In Defense of Consciousness: The Role of Conscious and Unconscious Inputs in Consumer Choice

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Although the argument that unconscious inputs are often key determinants of consumer decision making is compelling, it may be overstated, particularly with respect to choice. A comparison of the effect of conscious inputs (e.g., the attributes of options in the choice set) and unconscious inputs (e.g., a seemingly irrelevant observation or task) indicates that the former have a significant advantage. In particular, the impact of conscious inputs is supported by choice task norms and is less susceptible to being lost in the “noise” that is characteristic of most natural consumer environments (e.g., stores). Indeed, although consumers often have limited insight into influences and processes producing their choices, the assumption that consumers base their choices on conscious, willful evaluation of task-relevant inputs has been quite successful in explaining a wide range of phenomena. It is expected that future research will put greater emphasis on the interactions between conscious and unconscious influences on decision making.

Building on a great deal of recent research, Dijksterhuis, Smith, van Baaren, and Wigboldus (2005) observed that “many choices are made unconsciously and are strongly affected by the environment” (p. 193). This conclusion is based on evidence concerning the link between perception and behavior, particularly the role of mimicry and activation of stereotypes, and on evidence regarding automatic goal pursuit. The notion that unconscious factors often have a significant effect on consumer choice and that such influences have been underresearched until recently is compelling. Furthermore, many of the studies that support the role of unconscious influences on judgment and behavior are noteworthy in their elegance and ingenuity, often demonstrating rather surprising effects. Thus, the article by Dijksterhuis and his colleagues (2005; see also Bargh, 2002) is likely to make an important contribution by raising consumer researchers’ awareness of the importance of focusing more attention on the ways in which unconscious, automatic processes might influence consumer decision making.

The conclusion that many psychological phenomena are largely determined by automatic, unconscious processes and inputs has received a great deal of attention in the past 15 years or so, though researchers have emphasized different aspects of such automatic, unconscious, intuitive effects (e.g., Bargh, 1997; Chaiken & Trope, 1999; Epstein, 1994; Frederick, 2002; Kahneman, 2003; Sloman, 1996; Slovic, Finucane, Peters, & MacGregor, 2002). Integrating prior work, Kahneman (2003; see also Kahneman & Frederick, 2002) distinguished between the operations of System 1 that tend to be automatic, effortless, associative, implicit, and often emotionally charged, and operations of System 2 that are slower, consciously and deliberately monitored, and potentially rule governed. One of the conclusions that is implicitly or explicitly drawn from these related streams of research, including the work reviewed in the Dijksterhuis et al. (2005) article, is that conscious processes and consciously considered inputs play a relatively minor role in many, perhaps most, judgments, choices, and behaviors. For example, Bargh (1997) asserted that “everything that one encounters is preconsciously screened and classified as either good or bad, within a fraction of a second after encountering it” (p. 23). Loewenstein (2001) recently argued that “consciousness seems mainly to make sense of behavior after it is executed” (p. 503). Dijksterhuis (2004) argued that unconscious thought tends to improve the quality of decisions. Such notions go well beyond the well-established observation that decision makers often have limited insight into the determinants of their own judgments and decisions (e.g., Nisbett & Wilson, 1977). Furthermore, in making the distinction between conscious and unconscious influences, researchers have tended to paint the traditional emphasis on conscious inputs to decision making with a broad brush. Thus, critics of conscious decision research often point to studies that assumed that decisions are based
on (cognitive) evaluation of the various options’ attributes or on a detailed listing of the options’ pros and cons, as if conscious processing of perceived task-relevant inputs implies a comprehensive evaluation of all aspects.

More important, the proposition that automatic, unconscious influences are the primary drivers of decision making does not recognize significant distinctions within the very broad category of judgment, decision making, and behavior. As discussed in the following, the notion that automatic (System 1) influences are the default, with relatively infrequent override by conscious (System 2) processes (e.g., Bargh, 1997; Kahneman, 2003), may fit many psychological phenomena but does not adequately describe choice, where System 2 is usually the primary influence. In particular, (a) consciously considered inputs tend to play a major role in choice (including consumer choice), and (b) although understanding automatic, unconscious influences on choice is certainly important, the many potential unconscious influences in typical consumer-choice environments (e.g., in stores) create high “noise” level and potential interactions that tend to diminish the measurable significance of unconscious relative to conscious choice inputs.

