking with X Bank. We thought we'd help take the sting out of rising gas prices. Please enjoy the enclosed gas gift certificate." For the restaurant gift certificates, the card read, "We value your business and want to treat your palate. Thank you for banking with X Bank. Bon appétit!"

For gas certificates, the value of the gift was either $35 or $100. The restaurant gift certificates were always valued at $100 so they would cover the cost of dinner for two and not be misinterpreted as a marketing promotion designed to entice the customers to spend additional money out-of-pocket. The restaurant gift cards could be used at any of several restaurants owned by a local conglomerate of high-end restaurants.

Half of the customers in each of the gift conditions also received information about how they could potentially reciprocate the gift. After the text described above, the card continued, "We also feel you may benefit from some of our additional capabilities, such as our investment

or estate planning services. Please call 1-800… for more information or to set up an appointment."

In Phase 2, approximately five and a half months after the first gift had been sent, the second gift was sent. See Figure 1 for a timeline of the experimental interventions. Eighteen customers from the 729 in the gift conditions who were assigned to receive a gift in Phase 2 did not receive the second gift for a variety of reasons (e.g., the customer died, was added to the national do-not-call list, or was discovered to be a bank employee) and were thus excluded from analysis.[v] See Table 1 for a description of the conditions and sample sizes.

[Insert Figure 1 about here.]

Survey

A brief survey was sent by mail in Month 10, which was approximately nine months after the initial gift and four months after the second gift. The survey fit on a postcard and was discreetly marked with a customer-identification code. It was sent to a randomly selected subset (500 customers) of the no-gift control condition and to all customers in the gift treatment groups.[vi] The main purpose of the survey was to measure response rates in each condition as an indicator of positive feeling towards the bank. A secondary purpose was to directly measure positive sentiment and feelings of entitlement about receiving gifts from the bank. It should be noted that the survey measures only reflect the customers who self-selected to respond to the survey, and thus are likely to be positively biased. Measures of general satisfaction (*How would you rate X Bank overall, X Bank goes above and beyond for their customers, I would recommend X Bank to my friends and family)*, trust (*If I had a problem with X Bank, I trust that they could*

resolve it to my satisfaction), and loyalty (*If I were in need of additional banking services, I would check with X Bank first*) were adapted from Bhattacharya and Sen (2003). In addition, a measure of entitlement ("*Banks should show gratitude to loyal customers with gifts and special offers"*) was included to gauge a potential negative consequence of receiving gifts: customers developing a sense of gift entitlement.

RESULTS

Baseline Analysis

No significant differences were found in the baseline deposit balances of any of the groups following random assignment to condition (Month 0), including a comparison of the no-gift control and all the gift-condition groups, a comparison of those who did and those who did not receive instructions on how to reciprocate the gift, and a comparison of the gift treatment condition groups (all *ps*>.30). See Table 1 for initial account balances.

Phase 1 Analysis

The main research question in Phase 1 was whether the gifts had a positive effect on changes in deposit balances. Examination of the change in deposit balances showed one obvious outlier, which was removed from the gift treatment condition.[vii] As discussed above, across all conditions there is a general tendency for deposits to decline. This probably reflects regression to the mean, since customers were selected for the experiment based on having a high initial deposit balance.

The drop in deposit balances in the gift groups was, on average, half of the drop in balances by the control group (M_{gifts}= -$6,456, SE_{gifts}= $2,439, M_{ctrl}= -$12,807, SE_{ctrl}= $1,975). Figure 2 depicts the change in deposit balances in the control and experimental conditions in Phase 1. The data were analyzed by regressing final deposit balance on experimental condition dummies, baseline deposit balance, and the control variables: years the customer was a client of the bank, the number of services the customers had at the bank, and dummy variables for the three markets in which the experiment was conducted (see Table 2).[viii] Specification 1 shows a $26,651 boost in deposit balances in the gift treatment conditions relative to the no-gift control. This is associated with a Cohen's d small effect size of .10. Besides an unsurprising positive effect of customer years (i.e., the number of years the customer had been with the bank) on balances, there was a significant interaction between the dummy variable for condition and customer years. Gift treatments had a greater effect on customers who had been with the bank for a shorter period of time (see Figure 3 for a graphical depiction of the interaction). This could mean that newer customers are more easily impressed by gifts or that older customers are more fixed in their loyalties, and thus more difficult to influence either positively or negatively. The number of distinct services variable and dummy variables for market were not significant.

[Insert Figures 2 and 3 about here.]

[Insert Table 2 about here.]

Within the gift treatment groups, we tested whether customers who received information about how to reciprocate the gift (by calling a number to get information or set up an appointment to learn about additional services) would show larger or smaller declines in deposit

balances compared to customers who did not get this information. The average drop in deposit balances for those who received instructions to reciprocate (*M*= -$7,281, *SE*= $3,407) was not significantly different from those who did not (*M*= -$5,641, *SE*= $3,496). There were also no significant differences dependent on the Phase 1 cost of the gift ($100 versus $35) or between the gift types (restaurant versus gas).

Phase 2 Analysis

The Phase 2 analysis compares improving and worsening gift sequences within the gift treatment conditions. The baseline for the Phase 2 analysis is set to the deposit balance at Month 5, which is the last deposit balance prior to the delivery of the second gift towards the end of Month 6. The analysis is conducted on the change from this baseline to the deposit balances at Month 11 (see Figure 1 for timeline).

