

**The Pain of Deciding:  
Indecision, Procrastination, and Consumer Choice Online**

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## **Abstract**

In this paper, the authors suggest that the effects of the decision environment on consumers' relative regret over an action hinder purchase behavior. They demonstrate that different augmentations of the purchase environment that manipulate the ease of avoiding choice (e.g., reducing consumers' ability to defer choice) can increase purchase behavior. They further demonstrate that the influences of such manipulations on consumers' relative regret over an action can explain changes in purchase behavior, and they discuss ways that the underlying theory may benefit both retailers and consumers.

Keywords: *Decision Making, Regret, Consumer Choice, Inaction.*

Regret and predicted regret play a vital role in decisions that consumers make every day (Gilovich and Medvec 1995; Kahneman 1995; Kahneman and Miller 1986). When consumers make decisions, such as buying a TiVo, renting a car, or casting a vote in an election, they tend to compare the outcomes of their prior and expected decisions with other potential alternatives and then act only if the balance of benefits and costs (including expected regret) is favorable. For example, when considering purchasing a TiVo, a consumer might consider not only its benefits and costs but also how he or she might feel about purchasing the current model, using it for a period, and then realizing that it would have been better to wait three months for the new and improved model.

Although actions based on the expected benefits and costs are the prescribed approach for decision making (according to a general preference structure), accounting for the possibility of future regret is not. Regret is not considered normative because it is a postdecisional emotion that reflects information that, by definition, is not available at the time of the purchase decision. (*Merriam-Webster's Collegiate Dictionary* defines regret as “sorrow aroused by circumstances beyond one’s control or power to repair.”) Thus, regret is an emotion that should have no impact on consumers’ purchase decision or their satisfaction, yet it often does (Simonson 1992; for attempts to incorporate regret in decision models, see Bell 1982; Loomes and Sugden 1982). Because regret can have such a powerful effect on choice, consumers are likely to avoid behaviors if those are prone to evoke regret for prior actions—a behavior that has been called “inaction inertia” (Tykocinski and Pittman 1998; Tykocinski, Pittman, and Tuttle 1995; Zeelenberg et al. 2002).

In this paper, we demonstrate that the structure of the choice environment, specifically aspects that first seem to be positive (e.g., the ability to defer decisions, or the mutability of decisions), may disproportionately increase consumers’ prospective regret over making a purchase and subsequently reduces purchase rates. That is, despite a constant choice set, consumers’ purchase behavior may still

change because of the regret sourced beyond the particular context of the available products. Our theoretical claims and results combine and extend insights from research on regret (Kahneman and Miller 1986; Simonson 1992), decision deferral (Dhar 1997; Dhar and Simonson 2003), the effect of too much choice (Iyengar and Lepper 2000), and the role of purchase restrictions in consumer choice (Inman, Peter, and Raghurir 1997).

### *REGRET: THEORETICAL BACKGROUND*

In principle, regret can be based on a comparison with an infinite number of other possible states (or a holistic compound of all possible regret; the “shadow regret”); however, in reality only a small subset of the possible alternative states influences expected regret. Moreover, what determines whether a person will consider a possible state as a possible substitute (a “counterfactual”) is related to the ease with which it can be vividly imagined and brought to mind in a given situation (Dunning and Madey 1995; Kahneman, Slovic, and Tversky 1982; Medvec, Gilovich, and Madey 1995). For example, in their plane-traveler example, Kahneman, Slovic, and Tversky (1982) demonstrate that people who miss their plane by a few minutes are thought to experience more negative emotions than do people who miss the plane by a few hours (when the waiting time for the next flight is kept constant). This negative emotion is presumably due to the near miss bringing vivid images of an alternate state to mind, and it is the comparison with this other state that ultimately determines a person’s happiness (Kahneman and Miller 1986). Similarly, Medvec, Gilovich, and Madey (1995) suggest that Bronze medalists in the Olympic Games compare themselves with nonwinners, whereas Silver medalists compare themselves with Gold medalists. This comparison leads to the paradoxical result in which Bronze medalists appear happier than Silver medalists. Thus, it is the ease of generating counterfactual states that has been suggested to determine the level of regret in a given situation.

Another consequence of the ease of generating counterfactual states is related to the relative regret in circumstances that are outcomes of actions as opposed to circumstances that are outcomes of inactions. In general, the distinction between regret over action and regret over inaction has been most profound in the analysis of regret (Gilovich and Medvec 1995; Kahneman 1995; Zeelenberg et al. 2002), and it relates to the distinction between errors of omission and errors of commission (Ritov and Baron 1995). To clarify this distinction, imagine Consumers P and D who are both interested in buying high-end chocolate but are uncertain about the chocolate's quality relative to its price. Consumer P purchases the chocolate and is thus susceptible to regret over action if purchasing something else or not purchasing the chocolate would have been more satisfying. Consumer D delays the decision (does not purchase the chocolate) and is thus susceptible to regret over inaction if, at a later time, she imagines that she would have enjoyed the chocolate. Note that in this work, we distinguish between decisions of not purchasing (commitments to the rejection of an offer) and decisions of delaying purchasing (noncommitments). The effects of counterfactual states are much more vivid and salient for Consumer P because alternative actions (i.e., not purchasing the chocolate and perhaps purchasing something else) are accessible, and thus several states from the infinite alternatives can be easily imagined. However, Consumer D's counterfactual thinking is somewhat ill-defined because no other specific alternative state is salient except the one in which the action would have been taken, which Consumer D cannot concretely imagine (especially because of the uncertainty at the time of decision). Thus, in prospect and in the short run, regret over action has been found to dominate regret over inaction (Zeelenberg et al. 2002). Moreover, whereas an action changes a situation in a seemingly irreversible ways, inaction opens a window of opportunity for future actions (Gilbert and Ebert 2002; Shin and Ariely 2004).

However, whereas a decision to purchase is an action and deferral of a decision is an inaction, a decision not to purchase is both, because decision making in itself can be construed as an action. In consumers' purchase decisions, regret over action and inaction maps well on the distinction among decisions to purchase, decisions not to purchase (rejection of an offer), and decision deferral. Specifically, regret over action is strong for purchase decisions (denoted as B), in which there are infinite counterfactual states; weak for decisions not to purchase (denoted as N), in which the counterfactual states are fuzzier; and weakest for decision delay (denoted as D), in which there are few counterfactual states. We define this relationship as  $B > N > D \sim 0$ . In contrast, the effect of regret over inaction, which overall is much smaller than that of action, is opposite that of regret over action. That is, regret over inaction is strong for decision delay (denoted as d), weak for decisions not to purchase (denoted as n), and nonexistent for purchase decisions (denoted as b). We define this relationship as  $d > n > b \sim 0$ . Note that the alternative not to purchase can be perceived as both an action and an inaction. Although the decision not to purchase is considered the status quo and is similar to inaction when deferral is not available, it is also similar to an action when a decision does not need to be made. Therefore, we capture the decision not to purchase by the parameter  $\alpha$ , which signifies its role as an action. The level of regret over not purchasing thus is  $\alpha N + (1 - \alpha)n$ , where  $\alpha \rightarrow 1$  when a consumer is able to defer choice and  $\alpha \rightarrow 0$  when a consumer cannot. Therefore, the relative regret over purchasing (defined as  $R^*$ ) is  $R_d^* = B - d$  in the deferral case and  $R_n^* = B - n$  in the no-deferral case. Thus, according to our assumptions, if regret over action is greater than that over inaction (i.e.,  $B > b$ ,  $N > n$ ,  $D > d$ , and  $\alpha > 0$ ), the following inequality always holds:  $R_d^* > R_n^*$  (i.e., the relative regret over purchasing when choice can be deferred is greater than that when choice cannot be deferred). In line with this logic, we predict that the increase in the relative regret over purchasing hinders purchase behavior, keeping all else constant:

