

ARTICLES

Purchase and Consumption Habits: Not Necessarily What You Intend

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Purchase and consumption behaviors in daily life often are repetitive and performed in customary places, leading consumers to develop habits. When habits have formed, environmental cues can activate the practiced responses in the absence of conscious decision making. This research tested these ideas using a longitudinal design. We predicted that regardless of their explicit intentions, consumers would repeat habits to purchase fast food, watch TV news, and take the bus. The results yielded the anticipated pattern in which participants repeated habitual behaviors even if they reported intentions to do otherwise. Intentions only guided behavior in the absence of strong habits. This study ruled out a number of artifactual accounts for these findings including that they arise from the level of abstraction at which intentions are identified, the certainty with which participants held intentions, a restriction of range in the measures, and the strategy participants used to estimate frequency of past performance.

In everyday life, purchase and consumption activities tend to be repeated at particular times in customary places. As Ehrenberg (1988) observed, “various indices of repeat-buying follow regular patterns which generalize across a wide range of brands, products, time-periods and other conditions” (p. 28). Empirical evidence of this repetition comes from panel data investigations that have identified periodic patterns in consumer purchasing and consumption (Ehrenberg, 1991; Khare & Inman, 2006). Evidence also comes from individuals self-reports of repeat purchases. For example, Bettman and Zins (1977) found that about one fourth of housewives’ supermarket purchases were repetitions of past choices. This tendency to repeat past purchases

has been demonstrated with a wide range of products and services including potato chips, bread, tissue, laundry detergent, ketchup, jeans, and restaurants (e.g., Deighton, Henderson, & Neslin, 1994; Motes & Woodside, 2001; Taylor, 2001).

A high degree of repetition is evident not only in consumer domains. As Townsend and Bever (2001) remarked, in everyday life, “most of the time what we do is what we do most of the time” (p. 2). Notwithstanding that people often seek novelty and change, signal-contingent experience-sampling diary investigations have demonstrated the repetitive nature of a significant proportion of everyday behavior (Quinn & Wood, 2005; W. Wood, Quinn, & Kashy, 2002). In these studies, participants recorded once per hour for several days what they were doing, thinking, and feeling. In college students as well as community samples, about 45% of the behaviors participants listed in their diaries tended to be repeated in the same location almost every day. Regularity of performance in particular settings also emerged in Barker and Schoggen’s (1978) ecological analysis. Observers’ finely detailed recordings of children’s everyday activities in a small Midwest town revealed recurring geographic and temporal patterns. Accordingly, they

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proposed the concept of *behavior setting* as the most proximal ecological unit to account for behavior. To the extent that people regularly occupy particular behavior settings (e.g., the local grocery store), they tend to repeat the actions performed in those settings.

To date, few studies have investigated the mechanisms underlying repetition of consumers' everyday purchases and consumption behaviors. In this article, we compare two possible accounts for such repetition. In one, the predictors of both repeated and novel actions lie in "attitudes and intentions that are available to introspection" (Ajzen, 2002, p. 108). In the other, regularity in consumption, purchase, and other behaviors reflect *habits*, or behavioral dispositions, to repeat well-practiced responses as they are triggered automatically by recurring circumstances (Neal, Wood, & Quinn, 2006; Triandis, 1977, 1980). In this latter view, with repetition, associations can form in memory between responses and stable features of performance *contexts* including specific times, locations, moods, and interaction partners. Once acquired, context-response associations are activated when people again encounter the context. These associations then are available to guide responding without necessarily requiring intentions (Wood & Neal, 2007).

We tested these competing models in two longitudinal studies predicting the frequency of college students' purchase and consumption behaviors (e.g., buying fast food). At the beginning of the studies, we measured students' intentions, or conscious decisions, to perform these actions. We also measured the past frequency with which they had performed the actions in stable contexts, and we used this as an indicator of habit strength. Regression models then tested the extent to which repeated performance reflected intentions, response habits, or some combination of these.

HABITS IN MODELS OF BEHAVIOR PREDICTION

The best-known model of behavior prediction, Fishbein and Ajzen's (1975) theory of reasoned action, was developed to predict volitional actions (those under personal control) from behavioral intentions. It explicitly excluded habitual and other behaviors for which people may be unable to carry out their intentions. Subsequently, Ajzen (1985) extended the model into the theory of planned behavior to address non-volitional actions. He added a predictor, perceived behavioral control, to represent the extent to which people have the resources, skills, and opportunities for performance. In so doing, Ajzen (2002) claimed that, "measures of intention and perceived control should fully mediate the effects of earlier experiences on later action" (p. 108). In this view, repetition of action does not change the decision-making mechanisms determining that action. With repetition, decision making simply becomes more efficient so that

attitudes and intentions are activated automatically and guide action without conscious supervision.

In contrast to the planned behavior approach, other predictive models have recognized the role of habit dispositions (i.e., Eagly & Chaiken, 1993; Ouellette & Wood, 1998; Triandis, 1977, 1980)—that is, because context cues can trigger habitual responses relatively automatically, habits are not thought to require supporting intentions. Triandis (1977) explained:

When a behavior is new, untried, and unlearned, the behavioral-intention component will be solely responsible for the behavior, while, when the behavior is old, well-learned, or overlearned and has occurred many times before in the organism's life span, it is very likely to be under the control of the habit component. (p. 205)

In this view, intentions are not required to guide many frequently practiced actions.

The potential for habitual responses to override intentions will not be evident for many everyday actions, given the positive correlation that typically exists between strength of intentions and strength of habits (as represented by frequency of past performance). In one estimate across 33 studies, this relation was moderate in size, $r = .43$ ($p < .01$; Ouellette & Wood, 1998). Of course, the relation will not always be positive, as is evident with so-called bad or unwanted habits. When intentions and habits conflict in this way, people typically *can* exert regulatory control and act on their intentions as opposed to habit dispositions. Triandis's (1977) prediction is that people typically do not do so. The tendency for habits to run off despite intentions to act otherwise is understandable given that inhibition of automatically cued responses requires regulatory control, and that such control appears to be a limited resource that is easily depleted in daily life (Muraven & Baumeister, 2000).

EMPIRICAL PREDICTION OF HABITS

Ultimately, the role of habit dispositions in predicting subsequent behavior will be decided by empirical test. Most of the evidence suggesting that habits moderate intentions in the way Triandis (1977) proposed has been pieced together across studies, none of which individually tested for the interaction (Eagly & Chaiken, 1993; Ouellette & Wood, 1998). The few direct tests of habit mechanisms typically evaluated just the main effect contributions of habit and intentions in predicting future behavior (e.g., Bentler & Speckart, 1979). To our knowledge, only four published studies have reported a moderating role of habit disposition in the effects of intentions (Ferguson & Bibby, 2002; Ouellette & Wood, 1998, Study 2; Verplanken, Aarts, van Knippenberg, & Moonen, 1998; Wood, Tam, & Guerrero Witt, 2005). In noting this limited data base, Sheeran (2002)

concluded that the role of habits in behavior prediction “requires a great deal more attention before clear conclusions can be drawn” (p. 27). Ajzen (2002) offered an even more pessimistic view that, “empirical tests ... have so far met with little success” (p. 107). One purpose of the reported research is to evaluate the moderating pattern of habits across a number of consumption and purchase activities to assess its reliability in consumer domains.

A second purpose of the present research is to clarify the meaning of such effects. Questions have been raised about how to interpret commonly used measures of habit strength and how to interpret measures of intention in the context of habit strength (see Ajzen, 2002).