ADVANTAGES OF CONSCIOUS INFLUENCES ON CONSUMER CHOICE

Dijksterhuis et al. (2005) motivated their discussion with an example of a shopper who finds himself at the supermarket counter with 26 items in the cart but cannot remember how most of them got there. Their explanation for the purchase of peanut butter, for example, is that “You hardly ever buy peanut butter, but a small boy running through the aisles reminded you of your 5-year-old nephew who loves peanut butter.” Thus, seeing a small boy running through the aisles made the need for peanut butter salient, leading the consumer to put a jar of peanut butter in the cart. This example does not appear to depend primarily on unconscious influences and can be readily explained as a conscious process. It is now well accepted that consumers, and decision makers more generally, often construct their preferences when they need to decide, which makes them susceptible to a wide range of influences (for a review, see, e.g., Bettman, Luce, & Payne, 1998). Thus, contrary to the classical economic view of people’s utility functions, it is no longer assumed that tastes are generally stable and well defined, and there is little doubt that the relative salience of decision criteria depends, among others, on the consumer’s state of mind (see, e.g., Bettman & Sujan, 1987; Wright & Kriewall, 1980).

Returning to the peanut butter example, after seeing the boy, the mindless consumer evidently visited the supermarket section where peanut butter options were displayed. In all likelihood, given the lack of a compelling need for peanut butter, the decision to purchase peanut butter and the act of placing it in the shopping cart involved at least some conscious processing of the observed stimuli. For example, if the nephew’s favorite brand were not available, or if the store’s price on that brand seemed unusually high, it would be quite possible that, the running boy’s presence notwithstanding, peanut butter would not have been purchased. And even if the decision to purchase peanut butter was instantly made on observation of the child running in the aisles, it appears highly unlikely that the consumer would randomly select a peanut butter. Instead, the consumer would be likely to pay attention to one or more product attributes, such as his nephew’s favorite brand, price, and fat content (given the sensitivity of the nephew’s parents to that aspect). Overall, although the shopper would not recognize what triggered the peanut butter idea, the choice would involve a set of mostly conscious processes.

More generally, typical consumer-choice environments consist of the purchase options as well as many other stimuli. The former have a great advantage with respect to attention and impact on purchase decisions—they are the “main effects” that are usually perceived as relevant to the decisions to be made. Conversely, other inputs in the consumer environment (e.g., in stores) are usually not considered relevant, and their impact is more of an accident. Accidents and other low probability events do happen. For example, an observation of a hot dog or something that is yellow may very well make a consumer more receptive to purchasing an extra container of mustard. However, such effects, although clearly important to study and understand, are likely to have a smaller impact on typical consumers’ choices than the consciously considered characteristics of the choice candidates and consumers’ beliefs about their preferences.

The accessibility–diagnosticity framework of Feldman and Lynch (1988) addressed factors determining the likelihood that any cognition about an object will be used as an input to decisions concerning that or a related object. This framework can be used to assess the impact of conscious and unconscious inputs to consumer choice. According to this framework, the likelihood that any cognition will be used as an input is a function of (a) the accessibility of the input in memory, (b) the accessibility of alternative inputs, and (c) the diagnosticities of the input and of alternative inputs. The role and meaning of accessibility have been discussed extensively, although different definitions of accessibility have been applied (e.g., Higgins, 1996; Kahneman, 2003; Tulving & Pearlstone, 1966). For example, Kahneman (2003, p. 699) conceptualized accessibility broadly as determined by stimulus salience, selective attention, specific training, associative activation, and priming. According to Feldman and Lynch (1988), an input is diagnostic to the extent that consumers believe that the decision implied by that input alone would accomplish their decision goals (e.g., maximizing utility, choosing a justifiable option).