H<sub>1</sub>: Having the possibility to delay choice increases the relative amount of regret from action.

Our conceptualization of the two aspects of regret (over action and over inaction) and their mapping onto decisions (to purchase, not to purchase, and deferral) were supported in a pretest, in which we asked respondents their level of regret (i.e., we measured B,  $\alpha N + (1 - \alpha)n$ , and d) . Respondents' reports of expected regret were high for purchasing, low for not purchasing, and lowest for delaying a decision (verifying our assumptions). Note that this perspective on regret in consumer purchasing suggests that, in general, consumers systematically under act (under purchase) in the marketplace because actions are likely to be accompanied by a high levels of regret, above and beyond preference considerations.

Because the option not to purchase is perceived as an action (requires commitment and may be a change from the status quo), cases that do not have such an option will have lower relative regret for purchasing (H<sub>1</sub>) and thus be more likely to promote purchase decisions than will cases in which consumers can chose to delay the choice. With respect to purchase decisions, this situation implies that the availability of an option to delay choice disproportionately increases anticipated regret over purchasing, which in turn adversely influences the propensity to act (purchase). We summarize the implications of the relative regret analysis on purchasing and the implied underlying process in H<sub>2</sub> and H<sub>3</sub>, respectively.

H<sub>2</sub>: Elimination of the option to delay choice disproportionately increases decisions to purchase rather as opposed to decisions not to purchase.

H<sub>3</sub>: The relative regret of purchasing mediates the increase in the purchase probability when deferral is not an option.

The extent to which deferral hinders purchase decisions beyond consumer consequential preferences is important for marketers because it not only directly influences the probability of a

transaction but also suggests that the decision environment's structure can influence regret, a set of parameters into which marketers have much input, both in physical and in online environments. Next, we present a set of experiments that are designed to test this idea within the general framework of online commerce.

### *EXPERIMENT 1: NEXT ACTION COUNTS*

Our central proposition is that the possibility for choice deferral increases the ease of generating counterfactual states and, consequently, the relative action-based regret experienced in a choice situation. Moreover, because the role of regret over action is greater than that of regret over inaction, relative regret leads to a decrease in the propensity for action, for example, to purchase products. As an initial test of this idea, we created a Web site on which we sold products to people in a Northeastern university. There were two versions of the Web site, which differed on one design element: shoppers' ability to defer choice. We predicted that, compared with the case in which choice deferral was possible, when it was eliminated, the tendency of shoppers would be to purchase rather than not to purchase ( $H_2$ ).

#### ***Method***

*Participants.* Participants were part of a university population and were recruited through an e-mail announcement. They were encouraged to participate through the offer of products at bargain prices. Because we designed the experiment to mimic a real shopping experience (i.e., incentive compatible), participants were not paid for participation, and they purchased products with their own money. The only incentive to participate was the opportunity to purchase products at low prices (we set prices 50% lower than their online purchase price).

*Procedure and design.* Throughout the duration of the experiment, participants could log on to the Web site with a valid university e-mail, where they were randomly assigned to one of the two

conditions and were given appropriate instructions. As with a typical purchase experience on the Web, participants could leave the site and return at a later point (the experiment lasted about four months, but the longest interaction we observed was eight days); participants' assignment to a condition remained constant throughout their entire shopping experience. The Web site itself was constructed with a Java applet and a MySQL database to allow recording of each user's mouse click.

After participants logged on, they viewed the main screen, which had nine buttons representing the nine product categories from which they could shop (see Figure 1, Panel A). Participants were informed that at the end of their shopping experience, one of the products would be randomly selected, and the outcome for just that product would be carried out (we expand on this in the "Stimuli" section).<sup>1</sup> When participants clicked on a category button, two products that were available for purchase in that category appeared on screen (see Figure 1, Panel B). The category screen displayed photos and descriptive information of the two products available, together with their retail and discounted prices. From the category screen, participants could then return to the main screen, where the category button would automatically be updated with a check mark to reflect the visit. In addition, the main screen had both a "checkout" button and a "continue later" button. Participants used the "checkout" button when they wanted to end their shopping experience and to be contacted for payment and delivery details. They used the "continue later" button when they wanted to stop their shopping and return later.

**Figure 1 here**

The experiment had two conditions: control and limited-flexibility. In the control condition, the full retail price was noted, and all products were offered for sale at a 50% discount. Participants who entered a category screen in this condition could buy the product shown at the top, buy the

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<sup>1</sup>We used a probabilistic purchase approach to obtain more data per participant while avoiding dependencies across decisions based on budget constraints.

bottom product, indicate that they were not interested in either product, or indicate that they might return later to decide. Note that because control participants could return to the Web site and change their decisions (if they had not yet checked out on the main screen), the option to defer decision was implicit even without the “maybe later” button. Moreover, we told participants in advance that when they checked out, any choice screens that they had marked as “maybe later” would be considered a nonpurchase decision. The limited-flexibility condition was similar to the control condition with one important difference: The first decision (i.e., the first button to be clicked) in a category was irreversible and final. If participants in this condition elected to buy a product, their choice was final, as was their decision not to purchase in a category. In line with this irreversible decision, because there was no option to defer choice in this condition, we did not include the “maybe later” button. To reinforce this difference between the conditions further (in addition to the “maybe later” button and the instructions), on the top of the screen, participants were shown a constant one-line reminder of the specific condition. In the control condition, the sentence was, “Remember, you may revisit this screen and your decision as many times as you want”; in the limited-flexibility condition, the sentence was, “Remember, once you click any button, your decision is final and cannot be changed.”

*Stimuli.* We chose the eighteen products (nine pairs of substitute products) we believed would be of interest to participants (for product names and prices, see Table 1). We set the prices of all products at 50% off the purchase price; ten independent judges from the same population evaluated the deals as attractive.