Interpreting Measures of Habit Strength

The standard measure of habit strength is past performance frequency (e.g., Ronis, Yates, & Kirscht, 1989; Triandis, 1977). Given that frequent repetition is the mechanism through which habits are formed, past frequency, especially in stable contexts, is an ideal indicator of strength. It is sometimes argued that habit measures derived from past performance have an artifactual relation to future behavior; their predictive success reflects that the predictor shares method variance with the criterion (Ajzen, 2002; Sheeran, 2002). However, such an artifact could account for a main effect of past behavior in the prediction of future behavior, but it could not explain an interaction pattern in which strong habits moderate the effects of intentions.

A more plausible artifactual account of the moderating effects of habits arises from the recognition that people repeat actions for a number of reasons, and that frequent performance could reflect these other factors in addition to habits. To address this issue, present research evaluates the effects of habits in models that control for intentions. Suggesting that the effects of habit strength in past research do not reflect other variables that covary with past performance, Ouellette and Wood (1998, Study 2) found that habit strength continued to moderate the predictive effects of intentions in regression models that controlled for (a) self-concept as someone who performs a behavior, (b) perceived behavioral control and efficacy, and (c) attitude accessibility in terms of reaction time to give judgments.

Despite that habit strength sometimes is evaluated from simple frequency of past performance, this measure is likely to be appropriate only for actions that are performed largely in a given context (e.g., using seatbelts). For such actions, frequent performance implies stable contexts. However, for actions performed across multiple circumstances, measures of the contiguity between behavior and contexts should be an important component of the cuing mechanism underlying habit strength (Wood & Neal, 2007). In recognition of the role of performance contexts, the measure of habit strength in the present research was frequency of performance in stable contexts.

The reliance on self reports in measuring habit strength raises additional concerns having to do with the way that people estimate their past performance on free-recall measures (e.g., Menon, 1993; Schwarz & Oyserman, 2001). A particular concern is evidence that people’s estimation strategy varies with performance frequency. People tend to recall specific episodes of performance to estimate infrequently performed actions (e.g., “I did this last Friday, so that’s once per week”), whereas they rely on overall rates of performance to estimate more frequent actions (e.g., “I do this every morning, so that’s seven times per week”). In the present research, we evaluated whether the strategy used to remember and report on past acts influences the predictive ability of habit dispositions.

Interpreting the Impact of Intentions

To explain the finding that past behavior predicts future behavior independently of intentions (e.g., Ouellette & Wood, 1998), Ajzen (2002) argued that past behavior can be a more accurate indicator of people’s true intentions and behavioral control than ratings of intentions and control. This supposedly occurs when people’s intentions are weak, their expectations for control over performance are unrealistic, or their intentions have changed since last measured. However, this account does not match with the conditions in which past behavior should have its major predictive role. We anticipate that the strongest effects of past performance will emerge when people have frequently repeated an action. With frequent performance, people also should hold especially strong, well-informed, and stable intentions, despite that these intentions do not predict future behavior. To evaluate the strength of people’s intentions for habitual behavior, we assessed the certainty with which intentions are held.

The effects of habits in predictive models also might be due to an artifact arising from the way that intentions typically are specified on rating forms. As actions are repeated, people think less about the specific performance details and more about the abstract goals and outcomes of the behavior (Vallacher & Wegner, 1987). It could be that intentions undergo a similar shift so that, for example, intentions to ride the bus become more abstract with repeated experience; specific intentions to catch the bus at a particular time might change to more abstract intentions to get to school or work. According to this artifact, habit effects should emerge when this change in the specificity of intentions is not captured adequately in measures of intentions—that is, people’s bus riding might not be predicted by their specific intentions to ride the bus but instead by more abstract intentions to get to work. In the second study, we tested the possibility that repeated actions are guided by global, abstract intentions that are not validly captured with the specific intention measures used in most behavior prediction research.

Finally, we considered another possible artifact that can influence responding in behavior prediction research—the mere

measurement effect (Morwitz & Fitzsimons, 2004); that is, merely measuring people's behavioral intentions can increase the frequency of behavior performance. We conducted analyses to determine whether this effect occurred in this research.

THIS RESEARCH

To test the role of habits in behavior prediction and to explore the correct interpretation of predictive measures, we conducted two 7-day diary studies in which participants daily tracked the frequency with which they purchased fast food and watched television news. The second study also assessed daily frequency of riding the bus. The assessment of three different behaviors provided an internal replication of our findings. At the beginning of the study week, participants reported on their intentions to perform each of these actions during the week and estimated the frequency of their past performance and the stability of performance circumstances. Habits were defined as frequent past performance in stable circumstances.

We considered several different aspects of the performance circumstances that might cue habit performance including the physical location, participants' mood, the time of day, and the social setting (i.e., the presence of particular other people). We expected that the effects of these four environmental cues would not necessarily be uniform across the three behaviors we assessed, but we had no *a priori* hypotheses about what cues might be important for what behaviors.

Our primary prediction in both studies was that strong habits would moderate the effects of consumers' intentions to purchase and consume. In addition, to assess the various artifactual accounts of habit effects in behavior prediction, we conducted analyses to determine whether the interaction depended on (a) the strategy that participants used to recall their past behavior (Study 1), (b) the certainty of their intentions (Study 2), (c) the abstractness of their intentions (Study 2), and (d) restriction of range in the measures (both studies). Given that the basic design of the two studies is identical, we report their findings jointly.

METHOD

Participants

Participants in Study 1 were 57 male and 60 female introductory psychology students at a large Southwestern university, and participants in Study 2 were 59 male and 57 female introductory marketing students at a large Midwestern university. In both cases, they participated as part of their introductory course experience. An additional 6 students in Study 1 and 8 students in Study 2 who failed to provide daily diary reports for more than 2 consecutive days were excluded from the analysis.

Procedure

Participants showed up in groups of approximately 20 to complete an initial session in which they completed a battery of questionnaires assessing their reactions to purchasing fast food, watching news on TV, and (in Study 2 only) taking the bus. For the diary assessment, they reported once per day during the subsequent week whether they performed each behavior.

Initial Questionnaire Measures

Estimate of Past Behavior Frequency: Studies 1 and 2

To assess the frequency of past performance, participants gave a numerical estimate to the open-ended question, "In a week, how many times do you buy food from a fast-food counter or restaurant/watch news on TV/take the bus?" This estimate was obtained at the beginning of the questionnaire to minimize influence from other measures.¹

Strategy for Estimating Past Frequency: Study 1

Participants then reported how they came up with the estimated number for fast food and watching TV news. They were told, "As specifically as possible, please write down what you thought about in order to generate this number." Two independent coders rated participants' thoughts to identify estimation strategies. Specifically, *episodic strategies* were indicated if participants listed specific information about a behavioral episode, such as when or where it occurred (e.g., "I went to Wendy's last Tuesday after my evening class, and last Friday I bought a sandwich in Subway for lunch before I went to work. So I buy fast food about twice a week"). Alternatively, *rating strategies* were indicated if participants noted that (a) the rate information was stored prior to the study, (b) the rate information was computed when answering the question (e.g., "I watch evening news every weekday after school, so that about five times a week"), or (c) the rate information was adjusted on accessible episodes (e.g., "I typically watch news every evening, but have a night class on Wednesday evening this semester, so I watch news six times a week"). Judges also could use a third, uncertain, category if the estimation strategy was unclear. Judges

¹At the end of the first session in Study 1, we also assessed past performance frequency in a more detailed measure in which participants were given a matrix form for each behavior that listed each day of the week at the top and the hours of the day at the left. They were told to think of times that they performed the relevant behavior during the past week and indicate each incident by writing the performance location in the appropriate time slot. Because this measure yielded findings highly similar to those obtained with the standard estimates of performance frequency, we do not report the matrix measure in the text.

agreed on 98% of the judgments for eating fast food and 97% for watching news on TV.²

When asked to provide estimates of how often they bought fast food, 19 participants (17%) used an episodic strategy in which they remembered specific instances when they bought fast food; 86 (78%) used a rating strategy in which they used a rate, such as purchase once per day, to generate frequency (6 participants, or 5%, did not use either strategy). When asked for general estimates of how often they watched news on TV, 30 participants (28%) used an episodic strategy; 62 (57%) used a rating strategy (16 participants, or 15%, did not use either strategy).

