Pleasant Surprises: Consumer Response to Unexpected In-Store Coupons

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This article studies the impact of in-store "surprise" coupons (e.g., electronic shelf coupons, peel-off coupons) on consumers' total basket of purchases. A conceptual model is developed that (1) predicts that the use of a surprise coupon will increase the size of the shopping basket and the number of unplanned purchases made on the shopping trip and (2) predicts the type of these unplanned purchases. The authors present the results of an in-store experiment and analysis of the Stanford Market Basket Data to test these predictions.

Pleasant Surprises: Consumer Response to Unexpected In-Store Coupons

The effects of coupons, and particularly freestanding inserts (FSIs), on consumer behavior have been studied and well documented (for a survey of key studies, see Blattberg and Neslin 1990). However, little attention has been given to a relatively new type of coupon, the in-store instant coupon (e.g., electronic shelf coupons, peel-off coupons on product packaging). "Surprise" coupons, as we refer to them, are unanticipated coupons encountered while in the grocery store and are intended for use on that shopping trip. These coupons target customers at the point of purchase, where nearly 70% of all purchasing decisions are made.[1] According to *Frozen Food Age* (1996), electronic coupons are redeemed up to ten times more frequently than are FSIs— 18% versus 1.8%, respectively. This helps explain the 17.2% growth in the use of surprise coupons by manufacturers of consumer packaged goods in 1996; during the same time, the use of FSIs dropped by nearly 10% (Thompson 1997).

Whereas traditional coupons have appealed primarily to manufacturers as a way to influence consumers' buying decisions (for a discussion of the objectives of coupons, see Blattberg and Neslin 1990), surprise coupons may have an appeal to retailers that wish to increase sales. Thompson (1997) reports that instant coupons not only can increase sales of a brand by 35% but also can increase consumers' shopping baskets by 14%. Therefore, grocery store managers may benefit from insights into how instant coupons affect shopping behavior.

Research on traditional coupons (e.g., FSIs) has focused on the impact of coupons on brand or category sales. Even studies that have examined the effect of "package coupons," a type of surprise coupon that includes peel-off coupons and on-pack or in-pack coupons (Dhar, Morrison, and Raju 1996; Dhar and Raju 1998; Raju, Dhar, and Morrison 1994), or in-store promotions in general (Blattberg and Neslin 1989; Inman and Winer 1998) have focused largely on sales at the brand or category levels. We study unexpected in-store coupons and argue that these promotions increase market basket sales. In addition, we develop insights into the effect of such promotions on the pattern of added purchases (in terms of the market basket or shopping trip).

We begin in the next section by developing a conceptual model that provides a possible explanation for why unexpected coupons increase the number of unplanned purchases made on a shopping trip. Then, we develop a set of hypotheses that predicts how the incremental unplanned purchases as a result of a surprise savings will be allocated throughout the store. We detail the research design of our in-store experiment and the measures used to test our hypotheses and present the results. Next, we provide additional support for our main hypothesis (H_1) using the Stanford Market Basket Data, and finally, we discuss the implications of our findings for manufacturers and retailers, along with directions for further research.

CONCEPTUAL MODEL

We propose that when a consumer receives an unexpected in-store coupon for a planned purchase, the size of the shopping basket will increase as a result of an increase in the number of unplanned purchases made on that shopping trip.[2] A conceptual model of why this may occur is illustrated in Figure 1.

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[1]Point of Purchase Advertising Institute (1995).

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[2]We recognize that other unexpected, in-store promotions might have the same effect. However, we limit our study here to the effect of surprise coupons.

Figure 1
CONCEPTUAL MODEL FOR HOW UNEXPECTED PRICE PROMOTIONS AFFECT IN-STORE SHOPPING BEHAVIOR
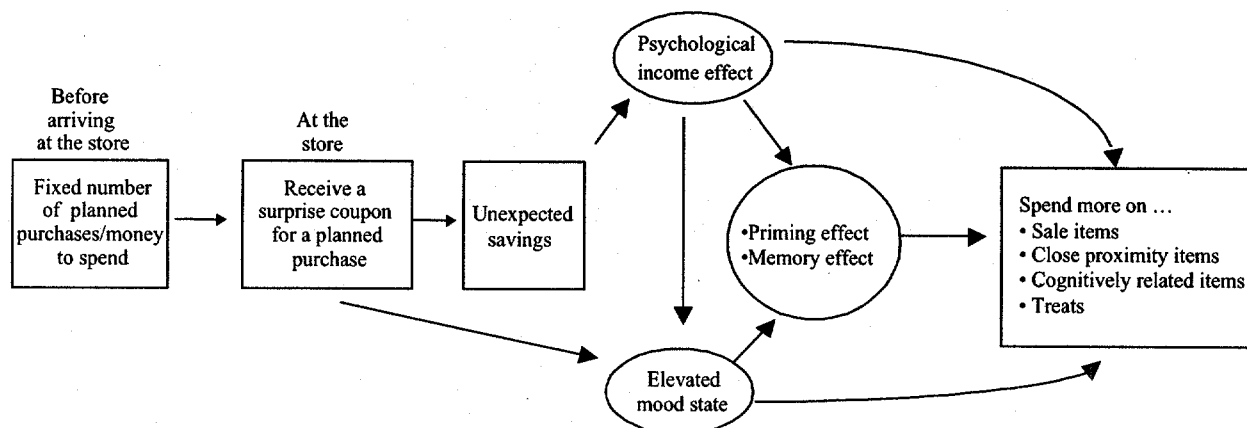
When consumers make a major trip to the grocery store, they typically have a set of planned purchases. Many will even have a budgeted amount of money they plan to spend on the trip. When consumers receive an unexpected in-store coupon for a planned purchase, they will find themselves spending less than originally planned. We propose that this unexpected savings will increase the number of unplanned purchases made on the shopping trip. The cause for this behavior can be explained in at least three ways: First, the monetary savings from the coupon may create an unexpected psychological income effect. This could directly cause consumers to spend more by "burning a hole in their pockets." Second, the surprise savings could indirectly increase spending by elevating consumers' mood, a phenomenon that has also been linked to increased purchasing (Arkes, Herren, and Isen 1988; Bost 1987; Donovan et al. 1994; Golden and Zimmer 1986; Sherman and Smith 1987). Third, it is possible that consumers simply feel good about receiving an unexpected coupon, perhaps because it was unexpected or novel. In this case, the surprise coupon might directly elevate the consumer's mood, thereby increasing the number of unplanned purchases on that shopping trip (see Figure 1). In the following sections, we review the literature supporting our model.