Because we allowed participants to make decisions in more than one product category, the potential amount of data generated by each user increased. At the same time, a repeated-measure design, in which participants pay for products with their own money, introduces possible between-decision dependencies due mostly to budget considerations. For example, imagine a participant who

likes one of the offered CDs and indicates interest in purchasing it. The participant later encounters the ice-cream certificate, which is even more desired, but given previous spending history decides not to purchase the ice-cream certificate (in the control condition, the participant can return to the CD category page and change the decision).

To preclude such dependencies, we told participants that after they finished their shopping and checked out, the computer would randomly choose one product category, and their decision in that product category would be the final outcome of the shopping process. We further instructed participants that in this procedure, they should treat each decision in each product category as if it were the only one they were making (because they did not know in advance which category they would choose and each category had exactly the same probability to be chosen).<sup>2</sup> As we show in the analysis, this approach was successful, and the purchase patterns did not show any dependencies across purchases.

**Table 1 here**

### ***Results***

The data's central aspect was a series of choices in a certain order for each participant across the two conditions. Such a panel-data structure may raise suspicion that the treatment's real effects are confounded with individual heterogeneity, state dependence (a lingering effect of previous choices), or a possible interaction between these and product heterogeneity (Alvarez and Arellano 2003; Heckman 1991; Honore and Kyriazidou 2000). As we mentioned previously, we designed the experiment to minimize such effects by randomly selecting only one product category to determine the outcome of the experiment. Thus, in theory, participants' decisions in different product categories might be independent, but in practice such dependencies might still persist. To test this

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<sup>2</sup>The computer chose a product category regardless of whether a participant visited it, which prevented incentives for strategic behavior on the part of participants. Indeed, almost all participants shopped in all product categories.

problem empirically, we ran a random-effects Logit model with both lagged choices and lagged interactions.<sup>3</sup> The results of the lagged models show that this potential bias had little, if any, effect on the dependent measures and that this effect was small in all the specifications we tested, such that the differences between conditions remained throughout. Based on the success of the implementation of independence (one product randomly selected), the results we present next assume independence of choices.

The average probability of purchase in the control condition (.18) was significantly smaller from that in the limited-flexibility condition (.31) ( $t[288] = 2.372, p < .02$ ). This difference was similar across almost all product categories (see Table 2). However, our main thesis pertains to the reason participants purchase more in the limited-flexibility condition. If we attribute the difference between conditions to the relative regret between actions and inactions, we should observe a differential effect of the addition of the maybe-later alternative ( $H_2$ ). When we examine participants' choices in both conditions, it appears that the cause for the difference in purchase rates is linked directly to the usage of the maybe-later option. Consistent with our suggested theory, the average propensity to delay choice (16% of decisions) cannibalizes the share of the option to purchase (a decrease of 13%) significantly more than the share of the option not to purchase (a decrease of 3%) ( $\chi^2(1) = 4.51, p < .04$ ), thus rejecting the null hypothesis that the increase in purchase was caused merely by the decrease in the number of available alternatives. This pattern also suggests that participants who delayed choice in the control condition did not do so because of conversational norms (i.e., they really intended not to purchase and the maybe-later choice was a convenient way to

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<sup>3</sup>We estimated the probabilities we used to test the difference between conditions using the following model, which includes first-order lagged interactions of choices with prior product categories (this outperforms a model with first-order lagged choices) and an individual-specific random effect:  $\Pr(y_{it} = 1) = \frac{e^{\alpha_i + \beta'x_{it} + \gamma y_{it-1} \cdot x_{t-1}}}{1 + e^{\alpha_i + \beta'x_{it} + \gamma y_{it-1} \cdot x_{t-1}}}$ , where  $y_{it}$  is the binary choice of individual  $i$  at the relative position  $t$  in the sequence of choices,  $\alpha_i \sim \text{Gaussian}$  is an individual-specific random effect, and  $x_{it}$  includes a condition dummy and a product category dummy.

indicate such a preference). Indeed, in the limited-flexibility condition, most participants who would procrastinate chose to purchase.

### **Table 2 here**

Another way to examine the effect of the maybe-later option is to examine individual behavior over time. The experimental design enabled us to observe instances in which participants returned and reexamined their initial choice (an analysis that was possible only in the control condition). Of the 290 decisions to return later, only 34 (11.72%) participants actually revisited. In line with work on time discounting and procrastination (O'Donoghue and Rabin 1999), most of the participants who came back to reexamine their decision chose the maybe-later option again. Only 8 decisions (2.75%) were ever changed: 6 from no-purchase to purchase and 2 from no-purchase to "maybe later". The pattern of behavior in the maybe-later option, together with the attractive prices of the products offered, suggests that participants who chose this option did not do so to search for more information and return later to make a more educated and better choice but did so to avoid making a final decision. After all, even participants who returned mostly deferred their choice again.<sup>4</sup>

After participants checked out but before leaving the Web site, they indicated their levels of satisfaction with the purchase process and the choices they made. There was no difference between the two conditions on both measures ( $p > .15$ ).

Finally, it is worthwhile to examine the time that participants took to make their decisions as an indication of the underlying process, which we refer to as "decision time." For our analysis, we measured decision time from the first time a participant entered a category screen to the time he or she made a selection on the screen (purchase, no-purchase, or maybe later). Recall that before

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<sup>4</sup>We contacted some of the participants who deferred their choice to inquire about the reasons they did not return. The most common response resembled focalism (e.g., "I really wanted to return, but kind of forgot about it"; Gilbert et al. 1998).

entering the category screen the participants did not know what the product offers in the category were. Thus, the measure of decision time included participants' understanding the offer and making a decision. A comparison of the average decision time across the two conditions revealed slightly longer decision times in the control condition ( $M = 14.05$  seconds) than in the limited-flexibility condition ( $M = 11.54$  seconds), but this difference was not statistically significant ( $t[288] = 1.295, p = .196$ ).

### ***Discussion***

Our main proposition is that the possibility of delaying choice can increase the relative amount of regret that a person experiences in a choice situation, which in turn disproportionately decreases decisions to purchase. Thus, our experiment was a first step in examining these general propositions. In addition, in the experiment, consumers made purchase decisions about real products, with their own money, on an online Web site. The results show that the availability of an explicit option to delay decisions substantially decreases consumers' propensity to act and purchase products.

The limited-flexibility condition restricts consumers' ability to change their mind, which is an *ex ante* manipulation that consumers might not welcome. Therefore, in a paper-and-pencil study, we described the two conditions to another group of subjects and asked which one they would prefer; the results point to a preference for decision environments that do not restrict flexibility of choice (see also Gilbert and Ebert 2002). As a consequence, reactance and decreased purchase tendency might be expected in the limited-flexibility condition (Brehm 1966). Yet in line with our predictions about the relative amount of regret as a function of consumers' ability to delay decisions, the results show that elimination of the ability to delay decisions increases purchase frequency. Moreover, most of this behavioral shift can be attributed to a shift from indecision to decision and subsequently to a decision to purchase.