Circumstances Supporting Performance: Studies 1 and 2

Participants reported on four separate scales the stability of the circumstances in which they performed each behavior. Location stability was rated on a scale ranging from 1 (*seldom in the same place*) to 3 (*always in the same place*). Time stability was rated on a scale ranging from 1 (*seldom at the same time of the day*) to 3 (*always at the same time of the day*). Stability of others present was rated on a scale ranging from 1 (*seldom with the same people*) to 3 (*always with the same people*). Stability of mood was rated on a scale range from 1 (*seldom in the same mood*) to 3 (*always in the same mood*). On each scale, participants also could indicate 0 (*never did the behavior*).

Habits: Studies 1 and 2

Following past research, habit strength was calculated as a product of past performance frequency and stability of performance circumstances (W. Wood et al., 2005). Specifically, we multiplied participants' estimated frequency by each of their ratings of stability of the supporting circumstances (i.e., physical location, time of the day, other people, mood). Thus, four measures of habit strength were calculated for each domain in order to reflect the four aspects of circumstances that could serve as cues for habitual repetition. These measures ranged from 1 to 45 for purchasing fast food, from 0 to 69 for watching news on TV—excluding two extreme values that were treated as outliers in the analysis, and from 0 to 42 for taking the bus.

Standard Intentions: Studies 1 and 2

On two 7-point scales, students reported their intentions with respect to each behavior by rating the statements, "I intend to buy food from a fast-food counter or restaurant/

watch news on TV/ride the bus next week," and "I will actually buy food from a fast-food counter or restaurant/watch news on TV/ride the bus next week." Response options for both scales ranged from 1 (*strongly disagree*) to 7 (*strongly agree*). These measures were highly correlated within studies and behavioral domain, with *rs* ranging from .87 to .97, and were aggregated into a single intention index for each behavior with higher numbers indicating more favorable intentions.³

Identification Level of Intentions: Study 2

To identify appropriate abstract, high-level identities for each behavior, we asked 27 pretest participants to generate different ways of describing each behavior (using the procedure of Vallacher & Wegner, 1987). For watching TV news, a majority of participants noted that they intended to perform the activity to keep up with current events. This description indicates why the action was done and thus is an indicator of higher level or more abstract identities. It was taken as the *high-level intention* measure in the actual study so that participants rated, "I intend to/will actually keep up with current events by watching news next week," on two 7-point scales ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). These ratings were correlated ($r=.79$) and therefore were aggregated into a mean value.

For purchasing fast food, a majority of pretest participants also suggested that they planned to do so in order to eat quickly and conveniently. Thus, this formed the high-level intention measure in the actual study so that participants rated, "When I am on the go, I intend to/will actually grab something quick and convenient from a fast-food counter or restaurant next week." The two ratings were highly correlated ($r=.87$) and therefore were aggregated into a mean judgment.

Because pretest participants did not converge on any particular higher level intention for taking the bus, we decided to allow the actual participants to provide their own, personal descriptions of this activity. Before completing the standard intention measures, participants gave two descriptions of "taking the bus." Then, they rated each of these on the following scales: "Next week, I intend to/will actually: ____." Given the high correlation between measures ($rs=.98$ and $.94$), the mean for each description was taken as the measure of *self-described intentions*.

Certainty of Intentions: Study 2

For each intention measure, we asked participants to rate how certain they were about their responses on a 7-point scale ranging from "not certain at all" (1) to "very certain" (7).

²After participants completed the open-ended measure in which they described their estimation strategy, we asked them to directly rate the strategy, giving them several options. Analyses on the direct ratings did not yield any results, perhaps because of the complexity of distinguishing between strategies. Thus, we do not discuss this measure further.

³Participants also reported their attitudes toward buying fast food and watching news on TV. Because we did not have any hypotheses about the attitude measure, we do not discuss this further.

Diary Reports of Behavior in the Study Week

During the week-long data collection period, students responded via e-mail (Study 1) or a Web site (Study 2) at the end of each day (i.e., around 11:00 p.m. in the evening) to indicate when, where, and with whom they purchased fast food, watched news on TV, and took the bus (Study 2) for that day, if at all. They wrote this information on a standard form. If participants did not respond for a given day, they were contacted by the experimenter via e-mail the next morning and reminded about the daily report. From these reports, we calculated the frequency of behavior performance in terms of the total number of times students performed each behavior during the week.

RESULTS

Descriptive Analyses

Table 1 displays the means and standard deviations of the variables for each domain of behavior.⁴ The mean levels of intention suggest that participants had strong intentions during the study week to buy fast food and to watch news on TV but less strong intentions to ride the bus. The bivariate correlations between variables, calculated for each study, indicated high correlations among the four measures of habit strength; r s ranged from .83 to .98 across the three behavioral domains. In addition, intentions to perform correlated with actual reports of performance during the study week for purchasing fast food, r s = .43 and .34 (p s < .01, for Study 1 and 2, respectively); watching TV news, r s = .34 and .59 (p s < .01, for Study 1 and 2, respectively); and taking the bus, r s = .58, .27, and .29 (p s < .01, for rated general intention and the 2 self-described intentions, respectively). Rated intentions and the two self-described intentions were correlated in Study 2, with r s = .63 and .59 (p s < .05). In addition, the relations between habit strength and intention varied across behavioral domain, with the lowest associations emerging for watching TV news in Study 1— r s ranged from .30 to .33 (p s < .01); and the highest for taking the bus— r s ranged from .71 to .77 (p s < .01).

Intention and Habit Strength Predict Behavior

Diary reports of behavior frequency during the study week were aggregated into the total number across the week.

⁴The reports of frequency of watching TV news included two extreme outliers in which participants gave general estimates of watching more than 50 times per week (compared with the next-most frequent reports of 25 times per week). To normalize the distribution of responses, we excluded these two cases from the reported analysis. Including these outlying values yielded highly similar results to those we report in the text.

TABLE 1
Studies 1 and 2: Means and Standard Deviations

Variable	Taking the Bus		Buying Fast Food		Watching News on TV	
	Mean	SD	Mean	SD	Mean	SD
Estimated frequency of past behavior	3.47	3.58	3.73	2.81	3.87	3.60
Diary reports of behavior during the study week	2.93	3.99	3.96	3.38	2.94	2.92
Standard intention	4.39	2.60	5.45	1.66	4.89	1.83
Abstract, high-level intentions	5.40	2.34 ^a	4.88	1.71	4.59	1.83
Certainty of standard intentions	5.11	2.34				
	6.19	1.55	5.59	1.29	5.60	1.17
Same physical location	1.93	1.39	2.10	0.64	2.60	0.82
Same time of day	1.87	1.39	2.10	0.75	2.16	0.93
Same people present	1.37	1.17	2.05	0.84	2.10	0.88
Same mood	1.55	1.22	2.33	0.63	2.20	0.82

Note: Estimates of behavior frequency represent the number of times per week participants reported performing the behavior. Intention to perform behavior was measured on a 7-point scale, with higher numbers reflecting more favorable intention. Same physical location, time of day, others present, and mood were measured on 4-point scales, with higher numbers indicating that participants usually performed the behavior in the same circumstances. N s were 229 and 227 for buying fast food and watching TV news, respectively, and 116 for taking the bus.