Figure 4 shows changes in deposit balances between Month 5 and Month 11. The drop in deposit balances is less in the improving gas condition compared to the worsening conditions. Strikingly, the drop in deposit balance in the restaurant/no-second-gift condition was less than the drop in the worsening conditions, suggesting that an inferior second gift is worse than no second gift at all. The detrimental effect of the worsening conditions is so strong that it results in a drop in deposit balance that is greater than even that of the no-gift control condition.

[Insert Figure 4 about here.]

To examine the significance of these effects, we conducted a regression analysis on the deposit balances in Phase 2 (Table 2), baseline deposit balance (from Month 5), and available controls (years the customer was a client of the bank, the number of services the customers had

at the bank, and dummy variables for markets). In Specification 2, the worsening gas and the worsening restaurant/gas conditions are collapsed and compared to the improving gas condition. The improving condition is associated with a significant boost in deposit balances of $13,707 relative to the declining conditions. This is associated with a Cohen's d small effect size of .18. Specification 3 is restricted to the improving and worsening gas conditions only. The improving gas condition is associated with an increase in deposit balances of $12,557 relative to the worsening gas condition, although the effect is only marginally significant. In Specification 4, the worsening gas and worsening restaurant/gas conditions are collapsed and compared to the restaurant/no-second-gift condition. Again, results suggest that the effect of a worsening trend is so negative that it is better not to send a second gift.

Follow-up Analysis

A long-term follow-up analysis was conducted in Month 20 to gauge the persistence of the results over time. A comparison of change in deposit balance between the no-gift control and the combined gift treatment conditions was not significant, as would be expected given the detrimental effects of the conditions in which the gifts worsened over time. When the worsening conditions are excluded from the analysis, however, the gift treatment conditions showed a smaller drop in deposit balance from the Month 0 baseline to Month 20 (M= -$31,429, SE= $5,672) compared to the no-gift control (M= -$41,934, SE= $3,290), and this difference is marginally significant in a regression analysis including control variables (baseline deposit balance, years the customer was a client of the bank, the number of services the customers had at the bank, and market dummy variables) (β = $18,624, $t_{(1603)}$ = 1.64, p= .10).

The negative effect of gifts with worsening trends also persisted over time. A comparison of the combined worsening conditions and the improving gas condition from the Month 5 baseline (before the second gift was sent) to Month 20 shows a greater drop in the worsening conditions (M = -$38,968, SE= $6,314) compared to the improving condition (M = -$23,280, SE= $6,653), and this effect is significant in a regression analysis that includes control variables (β = $18,002, $t_{(549)}$ = 2.10, p = .04). If we restrict the analysis to only compare the improving gas condition with the worsening gas condition, the improving gas condition shows significantly better performance (β = $21,078, $t_{(412)}$ = 1.97, p = .05) . The finding that the combined worsening conditions produced a greater drop in deposit balances compared to the restaurant/no-second-gift condition did not persist in the long-term follow-up analysis.

Survey Analysis

Recall that survey response rate was intended as a secondary measure of customer satisfaction. The survey response rate was higher in the gift treatment conditions compared to the no-gift control (38% versus 25%). The effect is significant in a logit analysis of whether or not the survey was returned with available control variables (years the customer was a client of the bank, the number of services the customers had at the bank, and market dummy variables) (see Table 3, Specification 1). Figure 5 shows survey response rates in each of the experimental conditions. The improving gas condition has a significantly higher response rate compared to the combined worsening conditions (Specification 2). No other differences between the gift treatments were significant.

[Insert Table 3 and Figure 5 about here.]

Principle-component factor analysis of the five measures of satisfaction, trust, and loyalty indicated a single-factor structure. There was one Eigenvalue greater than 1 (4.30) and Cronbach's alpha for the items was .96. Thus, the analyses were conducted using a composite measure of the five dependent variables. The item measuring entitlement, "*Banks should show gratitude to loyal customers with gifts and special offers,"* was analyzed separately since it was intended to gauge negative effects of sending gifts.

The analysis of the survey measures mirrored the survey response rates and reflected a positive effect of the gifts. Customers in the gift treatment condition reported significantly higher levels of satisfaction (6.19 vs. 5.74, ($t_{(353)}$= 2.93, p<.01). However, the entitlement measure offers some evidence that the effect of the gifts may not be unequivocally positive. Customers in the gift treatment conditions scored significantly higher on the entitlement measure—the belief that banks should show gratitude to customers with gifts and special offers ($t_{(352)}$ = 5.47, p<.01).

Figure 6 shows the measures of satisfaction and entitlement by condition. There were no significant differences in satisfaction between the improving and worsening conditions. One possible explanation for the null finding is that most of the people who returned the survey were quite happy with the bank. Average satisfaction was 6.04 (*S.D.*= 1.38) on a seven-point scale. Any effect on the survey measures may have been attenuated to the degree that only satisfied customers return the survey (which is supported by the lower response rate in the worsening condition).

[Insert Figure 6 about here.]

Taken together, these results offer strong support for the hypothesis that the gifts would engender positive sentiment towards the bank. This was reflected by both higher survey response rates and more positive survey measures in the gift treatment conditions compared to the control condition. Support was found in survey response rates, but not the survey measures, for the hypothesis that increasing trends would engender more positive sentiment than decreasing trends.

DISCUSSION

The boost in deposit balances in the gift treatment conditions compared to the no-gift control suggests that surprise gift programs may be effective alternatives to traditional rewards programs that rely on transactional point schemes. Though a direct comparison is not possible with data in the current experiment, these gift programs show promise in their ability to produce revenue-generating results. Further, surprise gift programs require less administrative costs since there is no need to sign up customers, track points, deliver specified rewards, or address questions and complaints. The survey results also suggest that surprise gift programs increase positive sentiment towards the bank.

