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The habitual consumer

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Abstract

Consumers sometimes act like creatures of habit, automatically repeating past behavior with little regard to current goals and valued outcomes. To explain this phenomenon, we show that habits are a specific form of automaticity in which responses are directly cued by the contexts (e.g., locations, preceding actions) that consistently covaried with past performance. Habits are prepotent responses that are quick to activate in memory over alternatives and that have a slow-to-modify memory trace. In daily life, the tendency to act on habits is compounded by everyday demands, including time pressures, distraction, and self-control depletion. However, habits are not immune to deliberative processes. Habits are learned largely as people pursue goals in daily life, and habits are broken through the strategic deployment of effortful self-control. Also, habits influence the post hoc inferences that people make about their behavior.

Keywords: Habit; Automaticity; Goals; Self-control; Consumer behavior

The habitual consumer

Picture yourself sitting at your local cinema as the lights go down, a box of popcorn in hand. A short while later, and most of the box might be eaten. What drives this behavior? It would be reasonable to think of popcorn's taste and other qualities. But the results of a recent field study challenge this explanation, at least when habits are guiding behavior (Neal, Wood, Lally, & Wu, 2009). Participants in the study rated a series of movie trailers before the feature film at a campus cinema and were given a free drink and box of popcorn. Unbeknown to them, the popcorn was either fresh or 7 days old and decidedly stale (a manipulation based on Wansink and Kim, 2005). Participants who only occasionally ate popcorn liked the stale popcorn less than the fresh and ate less of it. However, participants who habitually ate popcorn at the cinema were a different story—when they were given stale popcorn, they liked it less, but they ate just as much as if they had been given fresh popcorn. Moreover, their habits were apparent only in the cinema context. When the study was replicated using a show of music videos in a campus meeting room, habitual eaters reacted much like non-habitual eaters-they ate significantly less stale than fresh popcorn.

This scenario captures an essential component of habits as they play out in everyday life. When people frequently have performed a response in particular contexts, the context can come to trigger the response directly in the sense that it does not require supporting goals and intentions (Neal, Wood, & Quinn, 2006; Wood & Neal, 2007). Thus, when sitting in a theater watching movie trailers, viewers with a habitual pattern of past consumption will eat popcorn, even when they find it decidedly unappetizing.

Research on habits is important for consumer behavior because repetition is a central feature of daily life. About 45% of people's behavior is repeated almost daily and usually in the same context (Quinn & Wood, 2005; Wood, Quinn, & Kashy, 2002). Purchase and consumption are similarly repetitious. Consumers tend to buy the same brands of products across different shopping episodes (e.g., Seetharaman, 2004), purchase the same amounts at a given retail store across repeat visits (Vogel, Evanschitzky, & Ramaseshan, 2008), and eat similar types of foods at a meal across days (e.g., Khare & Inman, 2006). Moreover, understanding of repeated consumer behavior is significant for brand and financial reasons. Increases in repeated purchase and consumption are linked with increases in market share of a brand, customer lifetime value, and share of wallet (e.g., Ehrenberg & Goodhardt, 2002; Wirtz, Mattila, & Lwin, 2007). Thus, repetition, and more specifically habits, may

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characterize a significant segment of consumer behavior that is linked to important marketing outcomes.

In this article, we explain how consumer habits are cognitively represented, how they guide behavior, and how they are formed and changed. Although some researchers treat habits and automaticity as synonymous terms, we refer to habits as a specific type of automaticity characterized by a rigid contextual cuing of behavior that does not depend on people's goals and intentions. Habits develop as people respond repeatedly in a stable context and thereby form direct associations in memory between that response and cues in the performance context (e.g., physical location, preceding actions). Once habits form, perception of the context directly activates the associated response in memory. As we explain, this direct cuing process distinguishes habits from brand loyalty and other factors that might also promote automatic repetition. In differentiating among types of automaticity (see Bargh, 1994; Moors & De Houwer, 2006), we move beyond dual-process, automatic vs. controlled distinctions to identify the characteristic effects of habits in guiding consumer behavior.

The influence of habits on behavior is amplified by everyday demands (e.g., time pressures, distractions, regulatory depletion) that limit the capacity to inhibit acting on the activated habitual response and to choose and implement an alternative response (or no response). Also relevant to understanding habit performance is that, through post hoc inferences, people may judge that responses they repeat frequently must be better than alternatives. These inferences, although not part of habit cuing, may reduce deliberative attempts to change habits. Thus, the conscious inferences people make about their habits can conspire with the automatic mechanisms that control habits to help keep people locked into habit performance.

Psychological processes underlying habit cuing

How plausible is it that the relatively simple habit cuing mechanism drives consumer behavior? We answer this question in two parts. First, we review evidence of the cognitive associations between contexts and responses that underlie habits. The second part of the answer comes from demonstrations that overt habitual responses, including purchase and consumption habits, are cued directly by features of performance contexts.

Cognitive studies of direct habit cuing

Reaction time studies tapping the cognitive associations underlying everyday behaviors indicate that habitual responses in memory are activated directly by context cues. In a study of exercise habits, participants guessed as quickly as possible whether strings of letters made words or non-words (Neal et al., 2009). Some of the word targets were "running" and "jogging." Prior to seeing the letter strings, participants were subliminally primed with the location in which they typically ran or would run if they ever did so (e.g., forest, gym). Suggesting that habitual responses are activated in memory by contexts, habitual runners were faster to detect running and jogging as target words after subliminal exposure to their typical running location. Weak habit runners and nonrunners did not show this context facilitation effect. Thus, nonconscious perception of the context automatically activated associated habitual responses in memory.

Direct context cuing also implies that people's goals are not implicated in the triggering of their habits. To test this idea, Neal et al. (2009) assessed how quickly habitual runners detected the words, running and jogging, after being subliminally primed with the goal (e.g., weight) that they had previously reported motivated them to run. Habitual runners were no faster to detect running words after the goal priming, suggesting that their habitual behaviors were not mentally linked with the goal they believed motivated the action. Thus, this cognitive association task revealed that habitual running was activated by the performance context and not by participants' own running goals.

Consumers easily bring habits to mind in part because alternative responses are reduced in accessibility as habits develop. In illustration, after people repeatedly and consistently practiced using a particular behavior to meet a goal, other behaviors that served the same goal become less accessible in memory (Danner, Aarts, & de Vries, 2007; McCulloch, Aarts, Fujita, & Bargh, 2008). This deactivation plausibly bolsters the dominance of people's habits in a given context because the habitual response is facilitated compared with alternatives. Furthermore, deactivation of alternatives does not appear to be goal dependent but to reflect a broader phenomenon in which repeatedly retrieving one item in a conceptual category reduces the accessibility of other items in that category (see retrieval induced forgetting, Anderson, 2003).