Increased Purchasing as a Result of a Psychological Income Effect

A fundamental assumption in economics is that funds are fungible—that the source of money should make no difference in its consumption (von Neumann and Morgenstern 1947, p. 8). However, Arkes and colleagues (1994) conducted several studies to show that windfall gains, or unanticipated gains, were spent more readily than gains that were anticipated, which violates the assumption of fungibility. In an experiment, Arkes and colleagues (1994) informed participants of one group that they would be paid for their time and services. The other group of participants received no advanced notice of this payment. On the day of the study, members of both groups were given a small amount of money (e.g., $5.00), and then their expenditure of that money was monitored over a short period of time (e.g., dur-

ing a basketball game). Arkes and colleagues' findings were consistent over multiple experiments; participants who did not anticipate the money spent more of those gains. Furthermore, by controlling for variables such as whether the money was "earned," they found that this result was driven explicitly by the unexpected nature of the gain rather than the source of the income.

An explanation for this phenomenon is derived from the mental accounting literature. The seminal work of Shefrin and Thaler (1988) and Thaler (1990) suggests that households have different mental accounts from which they withdraw funds, and the marginal propensity to consume (MPC) differs over accounts.[3] For future income accounts, such as an Individual Retirement Account, the MPC is close to zero; for asset accounts, such as a savings account, the MPC is somewhere between zero and one. For current income accounts, such as a weekly salary, the MPC is close to one. According to Thaler (1990), windfall gains fall into the current income account. However, Arkes and colleagues (1994) find that windfall gains are spent even more readily than current income.

Following Arkes and colleagues (1994), we propose that consumers receiving a windfall gain in the form of a surprise coupon will spend more than those who do not or those who bring a coupon from home. Furthermore, we propose that consumers using a surprise coupon spend more than the windfall gain (i.e., the value of the incremental, unplanned purchases will be more than the amount of the coupon).

Increased Purchasing as a Result of Elevated Mood

We propose that an elevated mood caused by a surprise coupon can lead to increased purchases on a given shopping trip through two possible types of effects. First, the coupon may create a favorable evaluation of the store, possibly causing consumers to switch purchases from another store in their portfolio to the one that provides the surprise coupons. Second, the elevated mood may result in increased pur-

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[3]Marginal propensity to consume is the change in consumption divided by the change in income.

chases in and of itself, regardless of any reallocation of purchases across grocery stores in the customer's portfolio. We discuss the related literature next.

Prior studies on mood and affect have shown that a positive mood can act as additional information when a person evaluates a situation or object (Biggers and Pryor 1982; Schwarz 1990). Isen and colleagues (1978) and Sherman and Smith (1987) also find that consumers who were in a good mood give more favorable evaluations of goods presented to them. In our application, this suggests that a consumer in an elevated mood state as a result of receiving an unexpected coupon will have a more favorable impression of the grocery store that provides the savings. Now consider a customer who splits his or her grocery purchases among two or more stores.[4] If this consumer receives a mood-elevating surprise coupon, he or she might evaluate that store more favorably and potentially shift purchases intended for another store to the one that provided the coupon. The result is more unplanned purchases in that grocery store on that shopping trip.

Another mood-based explanation might be that consumers who are in a good mood simply make more unplanned purchases. This is backed by the work of Donovan and colleagues (1994), Golden and Zimmer (1986), and Sherman and Smith (1987), who all find that consumers in a good mood tend to spend more money than originally planned. Bost (1987) studied consumers at different store outlets (e.g., supermarkets, auto accessory stores) with various store conditions and found that consumers who shopped at the more aesthetically pleasing stores reported an elevated mood state, had more favorable evaluations of the store, and typically made more spontaneous purchases.

We propose that a surprise coupon can act as a catalyst for elevating consumers' moods and thus increasing the basket size. If this proves to be true, retailers should encourage manufacturers to reallocate their promotion spending from FSIs to in-store surprise coupons.

Allocation of Increased Purchases Throughout the Store

If the number of unplanned purchases increases because of an unexpected coupon, it would be interesting to understand how these incremental, unplanned purchases are allocated throughout the store. Spreading activation memory results suggest that the presentation of a semantically related prime can increase the likelihood and speed of recall and recognition of related targets (Anderson 1980). Therefore, if the coupon itself is primed, then consumers may make incremental, unplanned purchases of other items that are on sale. Conversely, if the product for which the coupon is presented is primed, this could result in an increase in unplanned purchases of that product or of products cognitively related to that one (i.e., complements) (see Figure 1).