We can roughly estimate the effect of the gifts on the bank's bottom line by using the point estimate for the effect of gifts on the change in deposit balance in Phase 1. The finding from the field experiment suggests that the gift program will be most cost effective if targeted at new customers, whose deposit balances were much more responsive to the gift program. For new

customers, the effect of gifts was to decrease the decline of deposit balances by approximately $27,000 at Month 5 and by $19,000 at Month 20. If we assume an annual return of 2% on deposits and use the more conservative estimate of $19,000, the improving gift sequence pays for itself in approximately four months. This estimate does not capture the longer-term benefits that are likely to result from the significant increases in positive customer sentiment towards the bank, such as the endorsed willingness to give referrals and to look to the bank first when in need of new services. Contrary to the findings of Beltramini (2000), a more expensive gift in Phase 1 ($100 vs. $35) was not associated with a greater boost in deposit balances. A possible explanation is that the Beltramini (2000) study was conducted at a firm in which purchasing agents were accustomed to receiving gifts from the firm. No matter what the cost of previous gifts, the more expensive gift must have either surpassed expectations more or violated expectations less relative to an inexpensive gift. In contrast, the customers in our field experiment had never previously received a gift from the bank. Since they had nothing to which they could compare the value of the first gift, both the $35 and $100 gifts may have engendered a highly positive reaction, resulting in a ceiling effect. The lack of effect of gift magnitude raises the question of whether even smaller gifts would have had a similar effect, in which case the gifts would have yielded a net positive return in an even shorter period of time.

Consistent with the literature evaluations of sequences, we find strong evidence for deterioration aversion. The conditions with gifts that lessened in value over time produced a greater decline in deposit balances and a lower survey response rate compared to the conditions with an improving trend or a single gift. The worsening condition was on par with the control

condition, which did not receive any gift. These results underscore the damage that can be done if customer loyalty programs do not carefully take into account the way their customers experience rewards over time.

As discussed in the introduction, there are several possible explanations for the deterioration aversion that we observe, although we concluded that the most plausible is that customers form expectations about gifts and become dissatisfied if these expectations are not met. We conducted a second experiment which used hypothetical vignettes to test this prediction. The vignette experiment also addressed several questions that remained unanswered by the field experiment regarding the value of improving sequences. We were unable to explore in the field experiment whether improving sequences are superior to constant sequences. Further, the results of the field experiment indicated that an improving sequence was no better than a single *expensive* gift. However, we were not able to compare an improving sequence to a single *inexpensive* gift.

VIGNETTE EXPERIMENT

The vignette experiment asked participants to imagine receiving hypothetical gifts in exchange for ongoing research participation. We chose the context of researchers sending gifts to participants because it was one that we could ensure the sample could easily relate to.

We sought to replicate the deterioration aversion observed in the field experiment by comparing a sequence of Amazon.com gift certificates that increased in value ($4 then $10) to a

worsening sequence of equal value ($10 then $4) and to a worsening sequence of greater value ($14 then $10). To extend the results of the field experiment, we included a condition with gifts of constant value ($7 then $7). Since previous research has found that people prefer increasing sequences to constant sequences (Hsee and Abelson 1991; Loewenstein and Sicherman 1991), we expected greater satisfaction in the improving condition compared to the worsening and constant conditions.

As in the field experiment, we included a single expensive gift condition ($10) in Experiment 2 but did not have a strong hypothesis about how effective it would be relative to the improving condition, given that there was no difference between these conditions in the field experiment. We also included a single inexpensive gift condition ($4).

A primary motivation for Experiment 2 was to explore the underlying mechanism for deterioration aversion. We propose that the initial gift leads people to form expectations about the appropriate value of subsequent gifts. Deviations from these expectations can be expected to reduce satisfaction. Thus, we expected that violated expectations about the value of a second gift would mediate the negative effect of worsening trends.

METHODS

Three hundred ten participants were recruited from an email distribution list of Carnegie Mellon University alumni who had previously indicated an interest in participating in research studies. The experiment was conducted online and there was no compensation for participation.

The sample consisted mainly of professionals with an average age of 39.8 and was evenly divided between males and females.

In a between-subjects design, participants were randomly assigned to the conditions displayed in Table 4. Participants in all conditions first read the following:

> *Imagine that in response to researchers at your alma mater, you agree to fill out a series of short surveys on current events. You are asked to fill out a five-minute survey each week for three months. The study description did not specify payment, but based on your participation in previous research studies, you would not be surprised if some compensation was forthcoming.*
>
> *After the first month of participation, you receive the following email from the researchers: We value your participation in our study and want to thank you. Please enjoy this $X gift certificate to Amazon.com.*

Next, participants in the improving, constant, and worsening conditions (but not the no-second-gift conditions) read the following:

> *You continue to fill out the surveys each week for the 2nd month. There is now one more month left to finish participating in the study. You receive another email from the researchers: We want to thank you again for participating in our study. Please enjoy this $Y gift certificate to Amazon.com.*

[Insert Table 4 about here.]

Using a Solomon design, expectations about receiving future gifts were assessed for half of the sample in the improving, constant, and worsening conditions with these questions:

"Having received this $X gift from the researchers, would you expect to get an additional gift?" and "If you were to receive another gift from the researchers, what would you expect its value to be?" All conditions then answered a series of questions to assess satisfaction: how pleased they were with the gift(s), the appropriateness of the gift(s) given the level of effort involved in the research study, willingness to recommend research participation to friends and family, willingness to continue participating in the research project, and willingness to complete another study with these researchers.