The core idea behind direct cuing—that habits are triggered by contexts without depending on goals—gains additional credence from research in cognitive neuroscience that has found reduced reliance on goal-related brain systems as responses are repeated into habits. In a typical neuroimaging study of habit formation, the neural correlates of task performance are measured as participants repeat a task until it becomes habitual according to some behavioral criterion (e.g., absence of dual-task interference effects). Repetition and the development of habits typically are associated with shifts in the complex multi-structure neural networks involved in action control. In general, activation decreases in goal- and outcome-oriented brain systems like the pre-frontal cortex and increases in brain systems linked to stimulus control like the basal ganglia (see Yin & Knowlton, 2006). Thus, the neural signatures of habit formation are consistent with the claim that habits are directly cued by contexts in a manner that does not depend on goals.

In summary, evidence from social cognitive and from neuroscience research converge on the idea that habits are direct context–response associations in memory that develop with repetition. The activation of habit responses by contexts is accompanied by deactivation of alternative responses. These processes position habits as the dominant, accessible response in a given context.

Habit cuing guides overt responses

Evidence that overt habitual responses are directly activated by associated contexts comes from behavioral experiments and

field studies. These address a diverse set of responses that can be habitual, including speaking loudly, on-line voting, purchasing fast food, and using a bicycle. Yet, the basic question behind all of these studies is whether habitual responses are directly cued by features of the performance context without input from relevant goals and behavioral intentions.

In an experiment testing whether speech habits are triggered by context cues, college students completed a computerized visual search task in which the background context depicted either kitchens or the sports stadiums at their school (Neal et al., 2009). We reasoned that students who frequently go to sporting events at the stadiums have acquired a habitual tendency to talk loudly in that context. In support, such participants responded more loudly to the task when primed with images of stadiums as opposed to kitchens. However, participants who habitually went to sports stadiums did not speak more loudly when their goals were heightened by the anticipation that they would go to a stadium at the end of the study.

Direct cuing also emerged in an experiment that manipulated rather than measured habit strength. College students developed on-line voting habits across 7 days by repeatedly responding to email prompts to use an on-line polling site (Aldrich, Montgomery, DeSante, Neal, & Wood, 2009). After the study supposedly ended, participants received email prompts to respond to an ostensibly unrelated poll on campus issues. Demonstrating that habitual responses were activated by the email cues, participants with strong voting habits continued to respond to the polls after the study ended, whereas participants from a control condition that did not form habits responded less frequently. Furthermore, habitual voting was less driven by goals for voting. That is, students with strong habits responded regardless of whether the polled issues were personally relevant to them, whereas the control participants without habits voted more often on highly relevant issues than less relevant ones. In this way, habitual voting appeared to be directly cued and less sensitive to goal outcomes such as issue relevance.

Additional evidence for direct cuing comes from studies of a classic phenomenon in the prediction of everyday behavior. As Triandis (1977) observed, people carry out their intentions, or behavioral goals, largely for novel or nonhabitual behaviors, whereas they repeat habits regardless of their intentions. In a standard test of this idea, people report their intentions to perform some behavior, such as purchasing fast food in the next week, and they report the strength of their fast food purchasing habits (i.e., frequency of past performance in a given context). At the end of the week, they report how frequently they actually purchased fast food. When performance during the week is predicted from habits and intentions, the standard finding conforms to Triandis's prediction: People with weak or no habits act on their intentions, whereas people with strong habits continue to respond at past performance levels seemingly regardless of their intentions (e.g., Danner, Aarts, & de Vries, 2008; Ferguson & Bibby, 2002; Ji & Wood, 2007; Ouellette & Wood, 1998; Verplanken, Aarts, van Knippenberg, & van Knippenberg, 1994).

In the direct cuing account, strong habit participants in behavior prediction studies do not rely on their intentions because a mental representation of the behavior is accessible to guide performance. Support for this idea comes from a study that assessed participants' mental accessibility of bicycling for getting to various local destinations and then predicted the frequency of their cycling for the next 4 weeks (Danner et al., 2008). Participants with highly accessible representations of cycling used the bicycle often, and this predictive effect emerged independently of their intentions to bicycle. Although this study did not assess habit strength, it demonstrates that people repeat behaviors when the behavior representation is highly accessible.

In these behavioral studies of habits, a variety of context cues were associated with habitual responses in memory so as to trigger their activation. These include the physical location of sports stadiums and email headers of messages providing polling websites. In general, context cues can include the responses that routinely precede habit performance, along with where, when, and with whom the habitual response typically is given. In our past research, the physical location where responses are performed provided cues that activated a broad range of everyday habits (Aldrich, Montgomery, & Wood, 2009; Ji & Wood, 2007). Additionally, seemingly diverse contexts may have features in common that promote the transfer of learning and thus generalization of responses across contexts (Barnett & Ceci, 2002; see also van Osselaer, Janiszewski, & Cunha, 2004). In this way, some habitual responses (e.g., smoking) might become associated in memory with and triggered by seemingly diverse contexts (e.g., drinking coffee at home and drinking alcohol at a bar).

In summary, cognitive and behavioral studies converge in suggesting that habitual responses are activated directly upon perception of associated context cues, and alternative responses may be deactivated in memory. These cognitive associations direct responding such that, when people perceive habit-related context cues, they often perform the habitual response with minimal guidance from goals and intentions.

Consumer repetition is not always habitual

People repeatedly consume and purchase for reasons other than habit. Consumer repetition might reflect a continued preference for a particular product or service, a belief that it meets valued goals, or the experience of positive emotions. For example, brand loyalty and brand relationships can have enduring influences on consumer behavior (e.g., MacInnis, Park, & Priester, 2009; Oliver, 1999). These motivated cognitions might be held explicitly or they might be implicit, meaning that people are not aware of the motive and/or its impact (Bargh, 2002). Although such goals, attitudes, and emotions are not required for habit performance, they are relevant to understanding how people develop and break habits (see section "Promoting formation of consumer habits").