Another explanation for how the unplanned purchases might be allocated throughout the store comes from the interference results in memory research that suggest that the

effects of priming are relatively transient (Crowder 1976). Given the essentially continuous presentation of different products vying for attention on store shelves, if the "psychological income effect" or the "mood effect" were to increase purchasing, it would tend to occur before these effects had dissipated, on products in close proximity to that primed by the coupon (see Figure 1). Last, there has been research to suggest that consumers in a good mood are more likely to purchase "treats" (O'Curry 2000). Therefore, this is another product type for which we might expect to find a boost in unplanned purchases as a result of a surprise coupon. In the following section, we formally develop these predictions.

HYPOTHESES

In our conceptual model, we proposed that consumers who receive a surprise coupon while in the grocery store will experience an elevated mood state and/or a psychological income effect, either of which could cause them to make more unplanned purchases while in the store. Therefore, our first hypothesis is as follows:

H_1: Consumers receiving an unexpected coupon while in the store will make more unplanned purchases and therefore will have larger grocery baskets.

This hypothesis is consistent with Bost's (1987) work reported previously. Here, we propose that a surprise coupon will have a similar effect to the pleasing store environment in Bost's study by heightening consumers' moods and increasing spending. Or, by decreasing the amount of money a consumer had originally planned to spend in the store, the surprise coupon could have a psychological income effect that would allow for more unplanned purchases on that trip.

Beyond the effect on aggregate purchases described previously, behavioral theory helps us develop hypotheses about how the incremental, unplanned purchases of consumers who receive a surprise coupon are allocated throughout the store. Studies that have examined the information processing that occurs when a consumer receives a coupon have found that promotions are domain specific. This suggests that consumers who buy a promoted product will be more aware of, and more likely to buy, another promoted product (Lichtenstein, Netemeyer, and Burton 1995). Therefore, we propose the following:

H_2: Consumers receiving an unexpected coupon while in the store will make more unplanned purchases for other items that are promoted on price.

Support for this hypothesis could also be explained by the findings in the mood and affect literature that suggest that people in a good mood seek out stimuli that will help maintain their positive mood state (Batra and Stayman 1990; Mackie and Worth 1989). Therefore, if an unexpected coupon heightens a consumer's mood, the promotion is primed and the consumer will tend to seek out other promotions that will perpetuate this improved mental state.

For the same reason that consumers in a good mood as a result of a surprise coupon will buy other products on sale to maintain their elevated mood, they might also buy more treat items in an effort to maintain this heightened state. Therefore, we propose the following:

H_3: Consumers receiving an unexpected coupon while in the store will make more unplanned purchases of treat items.

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[4]A recent study by Tsiros and Heilman (2000) revealed that 44% of the consumers surveyed shopped at two or more grocery stores. This was further supported when we examined the Information Resources Inc. Market Basket Data assembled at Stanford University in 1994 (discussed subsequently). Here, we found that roughly 40% of consumers typically shopped at two or more grocery stores; "typically" was defined as making at least 15% of their shopping trips at a particular store.

The remaining two hypotheses are based on findings from the memory literature. Spreading activation memory results suggest that the presentation of a semantically related prime can increase the likelihood and speed of recall and recognition of related targets (Anderson 1980). Thus, when a product, say, spaghetti, is primed with an in-store coupon (making it particularly salient), the consumer will experience a heightened awareness of products that are directly related to the one primed—in this case spaghetti sauce, bread sticks, and so forth. Therefore, we propose the following:

H_4: Consumers receiving an unexpected coupon while in the store will make more unplanned purchases of products that are cognitively related to the product primed by the coupon.

Finally, interference results in memory research suggest that the effects of priming are relatively transient (Crowder 1976). Therefore, if not attended to immediately, the psychological income effect or the mood effect resulting from an unexpected savings may dissipate and be lost within a short period of time because of the interference of tending to other planned purchases. Thus, if an unplanned purchase were to be made as a result of the coupon, it would most likely occur soon after the coupon was received, before interference could occur. Therefore, we propose the following:

H_5: Consumers receiving an unexpected coupon while in the store will make more unplanned purchases of products in close proximity to the product primed by the coupon.

Although support for any one hypothesis will not enable us to discern between the psychological income and mood effects, the results will at least support that these constructs cannot be discounted as potential drivers of incremental, unplanned purchases.

IN-STORE EXPERIMENT—DESIGN AND MEASURES

We conducted an in-store experiment at two grocery store chains in a middle-class suburb of St. Louis. We intercepted customers entering the store and screened for those who had a shopping list with at least 15 items (to eliminate filler

trips). These shopping lists, plus any other items the consumers were able to recall verbally as being planned but that did not appear on their lists, represented the customers' sets of planned purchases. A final qualifying screen was whether the consumers were planning to make a purchase in at least one of the following categories: spaghetti sauce, laundry detergent, cereal, or paper towels, the products ultimately primed with an unexpected coupon. No mention of a coupon incentive was made, to avoid a self-selection bias of price-sensitive consumers. All 192 consumers meeting these criteria agreed to participate in the study.

Roughly half (105) the consumers were given a coupon equal to $1.00 off a purchase in one of the target categories (depending on which they were planning to buy).[5] The coupon provided to each consumer was based on the items appearing on his or her shopping list and in a manner that maintained an equal distribution across the four categories.[6] The remaining 87 consumers, who did not receive a coupon, acted as the control group. Table 1 shows the distribution of coupons over customers. Although surprise coupons are typically not offered for any brand of the consumers' choice, but rather are brand specific, this procedure was flexible enough to simulate a real purchasing situation in which consumers notice a coupon for the brand they were planning to purchase, or one for a competing brand they would not nor-

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[5]Because we are interested in market basket effects rather than brand effects, the coupons were category specific, not brand specific. We acknowledge that this may heighten consumers' evaluation of the retailer more so than would a brand-specific coupon, which most consumers attribute to the manufacturer. This, in turn, could affect the consumer's decision to shift purchases from other stores to the one providing the coupon. We thank an anonymous reviewer for raising this point.