RESULTS AND DISCUSSION

Composite Measure of Satisfaction

Principle-component factor analysis of the five dependent variables indicated a single-factor structure. There was one Eigenvalue greater than 1 (3.50) and Cronbach's alpha for the items was .89. There was no difference in the composite measure of satisfaction depending on whether or not expectations were assessed between the first and second gifts ($t_{(245)}$=.17, p=.86). Thus, the analyses were conducted using a composite measure of the five dependent variables assessing satisfaction, collapsed across whether or not expectations were assessed.

Deterioration Aversion

As in the field experiment, the negative effect of worsening sequences (deterioration aversion) is very clear. Figure 7 shows the mean of the composite measure of satisfaction for each condition. Consistent with the results of the field experiment, the improving sequence ($4

then $10) resulted in significantly greater satisfaction compared to the worsening gift sequence ($10 then $4) ($t_{(119)}$= 7.42, p<.01). Also consistent with the field experiment, it is better to send only a single gift rather than sending a subsequent gift of lower value. Given an initial gift of $10, sending a second gift of $4 significantly decreases satisfaction compared to no second gift ($t_{(94)}$= 4.43, p<.01).

[Insert Figure 7 about here.]

Analysis of the worsening/$14–$10 condition offers further evidence for deterioration aversion. This condition had a total value $10 greater than the improving/$4–$10 condition, yet it resulted in significantly lower satisfaction ($t_{(122)}$= 2.42, p=.02). This condition also allows us to evaluate how a payment of $10 is perceived when it is preceded by a $4 gift compared to when it is preceded by a $14 gift. Participants were asked, "How pleased do you think you would be about the second gift of $10?" They were significantly more pleased with the $10 gift when it was preceded by the $4 gift compared to when it was preceded by a $14 gift (5.75 versus 4.96, $t_{(122)}$= 2.84, p<.01).

Benefits of Improving Sequences

Previous research suggests that improving sequences should be overvalued relative to constant sequences of equivalent value. Although we did not have the opportunity to test this in the bank field experiment, the results of the vignette experiment confirm this. Satisfaction was significantly greater in the improving condition ($4 then $10) compared to the constant condition ($7 then $7) ($t_{(112)}$= 2.24, p= .03).

In the field experiment, the improving condition ($35 - $100) did not yield better results than a single gift of an amount equivalent to the value of the expensive second gift ($100). However, the results of the vignette experiment suggest that improving sequences are superior to single gifts. Adding a second $10 gift to an initial gift of $4 does increase satisfaction ($t_{(86)}$=5.16, p<.01). Satisfaction was marginally higher with an improving $4–$10 sequence compared to a single $10 gift ($t_{(94)}$=1.91, p=.07). This may reflect the greater salience of the dollar value of the gifts in the vignette experiment compared to the field experiment. In support of this idea, in the field experiment, we did not observe any difference between an initial gift of $35 and one of $100. The results of the vignette experiment are not consistent with this. A single gift of $10 leads to higher satisfaction compared to a single gift of $4 ($t_{(61)}$= 2.97, p< .01).

Mediation Analysis

Expectations about the value of a second gift were assessed for half of the participants in the improving, worsening, and constant conditions with the question, “If you were to receive another gift from the researchers, what would you expect its value to be?” The expected value of a second gift was significantly predicted by the value of the first gift (β= .93, p=.01).

Mediation analysis was conducted to determine whether expectations about the value of the second gift mediated the relationship between gift sequence and satisfaction. The improving and constant conditions were grouped together and compared to the worsening conditions.[ix] The variable “violated expectations” was used to represent the degree to which expectations overestimated the value of the second gift (expectation - actual value of the second gift). Table 5 shows the mediation analysis using OLS regression, following the steps of Baron and Kenny

(1986). Model 1 shows the significant relationship between worsening trends and the composite measure of satisfaction. Model 2 shows the relationship between worsening trends and the mediator variable, violated expectations. Model 3 shows that the relationship between worsening trends and decreased satisfaction becomes insignificant when violated expectations are included in the model, indicating full mediation. The mediator accounts for 67.5% of the relationship between worsening trends and decreased satisfaction and the Sobel test for mediation is significant ($z = 3.33$, $p < .01$).

[Insert Table 5 about here.]

CONCLUSION

Playing on the natural inclination towards reciprocation and sensitivity to the ordering of rewards over time are potentially fruitful strategies for boosting customer satisfaction and motivation. Previous research has documented a greater appreciation for improving sequences, both in choice and in retrospective evaluations of experiences. The current study is the first to explore whether structuring rewards in line with this proclivity can be used as a motivational lever. The results illustrate the powerful demotivating and displeasing implications of deterioration aversion in an applied setting. This underscores the importance of attention to the sequence of rewards when attempting to motivate customers, employees, research participants, etc., even at the expense of the total absolute value of the rewards. Rather than attempting to

make a positive first impression with a large reward, it is advisable to start with small rewards to ensure that they increase over time.

Our results show strong support for deterioration aversion—the negative reaction to decreasing sequences—and modest support for a positive effect of increasing trends. Based on the results of the field experiment alone, we would advise managers to send only a single expensive gift, since there is no further boost in deposit balances and so as not to create future expectations. However, in the vignette experiment, we find that improving trends are superior to constant trends and to single expensive gifts. It appears that the power of worsening trends is stronger than that of increasing trends, as the effect size of worsening versus constant is greater than improving versus constant (Cohen's d = .99 vs. .42), suggesting that loss aversion does play a role in deterioration aversion. Future research should explore whether the benefit of increasing trends is powerful enough to have an economically significant effect in a field setting.