Motivated cognitions yield flexible orientations

The direct cuing mechanism, by which particular responses are activated by features of performance contexts, distinguishes

habit dispositions from motivated cognitions. Once a habit forms, contexts activate that particular response in a relatively rigid manner. Goals and preferences, like habits, may be represented as constructs in memory (Kruglanski et al., 2002; Gollwitzer, Parks-Stamm, Jaudas, & Sheeran, 2008). However, goals and preferences do not necessarily promote the rigid repetition of any particular behavior. Making this point with respect to automatic goal pursuit, Bargh and Barndollar (1996) argued that the environmental activation of goals yields "not a static behavioral response, but an automated strategy for dealing with the environment" (p. 461, italics in original).

Even when consumers strongly hold a goal or preference, they are not oriented necessarily to repeat a particular response. Thus, loyalty to a brand of coffee might be expressed through multiple behaviors, including drinking it at work, purchasing it for use at home, and buying T-shirts and other brand extensions. In contrast, a habit involves a specific response such as drinking a cup of coffee, which could be triggered directly by preceding responses in one's morning routine and the sight of the kitchen coffee maker. This habit might be strongly cued without influencing other brand-related behaviors.

Habits' characteristic rigidity also distinguishes them from simple decision heuristics (e.g., "I buy the best known brand") and purchase mindsets that can be applied flexibly in novel contexts. For example, a specific purchase mindset (e.g., a which-to-buy orientation) used in one purchase decision might, due to its recent activation, be readily accessible to frame subsequent decisions in novel domains (Shen & Wyer, 2007; Xu & Wyer, 2008).

In summary, preferences and goals sometimes motivate repeated purchase and consumption. These motives promote variability in specific responses, as consumers flexibly react to their varying preferences and goals relevant to a particular decision. In contrast, habitual responses are directly cued in a relatively rigid way that does not depend on current goals.

Habits as the residue of past goal pursuit

Habits, as a relatively rigid mechanism that fosters repeated responding, might seem to have limited utility to help people meet their goals and respond to their preferences. However, habits reflect the wisdom of past experience. That is, people tend to form habits as they repeatedly pursue goals through particular means in stable contexts (Lally, van Jaarsveld, Potts, & Wardle, 2008). Because people tend to repeat responses that are rewarding in some way, habits tend to develop from actions that consistently yielded valued outcomes. Thus, a sports fan cued through habit to purchase Planter's peanuts at the ballpark probably repeated this behavior initially because it generated desired outcomes—buying and eating peanuts was perhaps a good accompaniment to drinking beer.

Habits also represent the knowledge accrued across multiple past occurrences. They change only slowly over repeated experiences. Much important knowledge would be at risk if the information accrued slowly over experience could easily be overwritten by new information and shifting goal states (Cunha, Janiszewski, & Laran, 2008). Thus, habits are useful in two senses. They form through repetition, and people are likely to repeat actions that are in some way rewarding, and they have a slow-to-change memory trace that ensures this learning is retained for future use (see Wood & Neal, 2007).

Our new look at habits builds on the recognition that much of human action is purposive, and thus, our approach differs from radical behaviorism that famously eschewed cognitive and motivational mediators of behavior (see Skinner, 1938). Instead, current habit research owes more to the controversy in early learning theories between models of automatic responses triggered by environmental stimuli (Hull, 1943)[1] and mentalistic ideas of goal-directed action (Tolman, 1948). The field initially resolved this controversy by shifting toward cognitive perspectives that emphasized the purposive, top-down organization of perceptions and concepts, and thus essentially voted on the side of Tolman. Yet, current understanding of cognitive and motivational guides to action suggests a broader view in which habits and other context-cued action interface with deliberative goal pursuit and the variety of forms of motivated action. Thus, the social–cognitive–behaviorist synthesis we present incorporates key elements of the behaviorists' toolbox within a framework of human action that is sometimes but not always goal directed.

Demands of daily life reduce control over habit performance

Once formed, habits are a conservative force that encourages replay of past behavior in future purchase and consumption. Of course, consumers are free to act as they please and deviate from their habits to seek variety and change (see Simonson, 1990). Yet, they frequently fail to break with the past to do something new.

When are consumers likely to fall back on their habits, and when are they likely to act in novel ways? Because the particular habitual response is quick to activate in memory and the habitual memory trace is slow to change with new experiences, cognitive and motivational effort is required to respond counter habitually. To act in nonhabitual ways, consumers must make the decision to do something new and in addition must override the accessible habitual response in memory. Thus, habits pose a two-faceted drain on working memory and other cognitive resources. Given the resource-intensive nature of deciding and overriding, consumers are likely to act habitually when they experience the everyday time pressures, distraction, and regulatory depletion that reduce cognitive resources.

[1] Although models of habit historically owe a debt to Hull (1943), in modern conceptions, habits develop not simply in response to drive reduction but reflect the broader associative and reward learning that occurs as people pursue goals in daily life (see Neal et al., 2006). Additionally, by treating habits as a kind of automaticity, current theories elaborate the cognitive representation of habits in the mental association between a context cue and a response.

Under time pressure, consumers act habitually

When under time pressure, consumers simplify decision-making in various ways, such as spending less time on each piece of information and selectively attending to the most important items (Johnson, Payne, & Bettman, 1993). In addition, under time pressure, consumers should be less able to override accessible responses in memory and thus stop themselves from acting on the habits that are triggered by associated context cues.

Demonstrating the increased reliance on habits, participants in a travel simulation were given varying amounts of time to take a new subway route that differed from the old one that they had practiced in the past (Betsch, Haberstroh, Molter, & Glöckner, 2004). When time was not limited, participants followed the new route with few errors of relapse to the old habit, but under severe time pressure, they suffered many relapse errors. Also suggesting reliance on habits, a field study found that shoppers under time pressure successfully purchased many of the items they intended if they were in a familiar store (Park, Iyer, & Smith, 1989). In familiar stores, shoppers plausibly relied on habits to purchase routine intended items. Thus, time pressure heightened reliance on unhelpful habits when consumers were trying to pursue novel subway routes and also potentially heightened reliance on helpful habits when consumers were making purchases in a familiar supermarket.

When distracted, consumers act habitually

Distraction, induced by interrupting a stream of action or imposing a demanding secondary task, also potentially reduces the ability to decide on new actions and override habits in memory. The tendency for distracted people to rely on habits is evident in a range of paradigms, including experiments on everyday routines like coffee-making (Botvinick & Bylsma, 2005) and complex learning tasks (Markman, Maddox, & Worthy, 2006). Distraction by the movie also might have contributed to habitual popcorn eating at the cinema (Neal et al., 2009).