Although the purchase decision results support our hypotheses, the results from Experiment 1 are limited to the outcome measures. To delve more deeply into the process that underlies the results, we repeated the fundamental experiment in a lab environment. In this version of the experiment, subjects were paid for participation, and they could use the money to purchase the goods. Because we paid participants to participate, their purchase decisions under these conditions should not be interpreted as indication of their tendency to purchase in the real world. Nevertheless, we assume that even under laboratory conditions, participants can introspect about their behavior in the real world and provide additional information about both their perception of the situation and their motivation. To obtain this additional information, after each decision they made, we asked the lab participants to rate how regretful they might find each of the following decisions: purchase, not to purchase, or delay in the control condition and purchase or not to purchase in the limited-flexibility condition. Then, we asked them to indicate their maximum willingness to pay (WTP) (their reservation price) for each of the goods offered.

The choice data replicated our online study (20.16% of decisions were purchases in the control condition, and 31.75% were in the limited-flexibility condition). In addition, and more important to the current inquiry, each participant rated the amount of regret they expected to have from choosing each of the options (purchase, not to purchase, or delay choice). We converted the ratings of regret to Z-scores to represent the relative amount of anticipated regret each participant experienced. This analysis showed that whereas the modal, most regretful act in both the control and the limited-flexibility conditions was the act of purchasing (means = .26 and .11, respectively), the modal, least regretful act was delaying the decision in the control condition (mean = -.39) and not purchasing in the limited-flexibility condition (mean = -.32). Deciding not to purchase in the control condition yielded an intermediate level of regret (mean = -.12). Furthermore, the most regretful

choice in the limited-flexibility condition (i.e., purchasing) generated significantly less regret than the same choice in the control condition ( $t[362] = 2.43, p = .016$ ), but the least regretful did not. Our hypothesis pertaining to the role of relative regret predicts that this difference in relative regret, which is generated by the different conditions, mediates the effect of the condition on participants' purchase behavior. We confirmed this hypothesis by adding the measure of relative regret of purchasing to the probit analysis (i.e.,  $R_d^*$  and  $R_n^*$ ), in which we regressed participants' choices on a condition dummy and on their WTP (to account for individual heterogeneity in preferences). Before we added relative regret to the analysis, it revealed a significant effect of condition on choice ( $\beta = .19, t[392] = 2.62, p = .009$ ). The addition of relative regret revealed a significant effect on choice ( $\beta = -.72, t[359] = 4.84, p < .001$ ) and mediated the effect of the condition ( $\beta = .15, t[359] = 1.92, p = .054$ ), which was significant ( $\chi^2(2) = 15.01, p < .001$ ).<sup>5</sup>

Thus, we find that the purchase behavior of participants in our laboratory studies replicated that of participants in the field study. More important, our measurements of self-reported anticipated regret provided support for the proposed theory. Limiting participants' ability to defer their choice decreased the relative regret of purchasing, which subsequently increased their tendency to purchase.

### *EXPERIMENT 2: LIMITING FLEXIBILITY*

Although Experiment 1's results suggest that restriction of flexibility is in both consumers' and retailers' best interests, the survey results suggest that consumers tend to shy away from Web sites that restrict flexibility in ways similar to those in Experiment 1. In other words, the long-term strategy of offering consumers a purchasing platform in which the next click counts and there is no going back might not appeal to consumers in the marketplace. Thus, the applicability of the advantages of limiting flexibility (to reduce regret in general and regret over action in particular) to

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<sup>5</sup> Moreover, addition of the relative regret of purchasing to the analysis more than tripled the  $R^2$ .

any real-life situation depends greatly on retailers' ability to limit flexibility in a way that does not discourage consumers.

A mechanism that might be helpful in limiting flexibility while not appearing too adverse to consumers is the "discount lifetime" approach. For example, when a person visits a car dealership, it is likely that he or she is met by a salesperson who proposes the ability to offer a deal that day but not the next day. Indeed, these types of offers are common, and in most cases, consumers have become accustomed to them. In Experiment 2, we use a limited duration discount as the mechanism that limits the ability to delay decisions, in the hope that the mechanism will show the same effect on purchasing as Experiment 1's mechanism but lack its negative appeal. Such replication would strengthen our claim that the possibility of inaction in the form of choice deferral underlies the effects at hand.

Although it is possible to restrict consumers' decision time by applying time limits to discounts, short time limits risk the creation of time pressure, which can lead to different consequences (Payne, Bettman, and Johnson 1993; Svenson and Maule 1993). For example, in general, the effects of time pressure on decision making include reductions in information search and processing, changes to the types of information considered, and, finally, induction of wrong judgments and evaluations. Thus, the expected result of the influence of time-limited discounts depends on the extent to which the time limit creates *time pressure* in the decision. In cases in which the time limit does not create time pressure (e.g., limiting the time but providing ample time for decision making), we expect the results to show a pattern similar to that of Experiment 1, in which restriction of flexibility increases the tendency to purchase. Conversely, in cases in which the time limit creates time pressure, we expect the opposite pattern to occur, in which restriction of flexibility decreases the tendency to purchase and increases adoption of the status quo (not to purchase). Thus,

we expect the effect of time limits to have an inverted U shape on the tendency to purchase: a low tendency when time limits are short and very long (infinite) and a high tendency when time limits are midlevel.

On the basis of the preceding arguments, we used three different levels of time limits: one long, one short, and one medium. For the long time limit, we used six months. In this condition, the discount was available for as long as the site was functional. For the short time limit, we used a time frame that was approximately equal to the expected time needed to make the decision but not much longer. The argument is that we wanted subjects to have real time pressure but wanted to limit interference with the decision process as much as possible. Thus, for the short-time-limit condition, we used the timing data from Experiment 1 and set the time limit at the 90th percentile of the time participants took in Experiment 1, that is, 16 seconds. For the medium time limit, we used a time frame that would not limit the decision but would make the cost of deferral salient. Thus, we doubled the time of the short-time-limit condition, using 32 seconds for this condition.

### ***Method***

*Participants and design.* Participants were mostly students from an East Coast university who were recruited through messages to various e-mail lists. We encouraged them to participate by telling them that they could buy “cool products at bargain prices.” People interested in participating were given the address of the experiment’s Web site. Because we designed this experiment to be incentive compatible, participants were not paid for participation, and they purchased products with their own money.

We constructed an e-commerce Web site similar to the one we used in Experiment 1. Similar to Experiment 1, this was a real choice experiment conducted in an online environment; it consisted of three time-limit conditions: short (16 seconds), medium (32 seconds) and long (6 months). In all

conditions, we offered products at a 50% discount off their original price. In the long-time-limit condition, the discount was always available. In the short- and medium-time-limit conditions, the discount was available only for the specified time limit, after which the prices returned to the full listed price.