Surprisingly, in the field experiment the value of the initial gift had no effect. There was no difference in deposit balances in Phase 1 between a $100 and a $35 gift. However, in the vignette there is higher satisfaction with a single $10 gift compared to a single $4 gift. There are many potential explanations for this discrepancy. Perhaps in the vignette experiment, the receipt of gift certificates as in exchange for completing a survey triggered thoughts of what constitutes adequate compensation for one's work and time, which has a relatively concrete value. Four dollars of compensation may be viewed as insultingly low and undermine intrinsic motivation to participate in a study. In contrast, how large an unexpected gift from a bank should be is much less well defined. Another potential explanation involves a ceiling effect, as mentioned in the

discussion of the field experiment. We would never expect a meager $4 to trigger a very high amount of satisfaction, especially since the research study required a significant amount of work. However, we might expect that a gift of $35 out of the blue would dramatically increase customers' propensities to favor one bank over another. To clarify this issue, future research could assess prior beliefs about what constitutes a sufficient and extravagant gift, and the variability surrounding these beliefs.

The vignette experiment explores the mechanism underlying deterioration aversion. It shows that expectations serve as a salient point of reference against which reality is compared, as posited by Koszegi and Rabin (2006; 2009). People may not carry set priors about what constitutes a sufficient gift value (which helps explain why we do not see a difference between the $35 and $100 gifts in Phase 1 of the field experiment). However, once customers receive an initial gift, they form expectations about future gifts, and violations of these expectations mediate deterioration aversion. Future research could examine strategies for minimizing expectations. For example, specifying a one-time justification for a gift may lead people to interpret it as an exception, rather than a precedent. Additionally, "partitioning" divides experiences into discrete components (see Ariely and Zauberman 2003). Creating artificial partitions, e.g., gift campaigns that last one year, may allow companies to increase rewards over the course of the first campaign, then return to baseline values without incurring negative sentiment, before increasing rewards during the second campaign.

Finally, the findings of the field experiment contribute new evidence of the potential for field experiments to yield benefits to public policy and business (e.g., List and Levitt 2008). If

the bank that implemented the program had not randomized customers to different experimental conditions, including a no-treatment control group, they would have achieved some benefits from improved customer loyalty in some gift conditions, but would not have obtained information about whether the program worked or about which combinations of gifts were most effective and cost effective. Adding the element of random assignment increased costs very modestly but, by adding knowledge creation to the package of benefits derived from the program, greatly increased its returns.

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TABLES

Table 1
EXPERIMENTAL CONDITIONS

Condition	**Phase 1**	**Phase 2**	**Initial Account Balance**
Control	No Gift n=1,178	No Gift n=1,178	$171,769 ($109,093)
Improving Gas Certificate	$35 Gas Gift n=288	$100 Gas Gift n=277	$171,399 ($105,418)
Worsening Gas Certificate	$100 Gas Gift n=149	$35 Gas Gift n=142	$173,540 ($98,331)
Worsening Restaurant/Gas	$100 Restaurant Gift n=292	$35 Gas Gift n=137	$161,334 ($98,792)
Restaurant/No 2nd Gift		No Gift n=155	$168,524 ($101,189)

Notes: Half of the gift conditions received the reciprocation manipulation. Means and standard deviations of the account balance for the month before the gifts were sent are shown in the fourth column.

Table 2
OLS REGRESSION ANALYSIS OF CHANGE IN DEPOSIT BALANCE

	Phase 1	Phase 2		
	All data	Improving and all worsening conditions	Improving and worsening gas only	No 2nd gift and all worsening
	(1)	(2)	(3)	(4)
Gift (0=Ctrl, 1=Gift)	$26,651** ($5,839)			
Improving (0 = Worsening, 1=Improving)		$13,707* ($5,796)	$12,557+ ($6,897)	
No 2nd Gift (0=Worsening, 1=No 2nd Gift)				$13,692* ($6,677)
Baseline Deposit Balance	$.891** ($.014)	$.850** ($.026)	$.898** ($.029)	$.728** ($.028)
Customer Years	$716** ($161)	$884** ($242)	$684* ($267)	$1,231** ($285)
Gift * Customer Years	-$1,065** ($257)			
Number Of Services	$1,495 ($992)	$2,597 ($1,942)	$2,137 ($2,161)	-$1,434 ($2,113)
Market Dummy 1	-$2,872 ($3,704)	$2,137 ($7,098)	$5,658 ($7,959)	-$1,684 ($7,841)
Market Dummy 2	-$2,937 ($3,778)	$3,720 ($7,224)	$1,503 ($8,138)	-$10,903 ($8,108)
Constant	-$11,877*	-$15,649	-$18,676+	$18,897

	($5,782)	($10,137)	($11,067)	($12,682)
Observations	1907	556	419	434
R-Squared	0.679	0.673	0.710	0.626

Notes: Standard errors in parentheses.** $p<0.01$, * $p<0.05$, $^{+}$ $p<0.10$

Table 3
LOGIT

	All data	Improving and all worsening conditions
	(1)	(2)
Gift (0=Ctrl, 1=Gift)	0.661**	
	(0.138)	
Improving		0.370*
(0 = Worsening, 1=Improving)		(0.179)
Customer Years	0.007	0.023**
	(0.006)	(0.007)
Number Of Services	0.181**	0.084
	(0.044)	(0.059)
Market Dummy 1	0.108	0.143
	(0.158)	(0.215)
Market Dummy 2	-0.052	-0.245
	(0.170)	(0.226)
Constant	-1.973**	-1.007**
	(0.244)	(0.297)
Observations	1118	556
Pseudo R-Squared	0.036	0.031