^aFor taking the bus, students described their intentions twice so as to generate two measures of self-described intention.

Given that each behavior incident occurred independently of each other, the counts were modeled as Poisson random variables (Lunneborg, 1994), and the data were analyzed using SAS GENMOD (8th ed.).

We calculated four Poisson regression analyses for each behavior to evaluate the extent to which behavior during the study week could be predicted by habit strength, the standard measure of intention, and the interaction between habits and intentions. The habit measure was centered before being entered as a predictor. The number of days in each report also was included as a predictor in the analyses to reflect that the number of reports for participants varied from six to eight. For the analyses, diary reports were log transformed (McCullagh & Nelder, 1989). Note that in the analyses reported later, each Poisson regression model demonstrated satisfactory goodness of fit (i.e., $Deviance/df < 2.00$; $\chi^2/df > 0.50$ but < 2.00).

Buying Fast Food

We first conducted regression analyses for each study separately. Given the marked consistency in the results, we simplified presentation of the findings by combining the two sets of data. Initially, we calculated the model on the combined data set including study as a predictor along with habit strength, intention favorability, and all of the interactions. The three-way interaction did not approach significance

($\chi^2=0.14, 0.89, 1.19, 1.40$ for the models calculating habit strength from stability in physical location, mood, time of the day, and other people, respectively; nonsignificant), and we conducted a series of drop-in-deviance tests (see Ramsey & Shafer, 1997)⁵ to identify the appropriate model parameters. The final model included predictors of habit, intention, study, and the Habit \times Intention interaction.

The predicted interaction was significant when habits were calculated as frequent performance in stable locations and in stable moods. As can be seen in Tables 2 and 3, the regression models for these analyses yielded not only the anticipated interaction but also significant main effects indicating that participants bought fast food more frequently when they had established a habit to do so and when they intended to do so. In addition, the significant effect for study reflected that students in Study 1 bought more fast food than those in Study 2. For the remaining two methods of calculating habit strength, only the main effects for study, habit, and intention were significant. Thus, we do not report these findings further.

To interpret the interaction effect obtained when habit was calculated from frequent performance in stable locations, we generated simple regression equations to represent the relation between purchase frequency and intention at varying levels of habits (see Cohen, Cohen, West, & Aiken, 2003). Specifically, we constructed simple slopes for participants with weak or no habits (i.e., habit scores 1 *SD* below the mean), for those with moderate habits (i.e., habit scores at the mean), and for those with strong habits (i.e., habit scores 1 *SD* above the mean). The study variable was set to zero in constructing the regression slopes for Study 2; Study 1 slopes would have a .52 higher intercept. The slopes displayed in the right panel of Table 2 reveal that intentions did not guide behavior when participants had established strong habits for purchasing fast food. Specifically, the regression slopes were relatively flat when habits were strong (nonstandardized $\beta=-0.05$, *ns*), but the slope was significant when habit strength was moderate (nonstandardized $\beta=0.11$, $p < .05$) or weak (nonstandardized $\beta=0.27$, $p < .01$). A similar interaction pattern emerged when mood was

used to calculate habit index (Table 3, right panel). Specifically, the regression slopes were relatively flat when habits were strong (nonstandardized $\beta=0.04$, *ns*), but the slope was significant when habits were moderate in strength (nonstandardized $\beta=0.14$, $p < .001$) or weak (nonstandardized $\beta=0.24$, $p < .001$).

Watching TV News

Again, we initially conducted separate analyses for each study; given the correspondence in findings, we report the combined results. In the combined analysis, the three-way interaction did not approach significance ($\chi^2 = 0.03, 0.01, 0.01, 0.02$ for the models using physical location, mood, time of the day, and people to calculate habits respectively; nonsignificant). We again conducted a series of drop-in-deviance tests to identify the parameters to include in the model.⁶ The final model included the main effects of study, habit strength, intention favorability, and the Habit \times Intention interaction.

With each method of calculating habit strength, the predicted interaction emerged between strength and intention. In addition, main effects were obtained in each equation for intentions and habits, indicating that people watched more TV news when they intended to do so and when they had established a habit to do so. Also, the main effect for study reflected that students in Study 1 watched more news than those in Study 2. To interpret the Habit \times Strength interactions, we again generated simple slopes for the relation between intention and behavior at each level of habit strength. Given that the four regressions yielded similar interaction patterns, we only report the results of those using habit calculated with respect to physical location (Table 4) and mood (Table 5)—as we reported for the analysis of purchasing fast food. The regression slopes were all significant when habits were moderate (nonstandardized $\beta=.20$ and $.21$, for location and mood, respectively; $ps < .001$) or weak (nonstandardized $\beta=.29$ and $.28$, for location and mood, respectively; $ps < .001$), and were less pronounced although still significant when habits were strong (nonstandardized $\beta=.12$ and $.11$, for location and mood, respectively; $ps < .01$).

⁵For predicting purchasing fast food, the drop-in-deviance tests first were computed to compare a reduced model without the three-way interaction against the full model. Here, we only reported the statistics for the models that use physical location to calculate the habit index. The deviance difference between the two models was 0.25 ($df=1$, *ns*), suggesting the sufficiency of the reduced model. We then conducted similar tests to determine whether the two-way interaction terms involving study should be retained in the final model. The deviance differences were 2.63 ($df=2$) and 4.93 ($df=2$), both *ns*; this suggested that the reduced models were sufficient without the Study \times Intention interaction or the Study \times Habit strength interaction, respectively. These results were further substantiated by a final drop-in-deviance test to compare the reduced model without the interaction terms involving study against the full model with all interactions. The deviance difference had a value of 5.93 ($df=3$, *ns*) and suggested that the reduced model was adequate to predict the dependent variable.

⁶For predicting watching TV news, the drop-in-deviance tests were computed as in Footnote 5 and revealed that the reduced model without the three-way interaction yielded a nonsignificant deviance difference with the full model (deviance=0.04, $df=1$, *ns*). Similarly, excluding the two-way interaction terms involving study yielded nonsignificant deviance differences with the full models in which they were retained (deviance=0.09, $df=2$, *ns* and deviance=2.68, $df=2$, *ns* for the Study \times Intention and the Study \times Habit strength interactions, respectively). The final drop-in-deviance test compared the reduced model without the interaction terms involving study against the full model with all interactions and yielded a deviance difference of 3.96 ($df=3$, *ns*), which suggested that the reduced model was adequate to predict the dependent variable.

TABLE 2
Studies 1 and 2: Poisson Regression Analysis Predicting Frequency of Buying Fast Food From Intention to Buy and From Past Buying Habits

Variable	β	SE	χ^2	Decomposition of Interaction
Intercept	0.41	0.37		
Study	0.52	0.11	21.40**	
Intention (I)	0.11	0.04	6.50*	
Habit (H)	0.05	0.01	19.44**	
I \times H	-0.03	0.01	11.17**	
N of days	0.10	0.05	3.47	

Note: N of days was included as a predictor because diary entries ranged from six to eight. Physical location was used to calculate the habit index.

* $p < .01$.
** $p < .001$.

TABLE 3
Studies 1 and 2: Poisson Regression Analysis Predicting Frequency of Buying Fast Food From Intention to Buy and From Past Buying Habits

Variable	β	SE	χ^2	Decomposition of Interaction
Intercept	0.42	0.36		
Study	0.51	0.11	21.68**	
Intention (I)	0.14	0.04	13.36*	
Habit (H)	0.04	0.01	20.34**	
I \times H	-0.01	0.01	6.67*	
N of days	0.09	0.05	2.96	

Note: N of days was included as a predictor because diary entries ranged from six to eight. Mood was used to calculate the habit index.