Behavioral data and neural imaging studies suggest that distraction promotes reliance on habits by occupying working memory, which selectively impairs people's ability to generate and implement deliberative, rule-based alternatives to habit knowledge (Foerde, Knowlton, & Poldrack, 2006; Markman et al., 2006). If the distracted consumer is unable to generate novel alternatives, he or she will be locked into repeating habits. A common example is habit intrusions (e.g., driving to work on the weekend when intending to go shopping), which are a type of action slip that occurs inadvertently when people intend to perform another, less habitual response. In Reason's (1990) diary studies of everyday behavior, habit intrusions were especially common when people were distracted or otherwise preoccupied and not attending to what they were doing.

When self-control resources are limited, consumers act habitually

Performance of habits is amplified further by everyday fluctuations in self-control resources. In current theorizing, people's ability to exert control over their thoughts, emotions, and behaviors draws on a domain–general resource that functions like a muscle in that it is temporarily depleted with use and regenerates with rest (Baumeister, Muraven, & Tice, 2000). If regulatory resources are easily drained by exertions of self-control in daily life, then people often will be unable to override the accessible response in memory and decide on an alternative or decide to do nothing.

Illustrating that overriding a habit requires regulatory resources, study participants who had been depleted by a prior act of self-control were less able to inhibit their habitual self-presentation (Vohs, Baumeister, & Ciarocco, 2005). Illustrating that deliberative choice also requires resources, depleted participants deciding which of three laptops to purchase did not evaluate the range of relevant attributes but relied instead on salient contextual factors promoting a particular alternative (Pocheptsova, Amir, Dhar, & Baumeister, 2009). Thus, consumers may continue to perform habits because of the regulatory costs of not performing them.

It is perhaps no surprise that people tend to perform more bad habits when self-control is low and consumers are unable to override or decide. Thus, shoppers depleted by a long grocery store trip might give in to an unwanted habit of snacking on chips on the way home. Less obvious but consistent with the current argument, people with lowered self-control also tend to perform more good habits. Consumers with limited self-control cannot exert the regulatory effort to pursue new means of meeting their goals and thus fall back on their good habits. Evidence of this generalized habit boost with lowered self-control comes from a diary study in which college students reported on their daily performance of a range of desired behaviors (e.g., going to the gym) and undesired behaviors (e.g., drinking alcohol) that varied in habit strength (Pascoe, Neal, Toner, & Wood, 2009). For 2 days in the 4-day study, participants' self-control resources were lowered by an experimental manipulation—they were required to use their non-dominant hand to perform a variety of daily tasks (e.g., opening doors and using their cell phone). When self-control was lowered in this way, participants increased their performance of both desirable and undesirable habits. Thus, depletion yielded a wholesale boost in habit performance.

In summary, the continued performance of habits is fueled by everyday limits on the capacity for deliberation and effortful self-control. People are especially likely to act habitually under time pressure, when distracted, following depletion of self-control, and in other everyday circumstances that limit the capacity to override accessible habit memories and decide on alternative actions (or no action). In short, the direct cuing mechanism underlying habits ensures that these responses are dominant in people's minds, and this dominance is amplified when everyday demands reduce the capacity to undertake alternative actions.

It is worth noting that, with respect to goal pursuit, habits sometimes carry out consumers' current goals and other times confound them. Thus, time pressures increased reliance on

incorrect habits to perform a laboratory task (Betsch et al., 2004) as well as perhaps shoppers' helpful purchase habits in a familiar supermarket (Park et al., 1989). Similarly, in Pascoe et al.'s (2009) diary study, self-control depletion increased performance of both goal-promoting and goal-impairing habitual behaviors. This double-edged nature of habits is a downstream consequence of the automaticity underlying direct cuing. Although people initially are likely to repeat behaviors that are rewarding and meet their goals, once habits form, cuing does not require a supportive goal. Thus, habits are activated blind to the goals that people currently are pursuing.

Consumers' judgments are influenced by habit performance

Consumers often may be aware of their habits and make inferences about why they act as they do. As we explain in this section, these inferences and beliefs are likely to be influenced by repetition so that people experience their habits as preferable to alternative actions. Importantly, these inference processes occur following habit performance as people seek to understand and explain their frequently repeated actions. Consumers' inferences represent a summary of past performance and have little direct influence on future habit cuing (see Ouellette & Wood, 1998). Although these favorable judgments do not drive habitual responding, they influence consumers' decisions about their habits. For example, if people think that their habits are beneficial, they may not intervene to halt habit performance.

Consumers' inferences about the reasons for habit performance are just that, inferences. Because people have limited introspective access to the implicit cognitive associations that guide their habits (e.g., Beilock & Carr, 2001; Foerde et al., 2006), they are forced to infer the relevant internal states from external behaviors and the contexts in which the behaviors occur (Bem, 1972). As we explain in this section, these inferences are evident in consumers' beliefs that habits are driven by supporting goals, judgments that habits are preferable to more difficult-to-perform alternatives, and the limited, biased search of information that accompanies habits.

Habits and inference of goals

When consumers reason about their purchase and consumption habits, the simple frequency and consistency of the response might suggest a potent underlying disposition. Illustrating this effect, students with stronger habits for a variety of studying and exercising behaviors inferred that they held stronger goals for those behaviors (Neal et al., 2009). Additionally, in a timed response task, participants with stronger running habits were faster to report that running met personally important goals (Neal et al., 2009). It is important to keep in mind that habitual runners made these strong goal inferences despite that contexts activated running responses directly without depending on the inferred goals. In another example of how people make strong goal inferences for habits, consumers with stronger habits to purchase fast food, watch TV news, and take the bus reported greater certainty in their intentions to perform these behaviors (Ji & Wood, 2007). Yet again, intentions for habitual behaviors did not predict future frequency of performance. Thus, people infer that their habits are highly goal dependent, despite that habits are cued directly by contexts.

Consumers' dispositional inferences may accurately reflect the reasons why they initially started performing a habit. After all, people initially are likely to repeat and thereby form habits for behaviors that attain desired goals or avoid undesired ones (see section on habit formation below). Thus, consumers might accurately infer that their initial decision to choose a brand of coffee was motivated by a goal concerning taste. Nonetheless, people continue to believe that such motives drive their habits even after responses have come to be cued directly by the performance context (Neal et al., 2009).