Notes: Standard errors in parentheses.** $p<0.01$, * $p<0.05$

REGRESSION ANALYSIS OF WHETHER OR NOT THE SURVEY WAS RETURNED

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Table 4
CONDITIONS IN THE VIGNETTE EXPERIMENT

Condition	**1st Gift ($X)**	**2nd Gift ($Y)**	**Expectations assessed after 1st gift?**
Improving $14	$4	$10	Half of sample
Constant $14	$7	$7	Half of sample
Worsening $14	$10	$4	Half of sample
Worsening $24	$14	$10	Half of sample
No second gift $4	$4	--	No
No second gift $10	$10	--	No

Table 5
VIOLATED EXPECTATIONS MEDIATE THE RELATIONSHIP BETWEEN GIFT SEQUENCE AND SATISFACTION IN THE VIGNETTE EXPERIMENT

Dependent Variable:	(1) Satisfaction	(2) Violated Expectations	(3) Satisfaction
Worsening Trend	-0.99**	8.36**	-0.32
	(0.24)	(0.96)	(0.30)
Violated Expectations			-0.08**
			(0.02)
Constant	5.42**	-1.53*	5.30**
	(0.18)	(0.71)	(0.17)
Observations	116	116	116
R-Squared	0.131	0.401	0.220

Notes: Standard errors in parentheses, ** $p<0.01$, * $p<0.05$

FIGURES

Figure 1
TIMELINE OF PROCEDURES

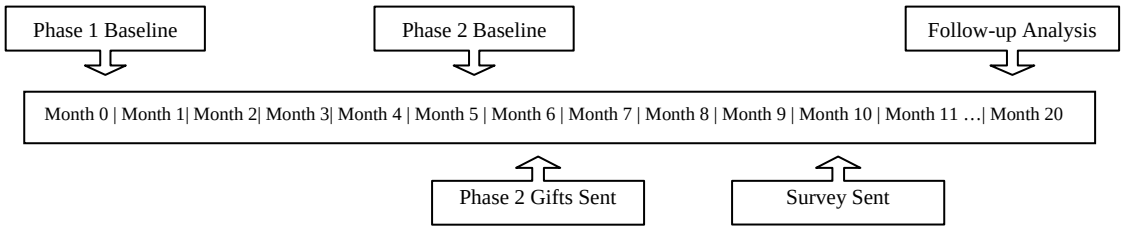

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Figure 2
CHANGE IN DEPOSIT BALANCES BY CONDITION IN PHASE 1

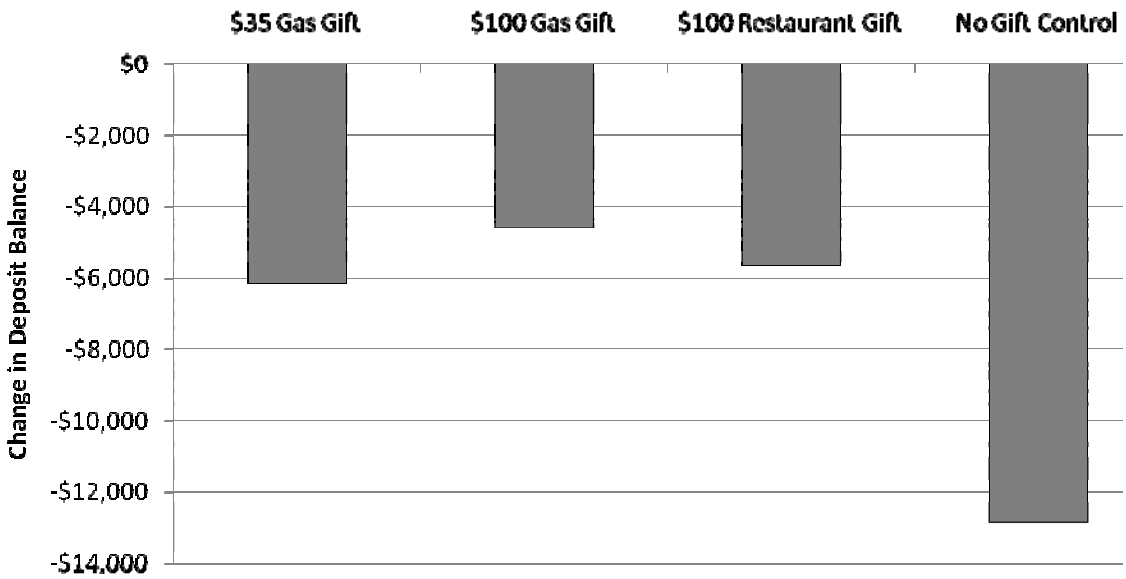
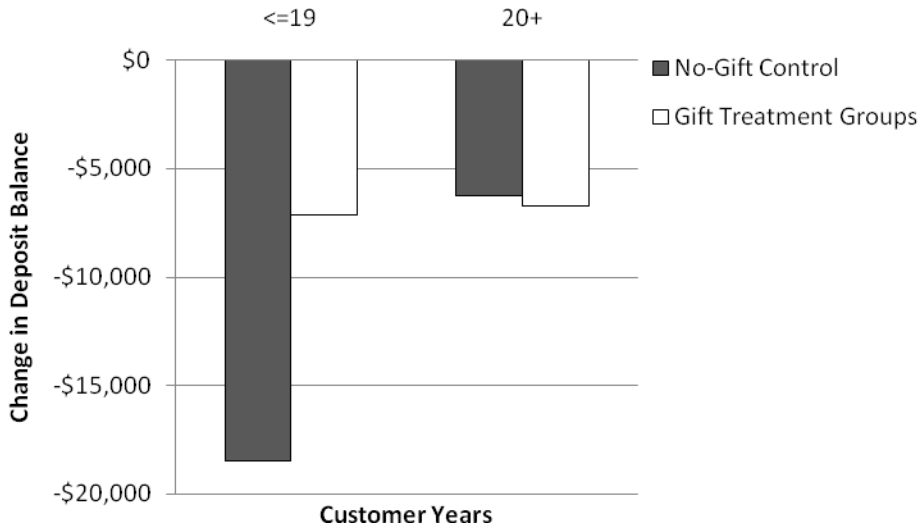


Figure 3
INTERACTION BETWEEN CUSTOMER YEARS AND GIFTS ON CHANGE IN DEPOSIT BALANCES IN PHASE 1



Note: Customer years divided by a median split.