* $p < .01$.
** $p < .001$.

Taking the Bus: Study 2

This behavior was assessed only in the second study, and thus we report the results for this study alone. Of the four regression models, the anticipated interaction between habit strength and intention emerged when habit strength was calculated from stability of other people ($\chi^2=5.32, p < .05$) and, on marginally significant bases,

when habit strength was calculated from stability of physical location and time of day ($ps < .10$). As with the earlier results, the interaction pattern was consistent across the various measures of habit. Thus, we selected two of the domains to illustrate the results, that is, with habit measures derived from stability of performance location (Table 6) and other people (Table 7).

TABLE 4
Studies 1 and 2: Poisson Regression Analysis Predicting Frequency of Watching News on TV From Intention to Watch and From Past Watching Habits

Variable	β	SE	χ^2	Decomposition of Interaction
Intercept	1.08	0.39		
Study	0.35	0.11	10.04*	
Intention (I)	0.20	0.04	24.53**	
Habit (H)	0.04	0.01	74.04**	
I × H	-0.01	0.002	11.99*	
N of days	0.01	0.06	0.01	

Note: N of days was included in the Poisson regression analysis because some participants made six or eight days of diary entries instead of 7 days over the week. Physical location was used to calculate the habit index.

* $p < .01$.
** $p < .001$.

TABLE 5
Studies 1 and 2: Poisson Regression Analysis Predicting Frequency of Watching News on TV From Intention to Watch and From Past Watching Habits

Variable	β	SE	χ^2	Decomposition of Interaction
Intercept	1.07	0.39		
Study	0.32	0.11	7.94*	
Intention (I)	0.21	0.04	26.78**	
Habit (H)	0.04	0.01	74.03**	
I × H	-0.01	0.003	8.60*	
N of days	0.001	0.06	0.01	

Note: N of days was included as a predictor because diary entries ranged from six to eight. Mood was used to calculate the habit index.

* $p < .01$.
** $p < .001$.

For the regressions in which physical location (Table 6) and people (Table 7) were used to calculate habits, the decomposition of the overall interaction term revealed that the slopes were significant when people's habits were weak (nonstandardized $\beta = .49$ and $.56$, $p < .01$, for location and others present, respectively) or moderate in strength (nonstandardized $\beta = .28$ and $.24$, $ps < .06$, for location and others present, respectively), but the slopes were not significant when habits were strong (nonstandardized $\beta = .07$

and $-.08$, for location and others present, respectively; nonsignificant).

Is the Moderating Role of Habits an Artifact of Study Measurement or Design?

We conducted a number of analyses to rule out possible artifactual explanations for the obtained pattern in which intentions only predicted behavior when habits had not been formed.

TABLE 6
Study 2: Regression Analysis Predicting Frequency of Taking the Bus From General Intention and From Past Bus Riding Habits

Variable	B	SE	χ^2	Decomposition of Interaction
Intercept	-0.79	1.03		
Intention (I)	0.28	0.13	4.69**	
Habit (H)	0.09	0.03	9.01***	
I × H	-0.02	0.01	3.04*	
N of days	0.22	0.15	2.18	

Note: N of days was included as a predictor because diary entries ranged from six to eight. Physical location was used to calculate the habit index.

* $p < .10$.
** $p < .05$.
*** $p < .01$.

TABLE 7
Study 2: Regression Analysis Predicting Frequency of Taking the Bus From General Intention to Take and From Past Bus Riding Habits

Variable	B	SE	χ^2	Decomposition of Interaction
Intercept	-1.07	1.03		
Intention (I)	0.34	0.13	3.63*	
Habit (H)	0.13	0.04	8.09***	
I × H	-0.04	0.02	5.32**	
N of days	0.28	0.15	3.84**	

N of days was included as a predictor because number of diary entries ranged from six to eight. People was used to calculate the habit index.

* $p < .10$.
** $p < .05$.
*** $p < .01$.

Restriction of Range in Predictors or Criterion

Readers might wonder whether the relatively flat slope apparent for strong habit participants is a product of restriction of range. If participants with strong habits had uniformly favorable intentions or uniformly high frequency of performance, then the lack of variability in these measures might have obscured any relations between them. To assess

this possibility, we calculated variability scores for measures of intention and behavior performance during the study week by subtracting each participant’s measure from the median value for the study and taking the absolute value of this difference. Challenging the restriction of range account, no consistent pattern of relations emerged between habit strength and intention variability: For purchasing fast food, r_s ranged from $-.33$ to $-.24$ ($p_s < .01$); for watching

TV news, r_s ranged from $-.07$ to $-.02$ (ns); and for taking the bus, r_s ranged from $-.54$ to $-.65$ ($p < .01$). Furthermore, directly countering restriction of range, habit strength was generally positively associated with variability in performance during the study week: For purchasing fast food, r_s ranged from $.28$ to $.36$ ($p < .01$); for watching TV news, r_s ranged from $.49$ to $.54$ ($p < .01$); and for taking the bus, r_s ranged from $.48$ to $.57$ ($p < .01$). Thus, the failure for intentions to guide behavior for participants with strong habits cannot be attributed to a restriction of range in the intention or behavior measures.

As another way of evaluating restriction of range, we divided participants into groups representing those with strong habits, in the top third of the habit measure; and those with weak habits, or the bottom third. With respect to intentions to purchase fast food, the mean for the strong habit group was 6.45 ($SD=0.96$; $range=6.0$), and for the weak habit group it was 4.55 ($SD=1.79$; $range=6.0$). For intentions to watch TV news, the mean for those with strong habits was 6.29 ($SD=1.01$; $range=6.0$), and for those with weak habits it was 3.27 ($SD=1.60$; $range=6.0$). With respect to the behavioral measure of purchasing fast food, the mean performance frequency for the strong habit group was 5.85 ($SD=3.04$; $range=16.3$), and for the weak habit group it was 2.51 ($SD=3.30$; $range=18.20$). For the behavior of watching TV news, the mean performance frequency for those with strong habits was 5.53 ($SD=3.13$; $range=17.50$), and for those with weak habits it was 1.32 ($SD=1.96$; $range=11.00$). Overall, these analyses on intentions and behaviors reveal no consistent trend for stronger habits to be associated with less variability in measures.

Certainty of Intentions: Study 2

Another plausible alternative explanation is that participants with strong habits may have held their intentions with less certainty (see Ajzen, 2002). To address this account, we calculated bivariate correlations to determine whether reported certainty in intentions decreased with increasing habit strength. As can be seen in Table 8, the

TABLE 8
Study 2: Bivariate Correlations Between Certainty of Standard Intention to Perform Next Week and Habits

Habit	Intention to Buy Fast Food	Intention to Watch TV News	Intention to Ride the Bus
Physical location	0.24**	.35**	.21*
Mood	0.23**	.33**	.19*
Time	0.18	.36**	.23*
People	0.25**	.35**	.26*

Note: On the original scales, higher numbers indicate stronger habits and more favorable intentions to buy fast food, watch TV news, and ride the bus.

* $p < .05$.

** $p < .01$.

obtained effect was just the opposite from this artifactual account. Participants' certainty about their intentions increased with increasing habit strength. This effect emerged across all three of the behavior domains investigated in this research.

Level of Action Identification: Study 2

We also evaluated whether the failure for intentions to predict habitual behavior stemmed from participants with strong habits identifying their behavior in an abstract way that did not correspond to our standard intention measures. To address this possibility, we recalculated the regression models, substituting the *high-level intention* measures for the standard measures of intention reported earlier.