Goal inferences might seem especially plausible for good habits (e.g., "I run everyday so I must want to be fit"), but people also might make such inferences for bad habits. According to Bem (1972), study participants make dispositional inferences (e.g., liking for a task) even for behaviors that conflict with their attitudes (e.g., claiming that a boring task was fun). Similarly, people may attribute unwanted habits to goals and dispositions (e.g., "I twirl my hair, so I must be anxious"). However, bad habits might require more extensive explanations than good habits. When bad habits clearly conflict with valued goals, consumers may infer that they are influenced by multiple opposing goals. For example, habitual snacking might be inferred as achieving a short-term goal (e.g., taste) in lieu of longer-term goals (e.g., health). Additionally, when consumers are not able to identify a plausible disposition, they might simply acknowledge that they cannot control their behavior, or they might infer that it is motivated by unconscious goals. For example, people could explain an action slips of accidentally driving to work when intending to go to the store (see Reason, 1990) as the product of uncontrollable automaticity or a nonconscious obsession with work.

In sum, both good and bad habits are characterized by a paradox. People may strongly infer internal dispositions motivating their habits, but the actual habit cuing mechanism does not require activation of a supporting goal. This feature of habits could explain why social psychologists sometimes have concluded that the automaticity driving habits is triggered only when supported by a relevant goal state (e.g., Aarts & Dijksterhuis, 2000; Sheeran et al., 2005). Research supporting this claim assessed participants' inferences about their habits and thus may have tapped goal-dependent beliefs rather than the direct cuing mechanism that actually triggers habit performance.

Habits and ease of performance

Consumers also may prefer habits and other often-repeated behaviors simply because they are easy to perform. These

preferences are part of the cognitive lock-in that consumers experience with repeated use of products or services (Johnson, Bellman, & Lohse, 2003; Murray & Häubl, 2007). In a demonstration, consumers practiced repeatedly using a particular web interface and then reported preferences for sticking with the incumbent interface or switching to a novel one that they had tried just once (Murray & Häubl, 2007). Preferences for the incumbent increased as a linear function of practice. Moreover, consumers' preferences reflected that the incumbent seemed easier to use than the alternative. Thus, habits may promote consumer preference by exploiting a psychological calculus that favors what feels easy because it is well practiced over what feels more difficult because it is new.

In a related idea, consumers might prefer often-repeated behaviors because they are high in fluency, or speed and ease of processing. High fluency is experienced as positive in part because it signals familiarity over uncertainty and success at processing and understanding, and this positive affect generalizes to current activities (Reber, Schwarz, & Winkielman, 2004). Although research on fluency effects has largely focused on the fluency that arises from perception of a stimulus (e.g., Novemsky, Dhar, Schwarz, & Simonson, 2007), preferences due to fluency plausibly emerge also for repeated consumer behaviors.

In summary, positive evaluations of habits may emerge from the ease with which they are performed and from the positive affect generated by processing fluency. Although habits might often be the preferred response, these preferences emerge downstream of performance. As we explained at the beginning of this article, the direct cuing of habits by contexts does not depend on such preferences (e.g., liking for popcorn).

Habits and information search

Consumers also might infer that habits are the most appropriate response in many circumstances. Habit performance appears to reduce people's search for relevant information about behavioral choices, especially with respect to alternative behaviors. In illustration, European car owners selected information about hypothetical travel situations (e.g., distance and luggage weight) in order to make decisions about whether to walk, bike, take a bus, or drive a car (Verplanken, Aarts, & van Knippenberg, 1997). Those with strong car driving habits selected less information before making a decision, which most often was to drive. This effect was not limited to car use habits. Participants with stronger habits to ride a bike also searched for less information before making a choice, which most often was to bicycle (Aarts, Verplanken, & van Knippenberg, 1997; Verplanken et al., 1997). By engaging in this narrow search process, people with habits may not recognize information relevant to an alternative behavior.

Consumers' information search not only is limited by habit, it also is targeted toward information that supports past behavior. This confirmatory bias was demonstrated in a simulation of a machine rental company. Participants acquired rental equipment a few times or many times (Betsch, Haberstroh, Glöckner, Haar, & Fiedler, 2001). After many repetitions, participants were found to search for information supporting past equipment acquisitions. Yet, this confirmatory bias disappeared if participants believed that the search task was novel. The flexibility of confirmatory search is consistent with the idea that it is not a direct component of habit cuing but instead occurs as a product of habit performance. Unlike habit cuing, confirmatory search is abandoned if past repetition does not seem relevant to a new decision context.

In summary, once a habit has formed, future information processing heightens the value of habitual behavior over alternatives. Consumers with habits are likely to make strong goal inferences, prefer habits to less well-practiced behaviors, and engage in limited, confirmatory information searches about the behavior. We speculate that these judgment processes have a number of effects, including that, when consumers subsequently make decisions about their habitual behavior, they may favor continuity over change. However, consumers' beliefs and preferences represent downstream inferences, and as such they have little direct role in habit cuing (see Ouellette & Wood, 1998). Thus, favorable beliefs do not directly perpetuate habits. However, they may work indirectly to reconcile people to their habits and thereby limit their attempts to alter their habitual behavior.

Promoting formation of consumer habits

Habit formation occurs gradually over repeated experiences. When consumers initially repeat a response, they often have some goal or outcome in mind. For example, consumers might be motivated by popcorn's buttery, salty taste to start buying a box when at the movies. Thus, this first stage in habit formation typically involves repeating actions that yield desired outcomes (for a discussion of incidental habit formation, see Wood & Neal, 2007). As consumers recognize these rewarding outcomes, they may form intentions to repeat the behavior in the future.

With continued repetition, habits develop, and the performance context becomes a shorthand cue that directly activates past responses. For example, cues in the movie theater come to activate directly the memory representation of eating popcorn (Neal et al., 2009). Thus, as habits form, behavior shifts from being outcome oriented to being directly cued by context–response associations. As explained in this section, this transition occurs when consumers repeat performance in stable contexts in ways that minimize focus on the outcomes of the behavior.

Given the nature of habit formation, consumers are more likely to develop habits for some products and services than for others. Meta-analytic reviews of research across multiple behavioral domains yielded evidence of habit formation for activities that people perform often in stable contexts, such as exercising and drinking milk, but not for activities they perform less often or in varying conditions, such as mammograms and class enrollment (Ouellette & Wood, 1998; Webb & Sheeran, 2006). Applied to consumer behavior, habits might develop most readily in product categories in which consumers purchase the same brand repeatedly across

shopping trips (e.g., sandwich bags; Kahn, Kalwani, & Morrison, 1986; Zhang, Krishna, & Dhar, 2000). Habits might form less readily in product categories in which consumers, in response to inherent product attributes or price promotions, tend to switch among brands (e.g., ready-to-eat cereal). Nonetheless, given repeated performance in stable contexts, individual consumers might form habits even for activities that are not habitual for many other people (e.g., voting in political elections).