*User interface.* Overall, the procedure was similar to that used in Experiment 1, though the particular design (i.e., location of photos, text messages, and buttons) was different. In all three time-limit conditions, we added a vertical progress bar on the left-hand side of the screen. When participants first entered a product category screen, the bar was always initialized to full (100%) and descended to empty (0%) at a rate that corresponded to the available discount lifetime. When the bar reached zero, the discounted price offer disappeared, and only the retail price remained. Participants could still purchase the products but at the regular retail price.

*Stimuli.* Most of the stimuli we used in Experiment 2 were the same as those in Experiment 1, except for a few product selections because of their limited availability (see Table 1). In particular, we eliminated the “tools” product category and added two other product categories (T-shirts and coffee mugs with the university logo).

## ***Results***

Participants could make one of four choices in each product category. They could buy the first product, buy the second product, decide not to purchase any product, or postpone their decision to a later time. Because there was no systematic difference between the first and the second product, we pooled the choices within the categories and presented them as one purchase. At some point, participants eventually pressed the “checkout–finalize my choices” button, which converted all the decisions that were left as “maybe later” to nonpurchases. This procedure was thoroughly explained

to participants. Table 3 displays the proportion of purchases in each product category across the three conditions.

**Table 3 here**

To determine the significance of the differences between conditions, we compared the condition coefficients in a probit of the binary choice data.<sup>6</sup> As we show in Table 3, the probability of purchase followed an inverted U shape: Participants in the short time limit (16 seconds) purchased less than those in the medium time limit (32 seconds) ( $\chi^2[1] = 7.59, p = .006$ ), those in the medium time limit (32 seconds) purchased more than those in the long time limit (six months) ( $\chi^2[1] = 10.94, p < .001$ ), and those in the short time limit (16 seconds) purchased about the same as those in the long time limit (six months) ( $\chi^2[1] = .18$ , not significant).

When we interpret the results, it is important to test whether the short time limit was successful in creating time pressure on decisions and that the medium time limit did not create such time pressure. In examining this aspect of the decision, we used the time that respondents took to make decisions. The results show that the time to make a decision in the short time limit ( $M = 8.19$  seconds) was shorter than that in the medium-time-limit condition ( $M = 10.25$  seconds;  $t[417] = 3.35, p < .001$ ) and in the long-time-limit condition ( $M = 10.99$  seconds;  $t(437) = 3.16, p < .001$ ); the medium- and long-time-limit conditions were not significantly different from each other ( $t[447] = .82$ ). The similarity in decision times between the medium- and long-time-limit conditions is an important indication of the nonbinding nature of the medium-time-limit manipulation. If the discount durations were binding, we would expect to find a shorter decision time in the medium-time-limit condition than in the long-time-limit condition. Another indication of the medium time limit's

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<sup>6</sup>As in Experiment 1, the data we collected in Experiment 2 are several choices by each individual, in a certain order, under one condition. We handled this panel data structure in the same way as in Experiment 1. The results are robust to heterogeneity and state-dependence biases.

nonbinding character comes from the decision time itself ( $M = 10.25$  seconds), which was quite different from the actual time constraint (32 seconds)

Another way to interpret the propensity to purchase across the conditions is through examination of the time course of the decisions. Recall that at any time, participants in Experiment 2 could revisit a decision to purchase and change it to a decision not to purchase. Note that the truly optimal action would have been to indicate a purchase intent on any slightly attractive product and return later to consider whether to purchase it or to change it to a nonpurchase. The ability to revisit a decision created another asymmetry between the short and medium time limits and the long time limit. In the long-time-limit condition, the discount was available on practically every revisit, whereas in the short and medium time limits, the discount was available for only the specified duration, and in revisits after this point, participants encountered the product at the full price. Given participants' ability to change their decisions, it is notable that not many changed their decisions. Of the 976 total decisions by 98 participants, 89 (9.12%) were revisits to decisions already made. Of participants who returned to reconsider their decisions, 45 (53%) did not change their mind and only 10 (1%) changed their decision to a purchase decision. Thus, if a participant decided to purchase the first product, in most cases, he or she made the same decision on return. In total, when a decision was made, 95.59% were never changed.

As we mentioned previously, we wanted to obtain a more direct measure of our hypothesized relationship among the manipulation, relative anticipated regret, and purchase behavior. Thus, we replicated the manipulation in the lab and measured the level of anticipated regret over each of the potential alternatives on a 0- to 10-point scale. The results were standardized within participants and subjected to a mediation analysis (when we controlled for individual differences using their reported WTP). The analysis confirmed our hypothesis: although the time-limit manipulation had a significant

effect on increasing purchase rates ( $\beta = .29$ ,  $t[539] = 2.23$ ,  $p = .026$ ), it also had a significant effect on decreasing the relative regret over deciding to purchase ( $\beta = -.14$ ,  $t[522] = 2.62$ ,  $p = .009$ ). Addition of this measure to the first analysis revealed a significant, negative effect for the relative regret over purchasing ( $\beta = -.63$ ,  $t[516] = 5.83$ ,  $p < .001$ ), and it mediated the effect of the time-limit condition ( $\beta = .24$ ,  $t[516] = 1.71$ ,  $p = .088$ ). The mediation was significant ( $\chi^2(1) = 8.74$ ,  $p = .003$ ).

### ***Discussion***

As we predicted, limiting flexibility by associating a cost with decisions to delay increases consumers' propensity to decide and consequently to purchase. Limiting participants to a time limit of 32 seconds significantly increased purchasing. At the same time, the short-time-limit condition demonstrated an important boundary condition for this effect: Although 16 seconds were sufficient for most participants to make a decision, the short time limit influenced their decision process and resulted in a lower tendency to purchase.

Although increasing purchase rates from 20% to 35% (see Table 3) is in retailers' best interests in the short run and, most likely, in the long run, an important question is whether restricting flexibility is a service or disservice to consumers. It is impossible to answer this question in general, but it is possible to test whether the increase in sales can benefit both retailers and consumers. To the extent that regret creates excess difficulty in making a purchase decision (beyond consumerist value as a self-control device), increasing the tendency to purchase might be in line with both retailer and consumer welfare. To test this idea, we asked 44 participants from the same population as that in Experiments 1 and 2 to indicate their maximum WTP for the products in Experiments 1 and 2. Each product was described in written form and with a picture as in the Web-based experiments, and we asked participants to indicate their maximum WTP on price levels on a scale that ranged from 0 to 1.5 times the product's retail price. We translated the results to an implied market share for each

product at the price offered in the experiments, and we then averaged them to yield the predicted market share for the product–price bundles. The predicted average purchase rate was 61%, which is in contrast to the lower share of purchasing in Experiments 1 and 2 (less than 20%); this purchase rate suggests that increasing the propensity to purchase was not only in retailers’ best interests but also in consumers’ best interests.<sup>7</sup>

In summary, in Experiments 1 and 2 we manipulated the decision environment while keeping the choice-set constant. We restricted decisions in two different ways which increased the propensity to purchase. We used significantly different approaches in the two experiments to reduce participants’ ability to delay decisions or its appeal: We limited both the action to the next move in Experiment 1 and the time to consider the discounted offer in Experiment 2. The similarity in findings between the two approaches provides additional credence to the proposition that the mere possibility to delay choice increases consumers’ anticipated regret and thus hinders their propensity to take positive actions away from the status quo, which effectively reduces their tendency to purchase.