[6]We acknowledge the potential limitation that all coupons were provided for planned purchases. However, because consumers often do not notice these types of surprise coupons (i.e., electronic shelf coupons, peel-off coupons) until they are at the shelf scrutinizing various alternatives, many of these coupons are used for planned purchases. The use of surprise coupons for unplanned purchases is not tested here and is left for further research.

Table 1
DESCRIPTIVE STATISTICS

	Experimental Group	Control Group
Total number of customers in study	105	87
Number receiving coupon for cereal	42	—
Number receiving coupon for laundry detergent	21	—
Number receiving coupon for spaghetti sauce	17	—
Number receiving coupon for paper towels	25	—
Number of customers not receiving a coupon	—	87
Average number of planned purchases	23.72 (11.57)[a]	24.84 (12.69)
Average number of items bought	35.09 (9.44)	32.60 (10.09)
Average dollar value of shopping basket	$83.91 (37.96)	$75.22 (36.22)

Demographics		
Income (in Thousands)	Working Status	Household Size
<$35................28%	Retired................13%	1................32%
$35–$70.............37%	Unemployed..........4%	2................25%
>$70................35%	Stay at home........20%	3................29%
	Self-employed........4%	4................10%
	Full-time.............26%	>5...............4%
	Part-time..............33%	

[a]Standard deviation of the data, not the mean, is shown in parentheses.

mally buy, and then use this coupon to make their planned purchases.

Upon exiting the store, consumers in the experimental group were able to redeem their coupon for $1.00. Then, all participants were offered $5.00 in exchange for their shopping lists and grocery receipts. Note that no mention of this monetary incentive was made before the customer entered the store; all participants accepted this offer. With the consumers' shopping receipts in hand, we were able to subtract the list of planned purchases (the items on their shopping list plus those verbally recalled as planned) from the items on the shopping receipt to obtain a list of each customer's unplanned purchases. We note that the number of planned purchases of the experimental and control groups was not significantly different (t = .63), nor were their demographic characteristics.

Because the coupon was given at the beginning of the shopping trip, our experiment does not exactly mimic the experience of receiving a coupon at the point of purchase. However, our method is a conservative test of the phenomenon we study. Although the coupon was provided at the onset of the shopping trip, the salience of the coupon would still be cued by the product on the shelf, though perhaps not as robustly. As such, if the results hold true when the coupon is received at the beginning of the shopping trip, they should certainly hold true, perhaps even more convincingly, when the coupon is received at the point of purchase.

To ensure that the data were appropriate for testing our hypotheses, it was important that the consumers we studied had a budget in mind while doing their shopping. Questioning revealed that nearly 60% of consumers reported shopping on a budget when doing their grocery shopping, and 72% of those reported that they never or rarely exceeded that budgeted amount. This suggested that for the majority of the

consumers in our experiment, a psychological income effect as a result of a surprise coupon was at least plausible.[7]

To test H_2–H_5, we needed explicit definitions for the various types of unplanned purchases. For H_2, we defined any unplanned purchase of a product on in-store sale that week as an unplanned sale purchase. Items bought with an FSI coupon were planned and therefore were not included in this definition. To test H_3 and H_4, we needed a comprehensive list of treat items and items that were cognitively related to the four items primed by the surprise coupon. To do this, we surveyed 57 members of the support staffs at two midwestern universities who did the bulk of their family's grocery shopping. We asked these consumers to make a list of (1) the items they would buy if they wanted to treat themselves or their families to something special and (2) complementary goods for each of the four couponed products. To make the list of responses manageable, we based the products used to define each category on a median split of all responses, in which the top half (in terms of frequency) of those mentioned were included in each definition. We also included items found at the checkout aisle in our definition of "treat." Table 2 shows the list of items included in these two categories. Finally, to test H_5, we defined items in close proximity as those shelved in the same aisle (both sides) as the one primed by the coupon. Table 3 presents the final list of products that fell into this category.

In-Store Experiment—Results

We conducted several tests to rule out any potential data biases. We first checked whether the total number of

[7]The percentage of consumers reporting that they shopped on a budget did not vary across the two groups studied, and a check of the data revealed that the substantive results of our experiment did not vary when we considered only consumers who reported shopping on a budget.

Table 2
DEFINITIONS OF TREATS AND COGNITIVELY RELATED (COMPLEMENTARY) GOODS

| Treats | Cognitively Related (Complementary) Goods | | | |
	Spaghetti Sauce	Laundry Detergent	Cereal	Paper Towels
Ice cream (19)[a]	Pasta (23)	Softener (29)	Milk (35)	Glass cleaner (21)
Bakery goods (14)	Cheese (23)	Bleach (17)	Fruit (27)	Napkins (5)
Steak (13)	Bread (22)	Dryer sheets (12)	Sugar (17)	Paper plates (4)
Wine (8)	Noodles (13)	Spot remover (12)	Juice (5)	Plastic cups (3)
Candy (7)				
Cheese (6)				
Cookies (6)				
Magazine (5)				
Chocolate (5)				
Flowers (5)				
Cake (4)				
Seafood (4)				
Baby toy (3)				
Chips (3)				
Cosmetics (3)				
Movie rental (3)				
Pie (3)				
Gum/mints(2)[b]				

[a]Numbers in parentheses indicate the number of participants (of 57) who indicated the product in the specified category.
[b]Item included that was not in the top one-half of all products mentioned but is found at the checkout counter.