Rewards and habit formation

When purchase and consumption are rewarding, people are more likely to repeat them in the future. During the initial stages of habit formation, greater rewards yield more repetition (see Martin, 2008). However, the formation of habits that are activated by context cues depends on how consumers experience the reward.

Habits are likely to develop when consumers have a low level of experienced instrumental contingency between a behavior and its rewarding outcomes. Experienced contingency reflects the understanding that changes in response yield changes in reward (Dickinson, 1989). Thus, when experienced contingency is low, rewards incentivize performance but are not highly salient. Such rewards help to stamp habit associations into memory. At the neurocognitive level, this process unfolds as rewards activate neuronal teaching signals that help to establish in memory the context–response associations leading to valued outcomes (Schultz, 2006; Wise, 2004). In this way, rewarding outcomes can facilitate context–response learning without being represented in the products of that learning (Yin & Knowlton, 2006).

Experienced contingency helps to explain when consumer reward programs promote habit formation. Consumers are likely to experience their behavior as low in contingency when they receive rewards on random or schedule intervals that are not tied to the onset or rate of responding. Random and interval rewards establish diffuse incentives that promote repeated responding without making salient specific valued outcomes. One example is the prize given under the caps of some brands of soda. Because consumers win a prize only on a small percentage of purchases, they are unlikely to experience much contingency between the purchase and the prize.

When habits are strong, experienced contingency is necessarily low. Given high levels of response and high levels of rewarding outcomes, little variation occurs in either, and so consumers do not experience contingency (Dickinson, 1989). In illustration, for a behavior that is performed frequently with a standard outcome (e.g., using a shampoo, good smelling hair), the behavior and outcome will not be experienced to vary, and the contingency between responses and rewards will not be salient. Of course, people can always think about their shampoo and its smell, but the contingency will not be obvious without deliberation. If it is true that habits are not experienced as contingent on outcomes, then habitual consumers will be little affected by an increase in rewards for their behavior. In support of this idea, consumer reward programs increased purchasing among consumers with initially low rates of purchase but had little impact on habitual consumers with higher rates of purchase (e.g., Lal & Bell, 2003). Further illustrating this phenomenon, the incentive of earning a free turkey increased sales more among grocery shoppers with lower purchase rates (Taylor & Neslin, 2005), and a retail store loyalty program increased sales more among buyers with lower purchase rates (Liu, 2007).

Habit formation might be impeded, in contrast, by reward programs and other interventions that convey high experienced contingency. Rewards focus attention on outcomes primarily when they are received immediately after a response and in proportion to the rate of responding (e.g., Dickinson, Nicholas, & Adams, 1983). One example might be retailers' punch card reward programs in which consumers receive a free meal or drink after they have purchased a certain number of items. Suggesting that these programs heighten experienced contingency, participating consumers continued to be focused on the reward and accelerated their purchases when closer to receiving it; they also continued this pattern across multiple punch cards (Kivetz, Urminsky, & Zheng, 2006). Thus, when performance is incentivized through immediate, proportional rewards, the outcomes of the behavior remain salient, and habits are unlikely to form.

Experienced contingency also is likely to be high, thereby hindering habit formation, when different rewards are given for competing actions (Colwill & Rescorla, 1985; see Daw, Niv, & Dayan, 2005). In a possible illustration of this effect, consumers who cherry pick, or visit multiple stores to take advantage of the sales prices at each, may remain sensitive to discount pricing and fail to develop habits to patronize particular stores. In support, consumers who cherry picked sales also tended to be low in habit strength as reflected in past store patronage (Bell, Ho, & Tang, 1998; Fox & Semple, 2002).

In summary, consumers form habits as they repeatedly respond in stable contexts. Early in habit learning, rewards promote repetition. Rewards also facilitate the transition from outcome-oriented to context-cued responding when they are presented in ways that minimize the experience of the contingency between the behavior and the rewarding outcome.

Behavioral intentions promote habit formation

Consumers also repeatedly purchase or consume products and services because they intend to do so. As with rewards, intentions do not directly produce habit associations in memory but rather facilitate their formation by fueling the initial repetition of behavior in stable contexts. Thus, habits might form as a downstream consequence of consistently acting on intentions in particular contexts.

The repeated pursuit of intentions in particular contexts can translate into habit-like behavior. For example, in a field study, signs to recycle at trash cans and other critical choice points cued participants to carry out their intentions to separate recyclable items (Tobias, 2009). Although the signs

waned in impact over time, the initial increase in repeated recycling apparently enabled the formation of habits. Also suggesting the effectiveness of reminders in strategic locations, closely placing recycling boxes in an office environment helped workers form recycling habits that maintained for several months (Holland, Aarts, & Langendam, 2006).

Implementation intentions, or if–then plans to perform specific actions in specific contexts, also might be relevant to habit formation (Gollwitzer & Sheeran, 2006, this issue). In evidence that implementation intentions promote habit-like responding, participants in a field experiment formed implementation intentions for when and where they would take a vitamin pill each day for several weeks (Sheeran & Orbell, 1999). Those who formed such an intention actually took more pills and, based on their self reports, took the pills in specific contexts. Supporting a similar conclusion, Orbell and Verplanken (cited in Verplanken & Wood, 2006) had participants form an implementation intention to floss their teeth and then later measured the habit strength associated with their flossing using the Self-Report Habit Index (Verplanken & Orbell, 2003). Participants who had formed implementation intentions reported significantly more habitual flossing 4 weeks later, at least if they began the intervention with moderate or strong intentions to floss.

Despite their ability to promote repetition in stable contexts, little is known about the exact role of implementation intentions in habit formation. Unlike habits, implementation intentions produce automatic responding that depends on goals. For example, college students acted on implementation intentions to study at particular places and times only if they valued the broader goal of studying (Sheeran, Webb, & Gollwitzer, 2005). It may be that implementation intentions, by remaining tied to a goal state, help with the first stage in habit formation of repeating behavior in stable contexts but do not facilitate the transition to context cuing.

Implementation intentions may even hinder habit development to the extent that consumers' focus on if–then rules impedes the formation of habitual, procedural knowledge. Imaging data and behavioral studies suggest that rule-based learning systems and procedural learning interact competitively to some degree, such that enhancing one form of learning impedes the other (Poldrack et al., 2001; see also Maddox & Ashby, 2004). Thus, by acting on implementation intentions, consumers may fail to form habits because behavior outcomes are salient and performance is cognitively represented as rule-based knowledge.