For purchase of fast food, the interaction between habit and high-level intentions was significant in all regression equations. Illustrating this pattern with the habit strength measure calculated from stability of location, the interaction term was significant ($\chi^2 = 4.90$, $p < .05$; Table 9); simple effects decomposition revealed the expected pattern in which intention significantly predicted behavior when habits were weak (nonstandardized $\beta = .29$, $p < .01$) or moderate (nonstandardized $\beta = .15$, $p < .05$) but not when habits were strong (nonstandardized $b = .03$; nonsignificant).

For watching TV news, the predicted interaction was not significant for any of the four methods of calculating habit strength, although in each equation the main effect for habit and the main effect for high-level intentions approached significance (all $p < .10$). Given that intentions were not strong predictors of behavior in these models, it seems that, despite our efforts at pretesting, we failed to capture adequately the particular high-level intentions used by participants in the research.

For taking the bus, participants provided their own intention descriptions and then rated the strength of each, thus providing two self-described intention measures. We analyzed each separately, yielding eight regressions given the four methods of calculating habits. Each regression yielded the anticipated interaction along with an effect for habit strength and for self-described intention. For brevity, we illustrate the pattern of the interactions with habit strength calculated from physical location for the first self-described intention. The significant interaction between habit and the first self-described intention ($\chi^2 = 6.30$, $p < .05$; Table 10) revealed that self-described intention significantly predicted behavior when habits were weak (nonstandardized $\beta = .22$, $p < .05$), but the slope was not significant when habits were moderate (nonstandardized $\beta = .04$, ns) or strong (nonstandardized $\beta = -.13$; nonsignificant).

Strategy Used to Estimate Past Behavior Frequency: Study 1

We conducted analyses to determine whether the behavior prediction findings were influenced by the strategy

TABLE 9
Study 2: Poisson Regression Analysis Predicting Frequency of Buying Fast Food From Higher level Intention to Buy and From Past Buying Habits

Variable	B	SE	χ^2	Decomposition of Interaction
Intercept	-0.68	0.91		
Intention (I)	0.04	0.08	0.26	
Habit (H)	0.08	0.01	45.95**	
I × H	-0.02	0.01	6.03*	
N of days	0.22	0.01	2.30	

Note: N of days was included as a predictor because the number of diary entries ranged from six to eight. Physical location was used to calculate the habit index.

* $p < .05$.
** $p < .001$.

TABLE 10
Study 2: Regression Analysis Predicting Frequency of Taking the Bus From Self-Described Intention 1 to Take and From Past Bus Riding Habits

Variable	B	SE	χ^2	Decomposition of Interaction
Intercept	-0.68	0.91		
Intention (I)	0.04	0.08	0.26	
Habit (H)	0.08	0.01	45.95**	
I × H	-0.02	0.01	6.03*	
N of days	0.22	0.13	2.93	

Note: N of days was included as a predictor because the number of diary entries ranged from six to eight. Physical location was used to calculate the habit index.

* $p < .05$.
** $p < .001$.

participants used to estimate past performance frequency. First, we evaluated whether, as in past research, estimation strategy was associated with the frequency of their reports (e.g., Menon, 1993). As expected, participants who used a rating strategy reported buying fast food more often ($M=5.78, SD=3.12$) than did those who used an episodic strategy ($M=2.79, SD=1.75$), $F(1, 103)=32.50, p < .01$. Similarly, participants who used a rating strategy reported watching news on TV more often ($M=5.80, SD=3.59$) than did those who used an episodic strategy ($M=1.79, SD=.98$), $F(1, 89)=17.72, p < .01$. Thus, rating strategies tended to be

used to estimate more frequently performed behaviors, whereas episodic counts tended to be used to estimate less frequent actions.

To evaluate whether estimation strategy accounted for any of the predictive power of habits, we entered this factor as an initial control variable in the regression models prior to standard intentions, habit strength, and the two-way interaction between habits and intentions. First, estimation strategy did not consistently account for a significant amount of variance in behavior prediction. It approached significance only for watching TV news, and only for three of the four

indexes of habit strength (i.e., involving mood, time of day, and presence of the same other people; $ps < .06$). In addition, including estimation strategy in the equations did not consistently influence the predictive power of habit strength. In fact, when strategy did have an effect, it tended to reduce the impact of intentions rather than the impact of habits. Specifically, entering estimation strategy as a control in the prediction of fast-food purchase had no effect on the significant interaction between habit and intention. However, entering strategy as a control in the equations predicting watching TV news attenuated the effect of intentions and rendered it nonsignificant as a main effect and in interaction with habit strength. In general, these analyses reveal that the behavior prediction results were not compromised in any consistent way when we added controls representing the strategy that participants used to estimate past performance.

Mere Measurement of Intentions: Study 1

We conducted analyses to examine whether performance frequency increased following the measurement of behavioral intentions. Frequency prior to intentions was assessed from the day-by-day reports of performance in the week prior to the study (see Footnote 1). We compared this estimate with the frequency following intention reports, as reflected in behavior during the week of the diary study. In general, this analysis suggested no consistent direction of change. For purchasing fast food, performance during the study week was significantly greater than past performance, $M_{\text{difference}} = 0.75$; $t(108) = 2.58$ ($p < .05$). However, for watching TV news, performance during the study week was significantly lower than past performance, $M_{\text{difference}} = -1.82$; $t(104) = -6.27$ ($p < .01$). The different patterns across the two behavioral domains suggest that our findings were not influenced in any consistent way by the measurement of intentions.⁷

DISCUSSION

Consumers' habits tend to repeat in daily life in ways that are not accounted for by their stated intentions. Specifically,

participants' intentions did not predict future performance when they had repeatedly purchased fast food in the same performance context (i.e., in the same location, in the same mood), had repeatedly watched news on TV in the same context (i.e., in the same location, in the same mood, at the same time of the day, and with or without particular other people), or had repeatedly taken the bus in the same context (i.e., in the same location, at the same time of day, and with or without particular other people).

We interpret the repeated patterns of purchase and consumption as reflecting habit strength—that is, when people have repeated a behavior frequently in the past in particular circumstances, associations form in memory between the action and stable features of performance contexts such that behavior comes to be cued by those context features. As a result, although intentions and behavior were generally compatible for participants who possessed strong habits, intentions underpredicted future behavior. These participants continued to repeat their past behavior despite holding intentions that did not correspond systematically with the high level of repetition.

This study was designed not only to demonstrate the effects of habits in consumer behavior but also to rule out possible artifactual accounts for the effects of habit strength. First, the lack of association between intentions and behavior for participants with strong habits was not due to a restriction of range in the measures for these participants. We evaluated restriction of range in the predictor (i.e., intention) and in the criterion (i.e., future behavior). No consistent relation emerged between habit strength and amount of variability in the two measures.

We also ruled out the possibility that the predictive impact of habits was due to inadequacies in the measure of intentions. First, we were able to demonstrate that habit strength effects were not limited to contexts in which intentions were weak or uncertain. Participants' ratings of the certainty of their intentions revealed just the opposite pattern—they held intentions with greater certainty when they had stronger habits. It is striking that people did not rely on these strongly held judgments to guide habitual behavior. Such a result is consistent with intentions being an epiphenomenon for people with strong habits. Second, we demonstrated that the failure of intentions to predict behavior did not emerge from the intention measure being inappropriately specified for strong habit participants. If, as people repeat their actions, they come to understand them in more abstract, general terms (Vallacher & Wegner, 1987), then the behavior of people with strong habits might best be predicted by abstract, high-level intentions. However, countering the idea that habit effects emerge from this artifact, two separate analyses revealed that high-level intentions generated a similar predictive pattern to that obtained with the standard intentions measure. Specifically, with purchase of fast food and with riding the bus, the

⁷We also examined whether the changes in performance frequency observed before versus after the measure of intentions reflected differing social norms for the two behavioral domains. Chandon, Morwitz, Smith, Spangenberg, and Sprott (2007) suggested that the effects of mere measurement of intentions on performance depend on prevailing social norms. To examine this possibility, we conducted a separate posttest with 40 college students similar to the samples in the diary studies, and assessed their normative beliefs about purchasing fast food and watching news on TV. Given that normative beliefs did not differ across domains ($M_s = 4.82$ and 4.68 , for purchasing fast food and watching news, respectively, on a rating scale ranging from 1 [*low*] to 9 [*high*]), differential norms do not provide a plausible account for the increased frequency of fast-food purchase as opposed to the decreased frequency of watching TV.

anticipated interaction between habit strength and high-level intentions was obtained, reflecting that habitual behavior was not guided by participants' high-level intentions. Thus, we were able to rule out the possibilities that the moderating effects of habits emerged because of weaknesses in the intention measure or inadequacies in the way the measurement was conducted.