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Figure 4
CHANGE IN DEPOSIT BALANCES IN PHASE 2

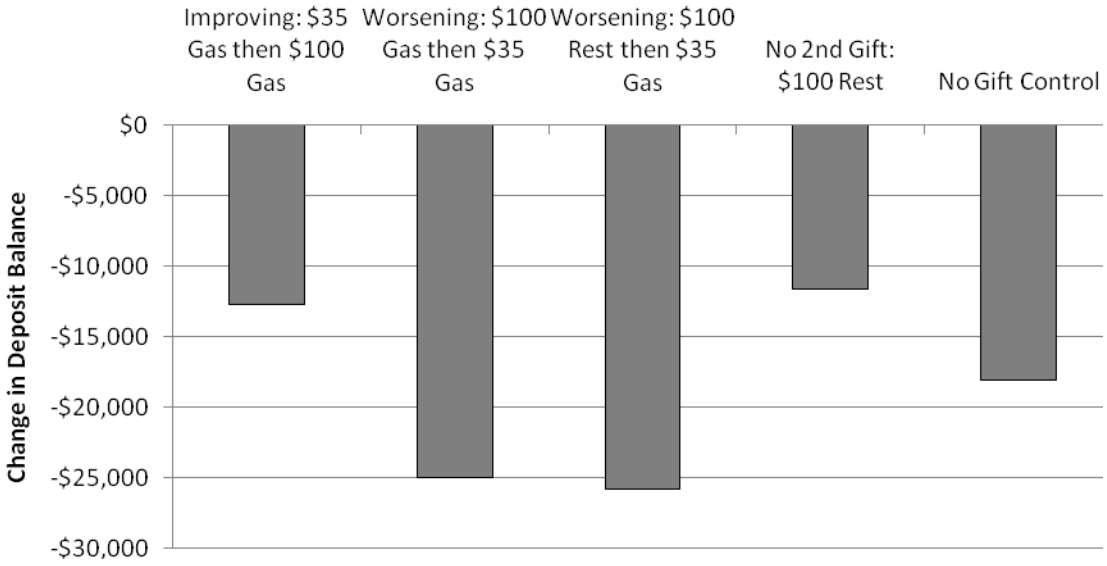

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Figure 5
RESPONSE RATES IN EACH OF THE EXPERIMENTAL CONDITIONS

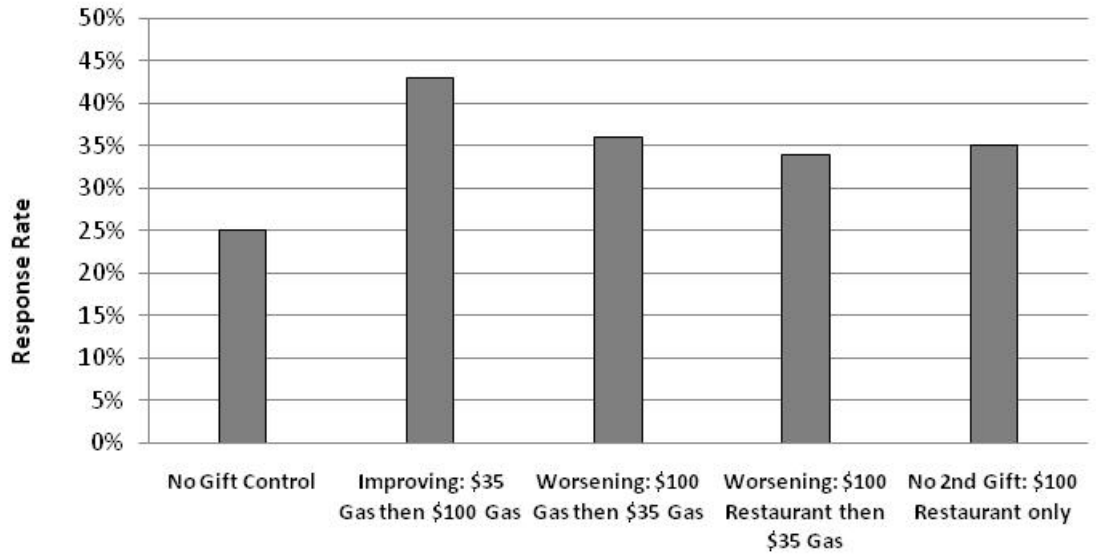


Figure 6
THE COMPOSITE OF MEASURES OF SATISFACTION, TRUST AND LOYALTY, AND THE SINGLE-ITEM MEASURE OF ENTITLEMENT ARE SHOWN BY CONDITION