In summary, habits form as consumers repeat behavior, typically because it has valued outcomes. In recognition of these outcomes, consumers might form intentions to repeat the behavior in the future. Habit formation also involves a transition from responding to outcomes to responding to cuing by contexts. Rewards support this transition when the contingency between the response and outcome is not salient. Implementation intentions could facilitate habit formation by encouraging repeated behavior in stable contexts, but they could also limit habit learning by maintaining consumers' focus on action rules and outcomes.

Habit change

Once habits form, the memory trace is slow to change, requiring repeated experiences across multiple occasions to alter old habit memories and develop new ones. With this slow time course, habit memories are insulated against the influence of short-term variations in behavior and current goals that occur as people flexibly pursue goals in daily life. Thus, habit performance can be reinstated relatively unchanged after people act in counter-habitual ways (e.g., deviating from a habitual brand purchase to try a new product).

Given the nature of habit memory, standard interventions that change people's beliefs, self-efficacy judgments, and intentions may not change behavior performance. In illustration, a meta-analysis of interventions that successfully changed people's intentions revealed corresponding changes in behavior only for non-habits (Webb & Sheeran, 2006). Specifically, for behaviors that were not performed with sufficient frequency to develop habits, change in intentions (e.g., desire to get a flu shot) promoted corresponding change in behavior (e.g., actually getting a flu shot). However, for behaviors that are performed often in stable contexts, change in intentions (e.g., desire to eat healthfully) had only limited effect on behavior (e.g., actual diet). These findings make sense given that changed intentions do not change habit memories. Thus, habitual behaviors persisted even after intentions changed.

Although people cannot easily forget habit memories or overwrite them with new goals and intentions, the influence of habits on behavior can be broken. Efforts to break habits involve blocking the mechanisms that trigger performance, including inhibiting the cued response and thinking of alternative responses. Habits also break when changes in the performance context remove the cues that trigger habitual responding (see Verplanken & Wood, 2006).

Changing habits by exerting self-control

To understand how people go about breaking unwanted habits in daily life, we conducted event sampling diary studies of people's attempts at inhibition (Quinn, Pascoe, Wood, & Neal, 2009). Participants reported every time they tried not to perform a thought, feeling, or behavior and then reported the success of the self-control effort. The most successful strategy for inhibiting unwanted habits was vigilant monitoring, or heightened attention to and inhibitory focus on the unwanted response (e.g., thinking, "don't do it," being vigilant for slip-ups). The effectiveness of this strategy at inhibiting habits was verified in a follow-up experiment in which participants developed habits on a laboratory task and were assigned to use vigilant monitoring to control habitual errors during a performance test (Quinn et al., 2009). Although participants using vigilant monitoring successfully controlled unwanted habits, this strategy did not work for other types of automatically cued behaviors. In the diary studies, monitoring did not control unwanted responses to temptations (i.e., unwanted responses with immediate positive

gratification) perhaps because it increased focus on the hot qualities of the tempting stimulus and made resistance additionally difficult (see Metcalfe & Mischel, 1999; Verplanken, Herabadi, Perry, & Silvera, 2005). Instead, responses to temptations were best controlled through removing the tempting stimulus.

Vigilant monitoring, although effective at short-term control of unwanted habits, may not be ideal for longer-term behavior change. Because it involves active inhibition, consumers may find it difficult to sustain over time given fluctuations in self-control resources (Muraven & Baumeister, 2000). Inhibitory control also is subject to ironic effects that can activate the unwanted behavior in memory and thereby derail change efforts (Wenzlaff & Wegner, 2000). Nonetheless, by temporarily controlling unwanted habits, vigilant monitoring can establish a window of opportunity for people to break out of their habitual behavior.

Implementation intentions to change habits

How effective are implementation intentions at changing habits? Although they are successful at behavior change in general (Gollwitzer & Sheeran, 2006), little is known about how well they control strong habits. Given that overriding habits and choosing to implement another response requires active exertion of self-control (Pascoe et al., 2009), implementation intentions alone may not be sufficient for habit change. In support of this idea, implementation intentions did not shield participants against incorrect habitual responses in an experimental task (Betsch et al., 2004). That is, participants who formed implementation intentions to give new, correct responses instead of their incorrect habits were still incorrect 25% of the time, which increased to 72% under time pressure. Nonetheless, because all participants in the study formed implementation intentions, we cannot estimate their success at behavior change.

More direct evidence that habits may not readily change through implementation intentions comes from two studies in which participants with strong or weak habits formed implementation intentions to change their behavior (Webb, Sheeran, & Luszczynska, 2009). Implementation intentions to alter performance at an experimental task (study 1) and to quit smoking (study 1) had less impact when the unwanted behavior was strongly habitual. In fact, when participants had relatively strong smoking habits, implementation intentions had no effect.

We suspect that if–then plans are most successful at habit change when people have self-control resources to inhibit carrying out the response activated in memory and to implement an alternative (or no response). Thus, we suspect that if–then plans are effective at reminding people what they want to do in a context, but additional regulatory resources are required to override strong habits activated by that context and to implement an alternative. For this reason, implementation intentions may be effective with strong habits only when self-control capacity is high. Yet, this hypothesis is tentative and requires research verification.

Changing habits by changing cues

Habits also can be broken by changing cues in the performance context. Context change is a powerful ally in changing habits because it frees people to establish new patterns of behavior in the absence of competing habit cues (Verplanken & Wood, 2006). People naturally experience changes in everyday performance contexts when, for example, they move to new locations, start new jobs, and join new groups of friends. According to the habit discontinuity hypothesis, when contexts change in this way, people no longer rely on habit cues to action, and they more deliberatively consider what to do (Verplanken, Walker, Davis, & Jurasek, 2008).

In a test of habit discontinuity, college students transferring to a new university reported before and after the transfer on the habit strength of behaviors such as exercising and watching TV, along with their intentions to perform each behavior (Wood, Tam, & Guerrero Witt, 2005). When the performance context for each behavior at the new university was similar to the old one (e.g., a gym in the apartment building), habitual behaviors persisted at the new university irrespective of what students intended to do. When contexts changed, however, students' behaviors came under intentional control, and they exercised and watched TV only to the extent that they intended to perform these actions. Also supporting habit discontinuity, a study of the driving habits of British employees found that those who had recently moved residence but not those who stayed put were guided by their environmental values to drive their cars less often (Verplanken et al., 2008).

New resident marketing programs could build on the insight that context changes break old habits. Welcome wagons and other such programs contact new residents and give them information about local products, services, and vendors. Although these programs typically focus on the purchases of new homeowners, their value theoretically is much broader. They could be used to induce trials of a wide range of products and services during a period in which old purchase and consumption habits may be disrupted.