Table 3
PRODUCTS IN CLOSE PROXIMITY TO THOSE PRIMED

Spaghetti Sauce	Laundry Detergent	Cereal	Paper Towels
Boxed dinners	Ammonia	Baby products	Aluminum foil
Canned chicken	Bleach	Breakfast bars	Bath tissue
Canned meat	Brooms/mops	Fruit roll-ups	Facial tissue
Chili	Cleaners	Granola bars	Lunch bags
Canned fish	Detergents	Poptarts	Matches
Gravy	Distilled water	Toaster pastries	Napkins
Instant potatoes	Dye		Paper products
Macaroni and cheese	Fabric softener		School supplies
Meat tenderizer	Laundry supplies		Straws
Noodles	Lights bulbs		Toothpicks
Pasta	Oven cleaner		
Pizza mix	Room deodorant		
Rice	Scouring pads		
Sauces (packaged)	Shoe polish		
Tuna	Sponges		
	Starch		
	Waxes		
	Window cleaner		

coupons participants used while in the store (not including our surprise coupon) was the same across the two groups. Here, we found no statistical difference (t = 1.50) between the experimental group (.602) and the control group (.894) on this measure. Next, we checked that the number of planned purchases across the four couponed categories was the same for both groups. We found that consumers in the experimental group planned to purchase, on average, .261 of the four products, whereas the control group planned to purchase .239 of the four products. Again, this difference was not statistically significant (t = 1.44). Finally, by comparing the number of planned purchases that were not made across the two groups, we checked whether the surprise coupon caused consumers to make more of their planned purchases. We found that, on average, consumers who received a surprise coupon failed to purchase 36.3% of their planned purchases, whereas those who did not receive a surprise coupon failed to purchase 38.6% of their planned purchases, a difference that was not statistically significant (t = 1.06). Having ruled out these potential biases, we could reliably test our hypotheses. Table 4 presents the results from our experiment based on the number of items bought, and Table 5 presents the results based on dollars spent.

We made several calculations to test H_1. First, we compared the number of unplanned purchases made between the experimental and control groups. The results show that consumers who received a coupon made, on average, 11.37 unplanned purchases, versus 7.76 made by the control group. This increase of nearly 47% was significant (t = 3.14, $p < .01$). Second, we compared the total basket sizes across the two groups in terms of items purchased and dollars spent. This would act as an additional test of H_1, given that the original number of planned purchases between the two groups did not vary significantly. We found that the total number of items purchased by consumers who received a coupon ($\mu = 35.09$) was significantly greater (t = 1.75) than the total number of purchases made by those who did not receive a coupon ($\mu = 32.60$). We also found that the difference in dollars spent between the two groups ($83.91 for the experimental group versus $75.22 for the control group) was significant (t = 1.62). We note that this 12% increase in

spending is in line with the 14% increase reported by Thompson (1997). Third, we compared the total value of the unplanned purchases made by the two groups and found that consumers in the experimental group spent $27.26 on unplanned purchases. This was significantly greater (t = 2.69) than the $19.58 in unplanned purchases made by those who did not receive a coupon. The results from these tests provide substantial support for H_1.

We note from the results that consumers receiving the surprise coupon made, on average, 3.61 unplanned purchases worth $7.68. This suggests that consumers spent more than the windfall gains ($1.00 in this case) and that the surprise coupons would be a good investment for retailers if they could make at least a 13% margin on the sale of the unplanned purchases. To assess this, we needed to identify the items most likely to be purchased as a result of the surprise coupon, as done in H_2–H_5. In testing H_2–H_5, we calculated for both groups (1) the average number of purchases made for each product type (i.e., sale items, treats, cognitively related items, and close proximity items), (2) the proportion of unplanned purchases for each product type, and (3) the total dollar value of the unplanned purchases for each product type.

In testing H_2, we found that consumers receiving a surprise coupon made significantly more (t = 2.48) unplanned purchases of sale items (2.08) than did those in the control group (1.30). However, the results do not hold when we compare the number of unplanned purchases made for sale items as a proportion of total unplanned purchases. Here, we found that consumers in the experimental group made .172 of their unplanned purchases for sale items versus .157 for the control group. This difference was not statistically significant (t = 1.05) but was in the predicted direction. We also found that the average dollar value of unplanned purchases that were on sale was not significantly different between the two groups ($p = .07$). Collectively, these results provide only partial support for H_2.

In examining the results to test H_3, we found that consumers in the experimental group made significantly more (t = 6.12) unplanned purchases of treat items ($\mu = 2.11$) than

Table 4
EMPIRICAL RESULTS BASED ON NUMBER OF ITEMS BOUGHT

Hypothesis	Variable	N^c/N^{nc}	With Surprise Coupon	Without Surprise Coupons	t-Statistic
H$_1$	Average number of unplanned purchases	105/87	11.37 (8.02)[a]	7.76 (7.87)	3.14***
H$_1$	Average basket size	105/87	35.09 (9.44)	32.60 (10.09)	1.75*
H$_2$	Average number of unplanned purchases on sale	105/87	2.08 (2.42)	1.30 (1.94)	2.48**
H$_3$	Average number of unplanned treat purchases	105/87	2.11 (1.88)	.79 (1.06)	6.12***
H$_4$	Average number of unplanned cognitively related purchases	105/100[b]	.80 (1.33)	.21 (.44)	4.31***
H$_5$	Average number of unplanned proximity purchases	105/100[b]	.96 (1.28)	.17 (.43)	5.98***

*p < .05.
**p < .01.
***p < .001.

Notes: N^c = number of observations among consumers who received a coupon, N^{nc} = number of observations among consumers who did not receive a coupon.

[a]Standard deviation is included in parentheses.

[b]There were 100 (rather than 87) purchases here because some consumers bought more than one of the focal products.