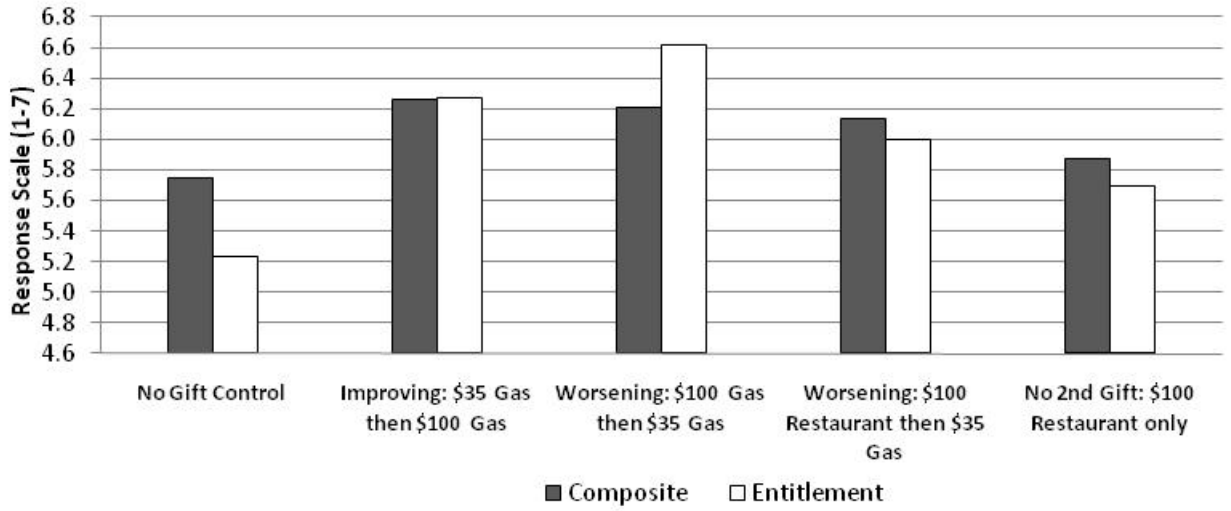
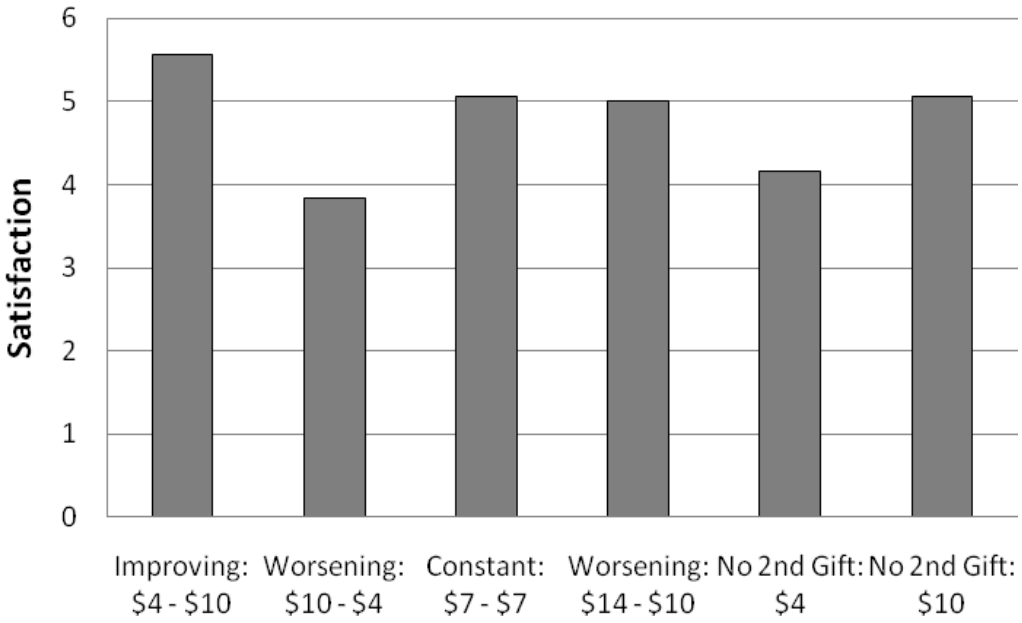


Figure 7
THE COMPOSITE MEASURE OF SATISFACTION IN EACH CONDITION OF THE VIGNETTE EXPERIMENT



Notes

[i] However, people do prefer decreasing sequences for health quality over the lifecycle (consistent with expectations about deteriorating health in old age) (Chapman 1996) and when subjects are highly knowledgeable about present-value calculations (e.g., senior accounting undergraduates) (Matsumoto, Peecher, and Rich 2000).

[ii] In addition to improvement over time, there are other factors that influence the retrospective evaluation of sequences. A simple unweighted average of the peak and end values predicts global evaluations with good accuracy (Baumgartner, Sujan, and Padgett 1997; Frederickson and Kahneman 1993; Redelmeier and Kahneman 1992). The rate of improvement is also positively associated with positive evaluations (Ariely 1998; Hsee and Abelson 1991; Hsee, Salovey, and Abelson 1994). Note that a positive end value and positive rates of change are all consistent with a preference for improving trends.

[iii] Unfortunately, the bank was not able to measure the number of people who did actually call to discuss new services.

[iv] These observations were between $1.5 and $3.3 million and were obvious outliers. The results are robust to their inclusion.

[v] Results do not change if we exclude these participants in the Phase 1 analysis as well.

[vi] Due to an oversight, only half of the restaurant/no-second-gift condition was sent the survey.

[vii] The change in this outlier was in the direction of the predicted results but dramatically increases the standard deviation.

[viii] The results are robust to using a regression analysis of the change scores (the difference between the final and initial deposit balance) and to using a multilevel model of deposit balances for each month clustered by individuals.

[ix] The results are unchanged if the constant condition is excluded from the analysis.