Finally, our analysis of estimation strategy ruled out two additional artifactual explanations that could account for the effects of our predictors. First, we found no consistent effects of measuring intentions on frequency of future behavior, suggesting little influence of the mere measurement effect. Second, we evaluated the strategies that participants used to generate their estimates of past behavior frequency. Participants with strong habits did not use recall strategies that systematically influenced prediction of future behavior.

Given that we were able to rule out these various alternative explanations for our findings, the most plausible explanation for intentions under-predicting performance for people with strong habits is the automated cuing of performance by recurring features of the performance context. Alternatively, it has been suggested that habits direct behavior through heuristic judgment strategies (e.g., Ajzen, 2002). Perhaps the repetition of action into habits does not circumvent decision making but instead makes it more efficient so that attitudes and intentions are spontaneously activated and used in simple heuristic-type decisions. This possibility aligns with consumer behavior models that treat habits as decision-making heuristics (e.g., Hoyer, 1984). However, the predictive effects of past behavior cannot plausibly be explained through repeated use of intention heuristics (e.g., "buy the same brand I bought last time"). If these kinds of intention heuristics directed familiar, routine purchasing and consumption, then people would plausibly have enough practice using them to be able to rely on them when rating their intentions. These intention reports based on heuristics would then predict future behavior—a result contrary to the present findings. Instead, the present data plausibly contribute to the growing evidence of the ways in which responses are cued by features of performance contexts (i.e., Chartrand, 2005; Dijksterhuis, Smith, van Baaren, & Wigboldus, 2005).

Context Cues for Action

We anticipated that habits would be repeated to the extent that they were triggered by recurring context cues, but we did not have clear predictions about which cues in particular would be important for the three behaviors in our research. We assessed four aspects of the performance context that had proved important in previous work, including the physical location, time of day, mood, and the presence of particular other people. The one aspect of context that consistently supported habit performance across the three behavior

domains was physical location—that is, for participants who had formed habits of purchasing fast food, watching TV news, or riding the bus, being in certain places (e.g., driving by their favorite fast-food restaurant, being in their apartment) cued repeat performance regardless of their intentions. Beyond physical location, the other context cues functioned slightly differently across the behaviors we assessed. Habits for purchasing fast food were cued by being in a certain mood, habits for watching TV news were cued by all four aspects of circumstances that we assessed, and habits for taking the bus were cued by all features except mood. This finding that habits for the three behaviors were cued by slightly different aspects of the performance context suggests that it is important to assess cues in measures of habit strength. Past behavior frequency by itself does not adequately capture the cuing mechanism that promotes habit performance.

Context cues have been studied by consumer researchers under the label of situational variables. In a classic discussion of context, Belk (1975) identified five types of situational characteristics including (a) physical surroundings (e.g. location, sounds, lighting), (b) social surroundings (e.g., other people, social roles), (c) temporal perspective (e.g., time of the day, season of the year), (d) task definition (e.g., shopping for a gift vs. personal use), and (e) antecedent states (e.g., moods, fatigue). Based on a review of previous studies, Belk concluded that these situational variables can substantially enhance the ability to explain and understand consumer behaviors. Building on Belk's ideas, researchers have examined how consumers' perceptions, evaluations, and brand choices are influenced by situational variables such as colors and displays (e.g., Babin, Hardesty, & Suter, 2003), reference group influences (e.g., Childers & Rao, 1992), gift shopping (e.g., Wooten, 2000), and mood (e.g., Barone, Miniard, & Romeo, 2000). In contrast with these studies that examined the role of context cues as influencing conscious evaluation and choice, this study suggests that such cues can become associated with particular responses in memory and can thereby trigger the behavior with minimal input from conscious intentions.

Habits and Repeated Consumer Behavior

Habits have been conceptualized as inertia in consumer behavior (e.g., Odin, Odin, & Valette-Florence, 2001), but their role rarely has been tested empirically (although see Beatty & Kahle, 1988). As others have noted with respect to habit strength, "it is rarely talked about in marketing circles because it seems too basic a reason for purchase" (J. Wood, 2002, p. 18). In contrast, the present research suggested that habits are a useful construct in understanding the mechanisms promoting repetition of consumer purchase and use.

Habits are but one form of context-cued responding that can perpetuate consumer choices. Habitual responding that can be initiated without intentions differs from other forms of automaticity, especially strategic forms

such as *implementation intentions* (Gollwitzer, 1999; Sheeran, Webb, & Gollwitzer, 2005). Implementation intentions represent plans of action to give a particular response in the presence of some cue (e.g., “when *x* occurs, I will perform *y*”). When the cue occurs, the intention is triggered automatically to promote the associated response. Although the common mechanism of environmental cueing might suggest equating habits with implementation intentions, these forms of automaticity differ in a number of ways. As Gollwitzer noted, habits develop gradually through repeated co-occurrence of stimuli and responses, whereas implementation intentions are an immediate product of planning and the deliberate linking of a stimulus and response.

Implementation intentions also differ from habits in their dependence on goals. According to Sheeran et al. (2005), “the term ‘strategic’ captures an important feature of the automaticity in implementation intentions that is different to the automaticity associated with habits” (p. 96). This difference between implementation intentions and habits has been demonstrated with longitudinal behavior prediction designs. Sheeran et al. found that participants enacted implementation intentions only to the extent that they held corresponding goal intentions. Thus, unlike strong habits that are performed regardless of people’s intentions, implementation intentions had little effect when they did not correspond with people’s goal intentions. These divergent effects suggest the utility of differentiating between various forms of context-cued responding that could promote repetition in consumer behavior.

In general, to the extent that repetition in contiguity with contexts is characteristic of consumer behavior, habits potentially are important to understanding how consumers function in the marketplace. Although this research did not investigate habitual purchase of specific brands, we believe that our approach could be extended to address repeated brand choice. This extension could provide insight into phenomena such as *spurious loyalty* in which a relatively unfavorable attitude is accompanied by high repeat patronage of a brand (e.g., Dick & Basu, 1994). It is possible that repeated brand purchase proceeds independently of attitudes, much as in this investigation repeated fast-food purchase proceeded independently of the favorability of intentions to do so. We hope that these findings will open investigation of habitual responding for consumer researchers.