Table 5
EMPIRICAL RESULTS BASED ON DOLLAR VALUE SPENT

Hypothesis	Variable	N^c/N^{nc}	With Surprise Coupon	Without Surprise Coupons	t-Statistic
H$_1$	Average dollar value of all unplanned purchases	105/87	$27.26 ($21.53)[a]	$19.58 ($18.01)	2.69**
H$_1$	Average dollar value of shopping basket	105/87	$83.91 (37.96)	$75.22 (36.22)	1.62*
H$_2$	Average dollar value of unplanned purchases on sale	105/87	$ 5.06 ($7.11)	$ 3.56 ($6.67)	1.51
H$_3$	Average dollar value of unplanned treat purchases	105/87	$ 5.08 ($5.83)	$ 2.74 ($4.36)	3.18***
H$_4$	Average dollar value of unplanned cognitively related purchases	105/100[b]	$ 2.31 ($4.54)	$ .72 ($1.95)	3.28***
H$_5$	Average dollar value of unplanned proximity purchases	105/100[b]	$ 2.55 ($2.45)	$ .40 ($1.27)	7.94***

*p < .05.
**p < .01.
***p < .001.

Notes:N^c = number of observations among consumers who received a coupon, N^{nc} = number of observations among consumers who did not receive a coupon.

[a]Standard deviation is included in parentheses.

[b]There were 100 (rather than 87) purchases here because some consumers bought more than one of the focal products.

did those in the control group (μ = .79).[8] These results also held when we compared the proportion of unplanned purchases that were treats: .178 for the experimental group versus .112 for the control group (t = 3.87). Finally, we compared the average dollar value spent on treats across the two populations and again found this value to be significantly greater (t = 3.18) for the experimental group ($5.08 versus $2.74), in further support of H$_3$.

To test H$_4$, we first identified all purchases made by consumers who did not receive a coupon for any one of the four products that were primed in our experimental group. We then counted the unplanned purchases made by these consumers that were cognitively related to (complements of) these four items and compared them with the unplanned purchases of complements to the products primed with the coupon in the experimental group. Among consumers who did not receive a coupon, there were exactly 100 planned purchases for any one of the four items mentioned previously.[9] The results show that consumers who received a coupon made, on average, .80 unplanned purchases for

products that were cognitively related to the one primed with the coupon. However, consumers who made planned purchases in the same four categories but did not use a surprise coupon for these purchases made an average of .21 purchases that were cognitively related to these. This difference was statistically significant (t = 4.31) and supported H$_4$.[10]

Exploring this behavior at the category level, we found that the results held in all four categories. Table 6 shows that in all four categories, consumers in the experimental group made more purchases that were cognitively related to the product primed by the coupon than did consumers in the control group who bought the same product, but without a surprise coupon.

Next, we compared the proportion of unplanned purchases that were cognitively related to the four product categories for both groups and found this value to be significantly greater (t = 6.42) for the experimental group (.075) than the control group (.038). The same could be said about the dollar value spent on cognitively related items ($2.31 for the experimental group versus $.72 for the control group), which provides further support (t = 3.28) for H$_4$.

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[8]Of the 291 unplanned purchases made for treat items, only 24 were also on sale. Removal of these 24 purchases did not change the substantive results reported here.

[9]The number of purchases used for this test (100) was greater than the number of consumers in the control group (87), because some consumers in the sample purchased more than one of the four products studied.

[10]Of the 105 unplanned purchases made for complements, only 23 were also on sale. Removal of these 23 purchases did not change the substantive results reported here.

Table 6

AVERAGE NUMBER OF PURCHASES MADE PER INDIVIDUAL THAT WAS COGNITIVELY RELATED TO THE FOCAL PRODUCT

Category	Surprise Coupon	No Surprise Coupon	t-Statistic
Cereal	.744 (N = 42)	.178 (N = 44)	5.67*
Laundry detergent	.727 (N = 21)	.211 (N = 18)	3.46*
Spaghetti sauce	.888 (N = 17)	.300 (N = 19)	3.89*
Paper towels	.846 (N = 25)	.200 (N = 19)	4.34*

*$p < .01$.

Table 7

INCREMENTAL NUMBER OF PURCHASES MADE OVER THAT WHICH WAS PLANNED

	Cereal		Laundry Detergent		Spaghetti Sauce		Paper Towels	
	Experimental	Control	Experimental	Control	Experimental	Control	Experimental	Control
Unplanned purchases	.429	.044	.238	.161	.125	−.043	.360	−.170
Standard deviation	1.129	.871	.539	.454	.885	.562	.700	.916
N	42	68	21	31	17	23	25	47
t-Statistic	1.890*		.538		.687		2.739**	

*$p < .05$.
**$p < .01$.

Finally, to test H_5, we again examined consumers who did not receive a coupon but were planning on buying one of the four primed products. We calculated the number of unplanned purchases made for products in close proximity to these and compared this with the number of purchases made in close proximity to the products primed by the coupon in the experimental group. We found that consumers who did not receive a coupon made an average of .17 unplanned purchases of products in close proximity to the four products of interest when the purchase was planned. The number of unplanned purchases for products in close proximity to the one primed with a coupon in the experimental group was significantly higher at .96 (t = 5.98), in support of H_5.[11] We also found that participants in the experimental group made .080 of their unplanned purchases for items in close proximity to the one primed by the coupon, versus .022 for the control group for the same categories, a difference that was again significant (t = 4.26). Last, we found that the average dollar value spent on items in close proximity to the one primed by the coupon was significantly greater (t = 7.94) for the experimental group ($2.55) than for the control group in which no coupon was used ($.040). These results provided substantial support for H_5.[12]

Of interest was whether the surprise coupon increased the quantity of purchases made for the primed product. Although this finding is not directly related to our conceptual model, it would support the logic of the mental accounts and psychological income effects rather than the priming and affect theories. To investigate this, we compared the number of unplanned purchases made for the four focal items across the two groups. The results are shown in Table 7.