### *EXPERIMENT 3: INTUITIONS ABOUT LIMITING FLEXIBILITY*

The results of Experiments 1 and 2 indicate that limiting consumers’ ability to delay a decision decreases regret and increases purchasing, but the question remains whether consumers will frequent retailers that offer such limited services. That is, it is not whether this is good for consumer welfare, but rather whether consumers will select limited flexibility when it is in their best interests. To the extent that the answer is positive, a change in retailers’ strategies would be simpler because consumers might perceive the offer of limited deals as benefits, which in turn will increase their long-term satisfaction with the firm. On the other hand, to the extent that consumers do not intuit the

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<sup>7</sup>It might be argued that the 50% discount is sufficient to imply this conclusion, especially for the gift-certificate categories.

benefits of limited offers or, even worse, have the opposite intuitions, such offers might be self-defeating because consumers will actively decide to avoid them. Thus, to gain some insight into these questions, we collected prediction data on the effect of the limited-purchasing environment (i.e., low flexibility).

### ***Method***

*Design and stimuli.* Seventy-seven pedestrians at a park in a major metropolitan city agreed to answer a short decision-making survey. They were later given candy and thanked for their participation. The experiment was a hypothetical choice survey with a 2 (flexibility level: high versus low)  $\times$  2 (flexibility type: the ability to delay choice versus more perceived alternatives) mixed design. We manipulated flexibility level within and flexibility type between subjects. The survey described two consumers, A and B, who were shopping for a CD wallet and found a deal in which a particular wallet (a color photo was included) was offered for \$5 instead of \$10.

We manipulated flexibility through the descriptions of the two different environments: Consumer A was always in the high-flexibility environment, and Consumer B was always in the low-flexibility environment. In the ability-to-delay flexibility manipulation, Consumer A could delay her choice for two additional months, whereas the discount Consumer B faced ended the same day. In the more-possible-alternatives flexibility manipulation, Consumer A's town was described as having seven other stores that sold CD wallets, whereas Consumer B's town had only one other store.

*Dependent measures.* We asked participants for their prediction of whether each consumer (A and B) would decide to buy the CD wallet and then to estimate the consumer's level of difficulty in making the decision. We also asked participants to indicate which consumer would take longer to make the decision. All response scales were from 0 to 100, in which higher ratings signified higher levels of each measure.

## **Results**

*Manipulation check.* As a manipulation check, we asked participants to rate the amount of flexibility each consumer would have perceived to have while making the decision. The manipulation check indicated that we manipulated decision flexibility successfully. Participants' mean ratings of the amount of flexibility for each consumer under high versus low flexibility (A versus B) were 79.19 and 21.49, respectively, for the flexibility to decide in the future ( $t[37] = 8.31, p < .001$ ) and were 68.10 and 29.13, respectively, for the flexibility of more stores selling similar products ( $t[39] = 6.71, p < .001$ ). Because both forms of flexibility had similar effects in the subsequent measures as well, in the analysis that follows, we treat flexibility as one manipulation.

The main dependent measure was participants' predicted choices for the two consumers. The proportion of participants who predicted the decision to purchase for Consumer A (15.02%) was significantly different from those who predicted the decision to purchase for Consumer B (80.26%) ( $t[72] = 12.62, p < .001$ ). The results show that under these conditions, respondents can intuit the results implied by Experiments 1 and 2.

The next dependent measure was based on the two questions pertaining to the difficulty of making a decision and the amount of time that participants predicted the two consumers would spend thinking about the decision. To capture the overall difficulty of the decision, we joined and normalized the two questions to mean zero and scaled them between  $-1$  and  $1$ , where  $-1$  means that Consumer A's decision was more difficult and  $1$  means that Consumer B's decision was more difficult. In line with the predicted pattern of choice ( $B > A$ ), the predicted mean difficulty was  $-.56$ , which was significantly different from zero ( $t[74] = 8.26, p < .001$ ), indicating that participants predicted Consumer A's decision to be significantly more difficult. A follow-up analysis using a probit model estimated the effect of decision difficulty on the decision itself (A or B). In this analysis,

the dependent measure was choice, and we added decision difficulty as another predictor. The results indicate that greater decision difficulty decreases the propensity to purchase ( $t[137] = 3.51, p < .001$ ).

### *Discussion*

With regard to the findings of Experiments 1 and 2, we believed that both a between-consumer design and a within-consumer design were important. That is, there are cases in which consumers consider just one retailer (e.g., monopolies, transportation costs, loyalty) and in which they consider multiple retailers (e.g., shopping malls, internet). Experiments 1 and 2 predict that limiting flexibility is in the best interest of both retailers and consumers, but they are between-subjects designs, and thus the question remains whether consumers will select the limited- flexibility option when given the chance to do so. Moreover, to the extent that consumers do not want limited flexibility, the market's competitive environment will provide such opportunities and undermine the possible benefits of limited flexibility. Thus, we designed Experiment 3 as a first step in the process by asking respondents about the likelihood of choice under limited and unlimited flexibility. The results show that respondents intuit the effects, predicting that the limited purchase environments increase the probability of purchase while reducing the difficulty of the decision, even when the product is not a necessity. The results are encouraging because they imply that limiting flexibility can be an effective mechanism.

### *EXPERIMENT 4: SCARCITY AND SIGNALING*

As we mentioned previously, we asked participants in the laboratory experiment to indicate their maximum WTP for each product. Beyond its value in accounting for individual preferences, the WTP measure enables us to test whether the limited-flexibility conditions created a perception of scarcity and thus increased product valuations. The results of the reservation prices showed no effect across the different conditions (means = \$6.2, \$6.1, and \$6.4, in the control, limited, and time-limit

conditions, respectively), implying that the effects of increased purchasing due to limited flexibility were not driven by a perception of scarcity or by increased valuations. The result is not surprising given that participants in the experiments were aware of the procedures ahead of time and that discounts would expire only when participants themselves chose to enter a product-category screen. Nevertheless, we wanted to test this alternative explanation more rigorously in Experiment 4 by imposing the limitation in flexibility in the form of an expiring discount on only one of the products. If scarcity (Cialdini 2001) indeed causes an increase in purchasing, we should observe only an increased tendency to purchase the limited product. If our regret hypotheses are correct, we should observe a more holistic effect of the limitation on the decision process. However, under a scarcity-signaling account, only the limited product should be influenced, and, in particular, purchase rates for the limited product should increase.