REFERENCES

- Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl, & J. Beckmann (Eds.), *Springer series in social psychology* (pp. 11–39). Berlin: Springer.
- Ajzen, I. (2002). Residual effects of past on later behavior: Habituation and reasoned action perspectives. *Personality and Social Psychology Review*, 6, 107–122.
- Babin, B. J., Hardesty, D. M., & Suter, T. A. (2003). Color and shopping intentions—The intervening effect of price fairness and perceived affect. *Journal of Business Research*, 56, 541–551.
- Barker, R. G., & Schoggen, P. (1978). Measures of habitat and behavior output. In R. G. Barker & Assoc. (Ed.), *Habitats, environments, and human behavior: Studies in ecological psychology and eco-behavioral science from the Midwest Psychological Field Station, 1947–1972* (pp. 229–244). San Francisco: Jossey-Bass.
- Barone, M. J., Miniard, P. W., & Romeo, J. B. (2000). The influence of positive mood on brand extension evaluations. *Journal of Consumer Research*, 26, 386–400.
- Beatty, S. E., & Kahle, L. R. (1988). Alternative hierarchies of the attitude–behavior relationship: The impact of brand commitment and habit. *Journal of the Academy of Marketing Science*, 16, 1–10.
- Belk, R. W. (1975). Situational variables and consumer behavior. *Journal of Consumer Research*, 2, 157–164.
- Bentler, P. M., & Speckart, G. (1979). Models of attitude–behavior relations. *Psychological Review*, 86, 452–464.
- Bettman, J. R., & Zins, M. A. (1977). Constructive processes in consumer choice. *Journal of Consumer Research*, 4, 75–85.
- Chandon, P., Morwitz, V. G., Smith, R. J., Spangenberg, E. R., & Sprott, D. E. (2007). *When does the past repeat itself? The role of behavior prediction and personal norms* (INSEAD Working Paper 2002/60/MKT).
- Chartrand, T. (2005). The role of conscious awareness in consumer behavior. *Journal of Consumer Psychology*, 15, 203–210.
- Childers, T., & Rao, A. R. (1992). The influence of familial and peer-based reference groups on consumer decisions. *Journal of Consumer Research*, 19, 198–211.
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed.). Mahwah, NJ: Erlbaum Associates.
- Deighton, J., Henderson, C. M., & Neslin, S. A. (1994). The effects of advertising on brand switching and repeat purchasing. *Journal of Marketing Research*, 31, 28–43.
- Dick, A. S., & Basu, K. (1994). Customer loyalty: Toward an integrated conceptual framework. *Journal of the Academy of Marketing Science*, 22, 99–113.
- Dijksterhuis, A., Smith, P. K., van Baaren, R. B., & Wigboldus, D. H. J. (2005). The unconscious consumer: Effects of environment on consumer behavior. *Journal of Consumer Psychology*, 15, 193–202.
- Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitudes*. Orlando, FL: Harcourt Brace Jovanovich.
- Ehrenberg, A. S. C. (1988). *Repeat-buying: Facts, theory and applications*. New York: Oxford University Press.
- Ehrenberg, A. S. C. (1991). New brands and the existing market. *Journal of the Market Research Society*, 33, 285–299.
- Ferguson, E., & Bibby, P. A. (2002). Predicting future blood donor returns: Past behavior, intentions, and observer effects. *Health Psychology*, 21, 513–518.
- Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.
- Gollwitzer, P. M. (1999). Implementation intentions: Strong effects of simple plans. *American Psychologist*, 54, 493–503.
- Hoyer, W. D. (1984). An examination of consumer decision making for a common repeat purchase product. *Journal of Consumer Research*, 11, 822–829.
- Khare, A., & Inman, J. J. (2006). Habitual behavior in American eating patterns: The role of meal occasions. *Journal of Consumer Research*, 32, 567–575.
- Lunneborg, C. E. (1994). *Modeling experimental and observational data*. Belmont, CA: Duxbury.
- McCullagh, P., & Nelder, J. A. (1989). *Generalized linear models* (2nd ed.). New York: Chapman & Hall.
- Menon, G. (1993). The effects of accessibility of information in memory on judgments of behavior frequencies. *Journal of Consumer Research*, 20, 431–440.

- Morwitz, V. G., & Fitzsimons, G. J. (2004). The mere-measurement effect: Why does measuring intentions change actual behavior? *Journal of Consumer Psychology, 14*, 64–74.
- Motes, W. H., & Woodside, A. G. (2001). Purchase experiments of extraordinary and regular influence strategies using artificial and real brands. *Journal of Business Research, 53*, 15–35.
- Muraven, M., & Baumeister, R. F. (2000). Self-regulation and depletion of limited resources: Does self-control resemble a muscle? *Psychological Bulletin, 126*, 247–259.
- Neal, D. T., Wood, W., & Quinn, J. M. (2006). Habits—A repeat performance. *Current Directions in Psychological Science, 15*, 198–202.
- Odin, Y., Odin, N., & Valette-Florence, P. (2001). Conceptual and operational aspects of brand loyalty: An empirical investigation. *Journal of Business Research, 53*, 75–84.
- Ouellette, J. A., & Wood, W. (1998). Habit and intention in everyday life: The multiple processes by which past behavior predicts future behavior. *Psychological Bulletin, 124*, 54–74.
- Quinn, J. M., & Wood, W. (2005). *Habits and social roles in a community sample*. Unpublished manuscript, Duke University.
- Ramsey, F. L., & Schafer, D. W. (1997). *The statistical sleuth: A course in methods of data analysis*. Belmont, CA: Duxbury.
- Ronis, D. L., Yates, J. F., & Kirscht, J. P. (1989). Attitudes, decisions, and habits as determinants of repeated behavior. In A. R. Pratkanis, S. J. Breckler, & A.G. Greenwald (Eds.), *Attitude structure and function: The third Ohio State University volume on attitudes and persuasion* (pp. 213–239). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Schwarz, N., & Oyserman, D. (2001). Asking questions about behavior: Cognition, communication and questionnaire construction. *American Journal of Evaluation, 22*, 127–160.
- Sheeran, P. (2002). Intention–behavior relations: A conceptual and empirical review. In W. Stroebe & M. Hewstone (Eds.), *European review of social psychology* (Vol. 12, pp. 1–36). Chichester, England: Wiley.
- Sheeran, P., Webb, T. L., & Gollwitzer, P. M. (2005). The interplay between goal intentions and implementation intentions. *Personality and Social Psychology Bulletin, 31*, 87–98.
- Taylor, G. A. (2001). Coupon response in services. *Journal of Retailing, 77*, 139–151.
- Townsend, D. J., & Bever, T. G. (2001). *Sentence comprehension: The integration of habits and rules*. Cambridge, MA: MIT Press.
- Triandis, H. C. (1977). *Interpersonal behavior*. Monterey, CA: Brooks/Cole.
- Triandis, H. C. (1980). Values, attitudes, and interpersonal behavior. In H. E. Howe, Jr. & M. M. Page (Eds.), *Nebraska Symposium on Motivation, 1979* (Vol. 27, pp. 195–259). Lincoln: University of Nebraska Press.
- Vallacher, R. R., & Wegner, D. M. (1987). What do people think they're doing? Action identification and human behavior. *Psychological Review, 94*, 3–15.
- Verplanken, B., Aarts, H., van Knippenberg, A., & Moonen, A. (1998). Habit versus planned behaviour: A field experiment. *British Journal of Social Psychology, 37*, 111–128.
- Wood, J. (2002, July 18). Don't mistake a customer habit for brand loyalty. *Marketing, 18*.
- Wood, W., & Neal, D. T. (2007). A new look at habits and the habit–goal interface. *Psychological Review, 114*, 842–862.
- Wood, W., Quinn, J. M., & Kashy, D. A. (2002). Habits in everyday life: Thought, emotion, and action. *Journal of Personality and Social Psychology, 83*, 1281–1297.
- Wood, W., Tam, L., & Guerrero Witt, M. (2005). Changing circumstances, disrupting habits. *Journal of Personality and Social Psychology, 88*, 918–933.
- Wooten, D. B. (2000). Qualitative steps toward an expanded model of anxiety in gift-giving. *Journal of Consumer Research, 27*, 84–95.