In the case of cereal and paper towels, we found that the number of purchases made over and above that which was planned was significantly greater among the experimental group. For laundry detergent and spaghetti sauce, the difference was not significant. This provides support for the mental accounts and income effects for cereal and paper towels and suggests that perhaps the mood effect is at work in the laundry detergent and spaghetti sauce categories.[13]

SUPPORTING RESULTS USING SECONDARY DATA

To provide supplementary support for our findings, we analyzed Information Resources Inc.'s Market Basket Data, which were assembled at Stanford University in 1994. The panel has an observation window of two years that extends through May 1993. The data track the purchases of 1042 consumers in ten grocery stores across 24 categories, 3 of which corresponded to the target products in our study: cereal, detergents, and paper towels. The data also contain the amount spent on each trip, promotional activity, and in-store and out-of-store advertising for each week.

The data lacked the necessary information to test all five of our hypotheses,[14] but they contained sufficient information to test H_1. We began by eliminating any filler trips in which consumers spent less than $40. This cutoff represented a division between major and filler trips that created a data set with summary statistics similar to those of our in-store experiment (i.e., mean shopping expenditure of $73.03 with a standard deviation of $33.46). We tested alternative cutoffs, but the substantive results did not change.

We began by examining consumers who took advantage of an in-store coupon, defined in the data as an "instant

[11]Of the 118 unplanned purchases made for products in close proximity, only 14 were also on sale. Removal of these 14 purchases did not change the substantive results reported here.

[12]We acknowledge the possibility of a confounding effect between complements and proximity items due to an overlap in these categories. We found that of the 105 unplanned purchases that were complements and the 118 unplanned purchases that were in close proximity to the item primed by the surprise coupon, only 34 of those purchases overlapped the two categories. The substantive results for H_4 and H_5 do not change when we drop these 34 purchases.

[13]We thank an anonymous reviewer for suggesting this point.

[14]For example, we did not have visibility to the store layout (H_5), nor was the list of products tracked comprehensive enough to detect incremental purchases of treat items (H_3) or items that were cognitively related to the one primed by the surprise coupon (H_4).

Table 8
RESULTS FROM STANFORD MARKET BASKET DATA

Group	Variable Description	N	Mean Expenditure	Standard Deviation	t-Statistic
A	Bought any of the 24 products using an in-store promotion in week i	579	$85.56	42.68	
	Bought any of the 24 products without an in-store promotion in weeks i + i or i − 1	1044	$77.22	38.14	3.91*
B	Bought any of the 24 products without an in-store promotion in week i	5124	$74.88	33.76	
	Bought any of the 24 products without an in-store promotion in weeks i + 1 or i − 1	6572	$74.11	34.00	1.22

*Significant at $p < .001$.

redeemable" or "instant redeemable and store coupon," in any of the 24 categories.[15] We labeled this subset of 597 observations (store trips) Group A, week i, where i acted as an index for each consumer and could differ across consumers. To identify the typical amount spent by each household in Group A in the absence of a surprise coupon, we included expenditures in the weeks before (week i + 1) and/or the weeks after (week i − 1) the one primed with the in-store coupon (week i), when no in-store coupon was used by that individual. Therefore, for H_1 to be supported, we would expect expenditures for Group A in week i to be higher than those in weeks i + 1 and i − 1 when no surprise coupon was used.

As a manipulation check, we compared the behavior of consumers who shopped during the same week i as those in Group A but who did not use an in-store coupon. We labeled this subset of 5124 observations Group B, week i. We conducted the same analysis for consumers in Group B as described for Group A. However, for Group B, we expect no difference across weeks i − 1, i, and i + 1, as consumers here did not use a surprise coupon in any of these weeks. The results of this analysis appear in Table 8.

In Group A, consumers spent an average $85.56 in the weeks when they used an in-store coupon in any of the 24 visible categories (week i). However, they spent only $77.22 in the preceding or following weeks (weeks i + 1 and i − 1) when no surprise coupon was used. The difference between these two expenditure levels is statistically significant (t = 3.91) and provides support for the idea that consumers spend more money when they take advantage of an in-store coupon. We note that when these consumers used a coupon, their shopping expenditure increased by $8.34, a rise of almost 11%. This 11% increase is slightly lower than, but in the same order of magnitude as, the 14% increase reported by Thompson (1997) and the 12% dollar increase observed between the coupon and noncoupon groups in our in-store experiment. As a validation check, we performed the same

[15]We compared coupon sensitivity of consumers with different size shopping baskets to make sure that consumers making larger trips were not more susceptible to using in-store surprise coupons, a characteristic that would bias our results. Examining all 24 categories, we compared the number of surprise coupons used on each trip with the number of items bought in those categories across nine different basket sizes (e.g., $20–$30, $30–$40, $40–$50, $50–$60, $60–$70, $70–$80, $80–$90, $90–$100, $100+). The results showed no statistical difference across the nine basket sizes in terms of the number of surprise coupons used compared with the number of items purchased (F = 1.459, $p > .05$).

analysis on control Group B and found that the average expenditure in week i was $74.88, and for weeks i + 1 and i − 1 it was $74.11, a difference that was not significant (t = 1.22), which provided further support to H_1.