### ***Method***

*Design and stimuli.* The general method was identical to that in Experiment 2, including the products, Web site design, and participant recruiting and incentives. Participants were 162 graduate students from an East Coast university. The experiment had two conditions: a control condition with an unlimited discount and a scarcity condition. The scarcity condition was identical to the medium-time-limit condition in Experiment 2, but with one important difference: The exploding discount was associated with only one of the two products (selected randomly). When the bar reached 0%, only the discount for the chosen product disappeared.

### ***Results***

Participants made 1030 decisions over the course of the experiment. Participants could make one of four choices in each product category: They could buy the limited product, buy the nonlimited product, decide not to purchase any product, or postpone their decision to a later time. At some

point, participants eventually pressed the “checkout–finalize my choices” button. Any decision that was left as “maybe later” at that point was treated as a nonpurchase, as we specified in the instructions. To answer the question whether the increase in purchase rates was caused by the perception of scarcity, we compared the share of the limited product offer with that of the unlimited product offer. Participants made 732 decisions in the time-limited condition, 117 of which were decisions to purchase. In those decisions, participants chose the limited product 52 times (44%) and the unlimited product 65 times (56%). Although this difference is not significant, it is directionally opposite to the effect predicted by a signaling/scarcity account.

An analysis of participants’ decision-time may elucidate their decision-making process. In particular, one rational algorithm to solve the decision problem may first be to consider the expiring discount product. If the decision is not to purchase the product, the participant then considers the second, nonexpiring offer. Participants’ employing such an algorithm would depend on their ability to separate the purchase consideration from the purchase environment. However, our central thesis suggests that limiting flexibility influences not only the way consumers think about a particular option but also the holistic nature of the choice process itself. In line with the current predictions, the results show that 81% of the participants who purchased the unlimited product did so before the discount expired. Moreover, 90% of the decisions not to purchase a product also happened before the discount for the randomly chosen product expired, as were 75% of the decisions to defer choice. Thus, it seems that participants treated the decision problem for both the purchase outcomes and the delay outcome as a single-stage problem. This behavior further strengthens the view that a general characteristic of the decision problem, such as the interaction between limited purchase environment and anticipated regret, was influenced by the manipulation, not by a change in the perception of a specific product’s value.

## *Discussion*

This design enabled us to test the hypothesis that an increased valuation of the products in the limited conditions did not cause the increase in purchase rates in Experiments 1 and 2. The results demonstrate that participants were not more likely to purchase the product with an expiring discount than the unlimited product when both were present on the same screen. That participants treated the entire situation as if it were slightly limited, as indicated by the timing of the choice not to purchase and the choice to delay the decision, provides further support for the notion that the effect of the environment (captured by these types of manipulations) transpires at the process level, not the product level.

### *GENERAL DISCUSSION*

Regret is a powerful force in consumers' decision making. In this research, we proposed that the mere ability to delay and later change decisions increases regret, which in turn disproportionately decreases the propensity to violate the status quo (in most consumer settings, this translates to a decrease in the propensity to purchase). Two real Web-based purchasing experiments show that when the flexibility to delay or defer decision is reduced, the propensity to purchase substantially increases. Experiment 1 demonstrates that when an action cannot be reversed, the propensity to purchase almost doubles. Moreover, the follow-up lab experiment described in the discussion of Experiment 1 demonstrates that the relative regret over purchasing decreases in the limited condition and, more important, mediates the effect of the limitation on choice. Experiment 2, which was also a Web-based experiment, demonstrates the same basic pattern of results but with a vastly different approach for limiting flexibility, that is, time limit. A follow-up lab study again demonstrated that the increased relative regret over purchasing mediates the effect of the expiring discounts on purchase

behavior. The similarity in the pattern of results between Experiments 1 and 2 provides additional support for the effect of the ability to defer decisions on both regret and purchasing indecision.

Experiment 3 examines participants' ability to predict the influences of regret from Experiments 1 and 2 on choice. This experiment is important because in most real-world cases, consumers can choose the type of store they want to shop at, taking into account the amount of flexibility and limitations in their shopping environments. The results of Experiment 3, though limited, show that consumers intuit the effects of limited purchase environments on the propensity to purchase. These results are encouraging, but they are silent on whether consumers will actually choose options that limit their decision flexibility when facing real purchasing objectives. Future work should examine the question whether consumers' understanding of the effects of such limitations translate into actual choice.

The mechanisms we proposed here were hypothesized to create changes in counterfactual thinking as a function of the ability to defer decisions. At the same time, the two mechanisms we used to limit decision flexibility could have had other unintended effects. In particular, both of the mechanisms might have influenced consumers' perceptions of the value offered by creating a type of signaling, in which a restriction signals increased value. Such effects have been documented previously (Cialdini 2001; Inman, Peter, and Raghurir 1997) and have shown, for example, that scarcity can influence perceived value. The realism of Web-based experiments precluded us from examining this question in Experiments 1 and 2, but the follow-up lab experiments described in conjunction with the experiments shed some light on this hypothesis. Moreover, we designed Experiment 4 to test this possibility directly. Experiment 4's results suggest that such an alternative account for our results is unlikely. Participants did not purchase limited products more frequently than unlimited ones in our experiments. The lab results further show that in these particular cases,

participants' WTP did not increase as a function of the limitations, which indicates that the signaling of value and scarcity explanations cannot account for the effect. It is also worth mentioning that the WTP results also indicate a higher demand level than the actual purchase rates in the no-limitations (i.e., control) conditions. That is, participants in both the control and long-time-limit conditions may have purchased too little. An interpretation of the results is that the limited-purchase-environment conditions may have increased consumer (and retailer) welfare. This was the case in the gift-certificate conditions, in which we sold money at half the price.

Overall, our results provide additional support for the importance of regret and counterfactual thinking within the domain of consumer purchase behavior. The results also show the extent and ease with which the shopping environment's design can influence counterfactual thinking and action. Online retailers have greater control over the shopping environment parameters than do bricks-and-mortar retailers, but in principle, there is nothing to prevent bricks-and-mortar retailers from implementing similar mechanisms.

#### *LIMITATIONS AND FURTHER RESEARCH*

Finally, there are many important questions pertaining to the applicability of limitations of the purchase environment. For example, what types of products are best suited for restrictive promotion? Experiments 1 and 2 demonstrate an application to a variety of products, all of which were hedonic consumption products sold at a relatively low cost. Would these same mechanisms apply to necessities (e.g., laundry detergent, diapers)? Would they apply to more expensive products? How should the mechanisms be adopted when the object in question is a large-ticket item, such as a stereo system or a car? Are the promotion mechanisms most suited for individual products, or should they apply to baskets with multiple products? In the experiments we present, the shopping objective was one product (given the probabilistic nature of the shopping), which makes it impossible to infer the

relative suitability of the promotion to single product purchases over baskets. Another question pertains to the long-term effects of such promotions. Our investigation focused on a concentrated experience with limitation mechanisms. Would the effects change if consumers were to encounter such promotions every day? Finally, the shopping experience in Experiments 1 and 2 was an unplanned experience to the extent that subjects did not intend to purchase a particular good. Therefore, it is clear that the promotions have an effect on spontaneous shopping, but it is still not clear whether and how they would apply to planned purchases. We leave the readers 2 years to answer these questions.