In summary, the memory trace of habits is difficult to unlearn, but its influence on behavior can be broken. People break habits by vigilantly monitoring their behavior to ensure that they do not slip up by performing unwanted habits. Implementation intentions are helpful at changing weak habits but, in the few studies that assessed strong habits, did not significantly facilitate change. We speculated that changing habits requires not just remembering what one wanted to do but also effortful self-control to inhibit the response activated in memory and implement another (or no response). Breaking habits becomes easier when contexts shift so that the old performance cues no longer activate the unwanted habitual response.

Conclusion

Returning to the question with which we began this article, is it plausible that the simple direct cuing mechanism underlying habits accounts for repeated consumer behavior? We believe

that the answer is yes. Notwithstanding that repetition can reflect many other things—deliberative decision making, explicit and implicit goals, and brand loyalty—when repetition occurs in stable contexts, consumers often form context–response links in memory that directly trigger future habitual responding. This direct cuing process reflects a slow-to-learn memory trace that captures commonalities across past experience. Though slow to learn, habits are quick to activate and are further augmented by the reduced activation of alternative responses. Accordingly, once triggered, habits are performed largely because they represent the path of least resistance in people's ongoing stream of action.

People do not, of course, enact every behavior that comes to mind (Janiszewski & van Osselaer, 2005; Macrae & Johnston, 1998). A narrow stimulus-response, reflexive model of habit performance is too simplistic to capture much of consumer behavior. Instead, direct cuing by contexts often, but not always, translates into overt behavior. People may choose to perform novel actions or to inhibit their habits. However, choice and active inhibition are the exception rather than the norm, given that they require self-control resources and that daily life is characterized by demands (e.g., time pressures, cognitive load, and regulatory depletion) that magnify the impact of habits. For example, when rushing through the grocery store in the evening, the sight of a refrigerator might activate purchase of a routine staple like milk. Consumers sometimes search internal memory for whether they have a full carton at home, but they do not always undertake such cognitively expensive search processes (Park et al., 1989), and instead purchase habitually.

Habit performance also affects people's judgments of the behavior, as people observe and make inferences about why they are repeating a behavior. These judgments provide people with post hoc justifications for their habits. Often, habits feel as though they are motivated by personal goals. Their perceived value is additionally bolstered because they are easy to perform. Also, people undertake a limited, confirmatory information search that retains focus on the habitual response. Although these inference processes follow behavior and do not have a causal role in guiding future performance (Ouellette & Wood, 1998), they influence people's perceptions of their habits. For example, they might convince people that their habits are beneficial, thus reducing the likelihood that they exert deliberative efforts to do something new.

The revival of the habit construct is fueled in part by evidence of intractability in human behavior. For example, despite people's best intentions, studies of health behavior change are marked by failed attempts to lose weight, stop smoking, eat more healthfully, exercise more, and sleep on a regular schedule (Orleans, 2000). Although people sometimes are successful, the modal outcome of behavior change interventions is initial change at first and then relapse back to old behavior patterns and associated health risks (Polivy & Herman, 2002). Relapse is understandable given the conservative pull toward old behavior patterns that emerges once habits form and performance environments become linked to the behaviors consistently performed in them. This conservative pull of the past can work to marketers' advantage, as it often may be more valuable to revive former customers with established but long-unused consumption habits than to win new customers (Gopinath, Blattberg, & Malthouse, 2009). In recognition that habit is an important contributor to repeated responding, following the initial theoretical statements by Ouellette and Wood (1998) and Verplanken and Aarts (1999), the number of articles addressing habit in social psychology journals sharply increased.

Understanding of the mechanisms driving consumer habits provides a more effective avenue for behavior change efforts and also paves the way for a number of next-generation questions. For example, little is known about individual differences in habit processes. If some people more readily form procedural habits than others (DeCaro, Thomas, & Beilock, 2008), then the tendency to form consumer habits might be studied as a function of memory and personality factors. In support, individuals who make uncommon choices in free association tasks (e.g., generating "boots" rather than "dog" when presented with the word "cat") may be less likely to purchase habitually (Drolet, Suppes, & Bodapati, 2009). The tendency might also vary within individuals over the life course and with different life roles. Older consumers, for instance, may be more prone to develop and rely on habitual consumption patterns, given their tendency toward reduced inhibitory capacity and heightened vulnerability to time pressure and confirmatory search processes (see Yoon, Cole, & Lee, 2009). Life roles also might influence habitual consumption patterns, given that being employed increases the amount of repetition in daily behaviors and living with others decreases repetition (Quinn & Wood, 2005). Finally, because daily life often requires consumers to switch back and forth between the novel and habitual, individual differences may influence how people switch between these various forms of behavioral control.

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Appendix. How to measure habit strength?

Habit strength traditionally is assessed through self-reported frequency of past performance (Ouellette & Wood, 1998). Frequency measures include subjective estimates (i.e., scale anchors of never or rarely to almost always) as well as recall of specific numbers of times (e.g., how often performed in a week). Subjective estimates may be more accurate at assessing what people actually do than recall of specific numbers (Holland et al., 2006). However, both strategies for estimating past behavior can identify strong habits (Ji & Wood, 2007). Also relevant to assess habits is Verplanken and Orbell). Also relevant to assess habits is Verplanken and Orbell's (2003) *Self-Report Index of Habit Strength*, which assesses the experience of automaticity that develops as behavior is repeated.

Measures that tap just past performance frequency reliably indicate habit strength primarily for behaviors that necessarily are repeated in a stable context (e.g., wearing seatbelts in cars). Given that habits form through repeated association of responses and context cues, and that some behaviors are repeated in varying contexts, more efficient assessment is possible when estimates of habit strength are based also on self-reports of the stability of past performance contexts (Danner et al., 2008; Ji & Wood, 2007). Thus, evidence of habit performance emerged for drinking milk, snacking, and riding a bike only when habits were assessed through frequency of past performance and stability of context cues (Danner et al., 2008). Although habits can be triggered by a variety of aspects of context, the physical location in which responses are performed triggers a range of consumer behaviors (Ji & Wood, 2007). Other important cues are the presence of others (Wood et al., 2005) and preceding responses in a sequence (Ouellette & Wood, 1998). Stability of context is reported on subjective frequency scales (i.e., anchors of never or rarely to almost always). The logic of strong habits as the conjunction of high frequency and high context stability implies multiplying the two scales to produce a somewhat continuous measure of habit strength (e.g., Aldrich et al., 2009; Danner et al., 2008).

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