DISCUSSION

We propose a conceptual model that predicts the impact of in-store surprise coupons (i.e., electronic shelf, peel-off, and so forth intended for use on that shopping trip) on consumers' purchasing behavior. We hypothesize that consumers who receive a surprise coupon will make more unplanned purchases than will those who do not and that this behavior is driven by a psychological income effect and/or an elevated mood state as a result of the coupon. We also predict how the incremental unplanned purchases will be allocated throughout the store—as a treat, a product on sale, a product cognitively related to the one primed by the coupon (complement), or a product in close proximity to the one primed by the coupon. These predictions are based on the idea that memory and priming effects may moderate the psychological income effect and/or the elevated mood state suggested previously (see Figure 1).

To test our theory, we conducted an in-store experiment in which we intercepted consumers who were entering a grocery store and screened for those who had a shopping list with at least 15 items. We gave half the qualifying participants a coupon for a product they were planning to buy (within the set of cereal, laundry detergent, spaghetti sauce, and paper towels), whereas the other half received no coupon. To represent consumers' planned purchases, we used the combination of (1) the consumers' shopping lists and (2) any item not on the lists that the consumers were able to recall verbally as being planned. We subtracted these items from those on consumers' shopping receipts, which we bought from them when they exited the store, to investigate how the surprise coupon affected shopping behavior. Although the results may hold for other types of unexpected, in-store promotions, we limit our study to the effect of surprise coupons and leave the analysis of other types of point-of-purchase promotions for further research.

Our results show that the use of an unexpected, in-store coupon increases the number and dollar value of unplanned purchases made on that particular shopping trip (H_1). This result was also supported by the results from analysis on the Stanford Market Basket Data. The results for H_2, that consumers who receive a surprise coupon will make more

unplanned purchases for items on in-store promotion, were slightly mixed. However, the findings for the remaining hypotheses, that consumers who use a surprise coupon will make more unplanned purchases of other treat items (H_3), products that are cognitively related to the one primed by the surprise coupon (H_4), and products shelved in close proximity to the one primed by the surprise coupon (H_5), were all supported. Furthermore, the dollar value of the unplanned purchases that were treats, that were cognitively related to the product primed by the coupon, or that were in close proximity to the product primed by the coupon was all significantly greater for the experimental group.

Additional exploration of the data showed that the number of unplanned purchases for two of the four focal categories, cereal and paper towels, was significantly greater among the experimental group than the control group, but that the number of unplanned purchases of laundry detergent and spaghetti sauce was not statistically different across the two groups. This provides support for the mental accounts and income effects for cereal and paper towels and suggests that the mood effect may be at work in the laundry detergent and spaghetti sauce categories. Finally, we showed that the psychological income effect in our study goes beyond prior research on mental accounting. Specifically, we found that the $1.00 surprise coupon led to an increase in unplanned purchases worth $7.68 over that spent by the control group; thus, consumers spent considerably more than the $1.00 windfall gains from the coupon.

A key difference of our work from previous studies on coupons is that we examine the impact of in-store coupons on total store sales rather than on brand or category sales. Therefore, our findings are important for both retailers and manufacturers. For example, many companies manufacture products that are complements to one another or that are typically shelved in close proximity to one another in the grocery store. Take General Mills, for example, which markets Betty Crocker frosting and cake mix (complements) and Nature Valley granola bars and Cheerios cereal (two products typically shelved in close proximity to each other). On the basis of our results, a manager at General Mills might find it useful to distribute electronic shelf or peel-off coupons for the product in each of these pairs that is more price elastic. The expectation would be an increase not only in the sales of the product offering the coupon but also in the sales of the other product in the pair. The results supporting H_3, that consumers who use surprise coupons make more unplanned purchases of treat items, could also have implications for the sale of General Mills' Chex Mix and Bugles.

For the retailer, the implications of the results from this study are even more pronounced. Our results support the *Brandweek* study (Thompson 1997) that suggests that a surprise coupon will increase consumers' shopping baskets (14% in that report versus 11%–12% in our studies). This should prompt retailers to encourage manufacturers to invest in these types of promotions over traditional FSIs. Given that we find that the $1.00 surprise coupon led to an increase in unplanned purchases worth $7.68 over that of the control group, the use of surprise coupons would be especially profitable if a retailer could make at least a 13% margin on the sale of the additional unplanned purchases. The results for H_2–H_5 provide insight as to which products the retailer should promote with surprise coupons to increase sales of other high-margin products in the store. The results suggest that retailers themselves should initiate surprise coupons, regardless of manufacturer support.

Although the findings from our research provide strong support for our hypotheses, there are some interesting extensions that may be worthwhile to consider. To begin, we only considered how an unexpected coupon for a planned purchase would affect the total shopping basket. Although many surprise coupons are used on planned purchases, it would be interesting to examine how our findings might change when the surprise coupon is used on an unplanned purchase. Receiving an unexpected savings for an unplanned purchase might create an exceptionally big mood effect, but the psychological income effect should disappear, because the consumer would now be spending more than originally planned.[16] Furthermore, additional experimental research should be conducted to study the underlying behavioral process we propose in our conceptual model. This could help reveal whether the income effect, the mood effect, or both are triggered by the surprise coupon.

Two other extensions deal with the long-term impact of surprise coupons. The first would be to investigate the impact of surprise coupons on store switching. If the incremental sales of unplanned items are borrowed from purchases that would otherwise have been made at another store, it would be important to try to make this a permanent feature of shopping behavior. Second, more research is needed to determine whether consumers will come to expect surprise coupons as they become more pervasive—thus removing the unanticipated windfall impact and the elevated mood impact that current surprise coupons appear to have. If so, retailers should consider some type of pulsing strategy for in-store coupons to preserve their element of surprise.

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[16]We thank an anonymous reviewer for bringing this point to our attention.

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