**Table 1**  
Experiments 1 and 2 Products and Prices

Category (Experiment Number)	Products	Regular Price	Discount Price
Books (1, 2, and 4)	<i>The Double Helix</i>	\$15	\$7.5
	<i>Surely You're Joking, Mr. Feynman</i>	\$10	\$5
CDs (1, 2, and 4)	<i>Grammy 2000</i>	\$13.99	\$7.50
	<i>Rap Grammy 2000</i>	\$13.99	\$7.50
Pens (1, 2, and 4)	Cross Navy Blue	\$19.99	\$10
	Cross Chrome	\$12.99	\$6.50
Chocolates (1, 2, and 4)	Godiva Truffles	\$9.50	\$5
	Godiva Collection	\$7	\$3.50
DVDs (1, 2, and 4)	<i>The Sixth Sense</i>	\$20.99	\$10
	<i>Boys Don't Cry</i>	\$22.98	\$11
Gift certificates (1, 2, and 4)	Amazon	\$16	\$8
	Buy.com	\$18	\$9
Tools (1)	LeatherMan Mini	\$20	\$10
	Mini Magalite	\$22	\$11
Ice-cream coupons (1, 2, and 4)	\$5 off Toscannini's ice-cream	\$5	\$2.50
	\$10 off Toscannini's ice-cream	\$10	\$5
Cookies (1, 2, and 4)	Pepperidge Farm Chocolate Chunk	\$2.99	\$1.50
	Oreos Double Stuff	\$4.19	\$2.1
T-shirts (2 and 4)	University T-shirt 1	\$16.98	\$8.5
	University T-shirt 2	\$15	\$7.5
Mugs (2 and 4)	University Mug 1	\$6.98	\$3.5
	University Mug 2	\$17.50	\$8.75

**Table 2**

Experiment 1: Probability of Purchase Across Different Conditions and Product Categories

Product Category	P(Control)	P(Limited-Flexibility)
Books	.05	.13
CDs	.10	.10
Pens	.00	.25
Chocolates	.25	.56
DVDs	.16	.40
Gift certificates	.30	.22
Tools	.06	.13
Ice-cream coupons	.25	.63
Cookies	.15	.33

**Table 3**

Experiment 2: Probability of Purchase Across Different Conditions and Product Categories

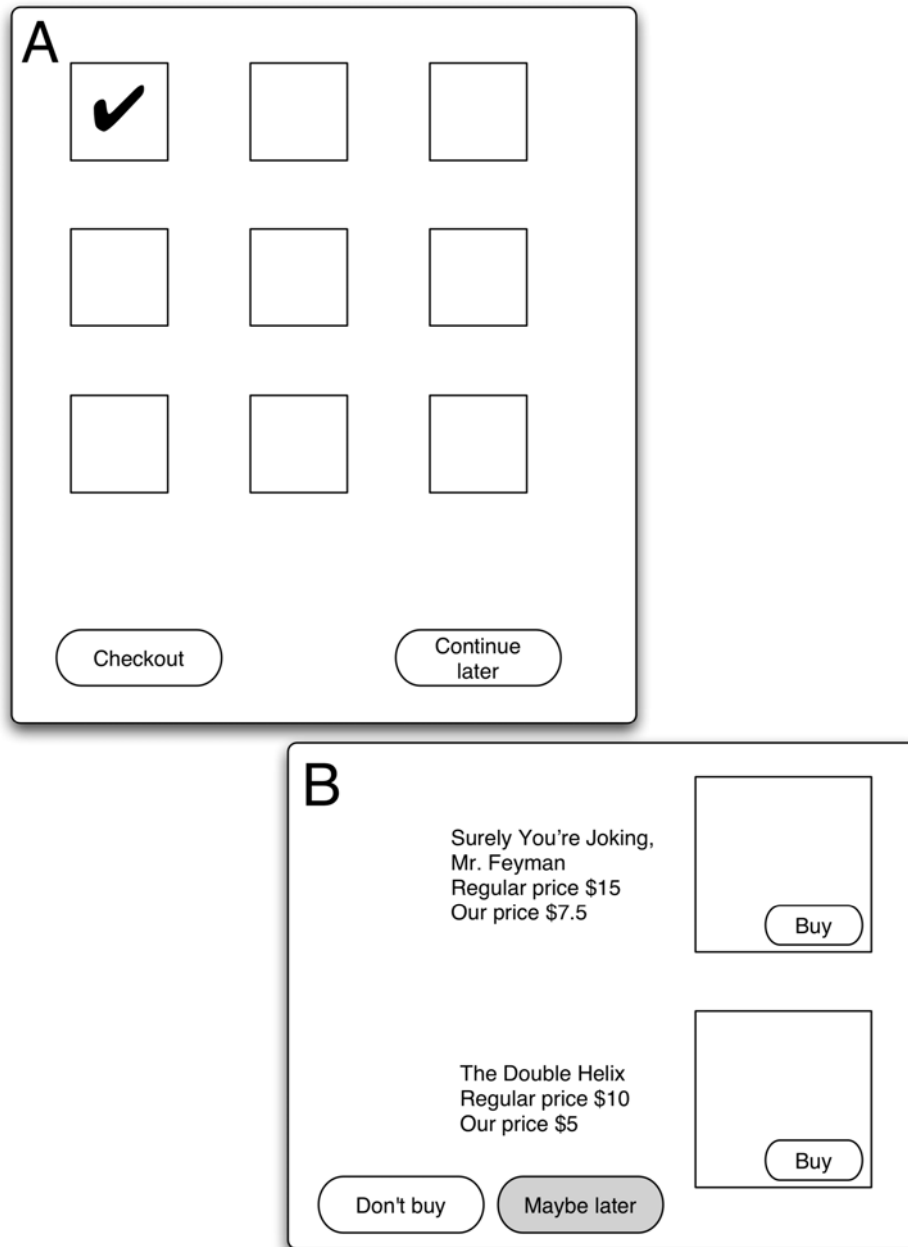
	Book	Mug	CD	Chocolates	T-shirt	Ice-Cream	Pen	DVD	Cookie	Gift Certificates	Total
<b>Short</b>	.10	.24	.10	.25	.33	.15	.14	.25	.05	.33	<b>.19</b>
<b>Medium</b>	.41	.43	.09	.70	.43	.30	.13	.23	.30	.43	<b>.35</b>
<b>Long</b>	.23	.22	.04	.26	.36	.13	.04	.16	.17	.31	<b>.20</b>

**Figure 1**

Schematic screen design of the main and product-category screens, Experiments 1,2, and 4

A: The Main Screen in Experiments 1, 2, and 4.

B: Product Category Page Representation



Notes: The “maybe later” button was available only in the control condition.

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