A comparison between conscious inputs to choice, particularly the characteristics of observed options, and uncon-
conscious inputs in the consumer environment indicates that the former tend to have an overwhelming advantage on both the accessibility and diagnosticity dimensions. When making choices, it is customary to consider the options and their characteristics and make decisions accordingly. From a young age, children learn the ABCs of making choices and even become adaptive decision makers (e.g., Gregan-Paxton & Roedder John, 1995, 1997; Klayman, 1985). Although the level of choice involvement is often low and consumers’ self-insight is rather limited (e.g., Wilson & Schooler, 1991), people generally believe that they should consider the options’ characteristics when making decisions. This belief, in turn, implies that the characteristics of options tend to be more accessible and receive more attention than other, less directly relevant inputs. Moreover, the observed characteristics of options are generally perceived as diagnostic because people believe that they are the carriers of value and the proper bases for choice.

By contrast, the main “impact advantage” of unconscious inputs is that they are unconscious, making it unlikely that consumers would resist their influence. However, this factor seems much less significant when compared with the overwhelming disadvantage of unconscious inputs in terms of accessibility and perceived diagnosticity. Of course, consumers do not seek unconscious inputs that might influence their decisions, and they do not consider such inputs to be diagnostic or relevant. Indeed, had they been aware of the potential unconscious effects on their behavior, consumers would have likely tried and succeeded in eliminating them (although the degree of resistance to unconscious effects and the ability to control them might vary).

Another significant impact disadvantage of unconscious inputs is their high susceptibility to being lost in the “noise” that is characteristic of typical consumer (and many other) choice environments (e.g., stores, on the Internet). Because, unlike options’ characteristics, potentially influential unconscious inputs are not sought by consumers, their status in the information processing hierarchy is not different from numerous other task-irrelevant inputs. For example, in addition to seeing the running boy, the shopper described by Dijksterhuis et al. (2005) might have also been exposed to an obese child, which could have negatively affected the likelihood of buying peanut butter. Dijksterhuis et al. reviewed work demonstrating the impact of (unconscious) mimicry on behavior (e.g., van Baaren, Holland, Steenaert, & van Knippenberg, 2003). But in a typical store environment, there are many people one might mimic. Can we predict or analyze with any accuracy such effects on consumer choice?

Although a great deal of progress has been made in recent years in our understanding of unconscious influences on judgment and decision making, there is little doubt that many other such effects are yet to be uncovered in this relatively new research area. As Bargh (1997) suggested, “It is hard to escape the forecast that as knowledge progresses regarding psychological phenomena, there will be less of a role played by the free will or conscious choice in accounting for them” (p. 1). We might discover, for example, that certain colors and shapes trigger particular responses and goals, and we may learn about various interactions among unconscious stimuli. In the analysis of consumer choice, such new insights would likely enhance the noise level, making it even more difficult to form predictions about the effects of unconscious inputs in natural consumer-choice environments. However, in an uncontrolled environment with many potentially significant sources of unconscious influence, predicting the overall effect of such inputs will be quite challenging.

The susceptibility of unconscious influences to being lost in the “noise” also has implications for the manner in which studies of consumer choice are conducted. In particular, whereas one can justify studying in isolation the impact of conscious inputs such as the characteristics of options and sets, isolating unconscious influences, although often intriguing and surprising, may not represent many real-world effects. Consider, for example, the research stream on context effects in choice (e.g., Huber, Payne, & Puto, 1982; Simonson & Tversky, 1992). Although these studies examined consumer response to very specific choice set configurations, the focal inputs represented the types of options that consumers actually focus on and evaluate in the process of choice (and, as shown by Kivetz, Netzer, & Srinivasan, 2004, these effects extend to more complex choice set configurations). That is, options represent the carriers of value that consumers usually intend to consider when making choices and, as a result, they often do consider such choice sets in the process of making decisions.

Conversely, unconscious influences are much less likely to operate in the clean form in which they are typically studied. That is, because such effects in real life are usually unintended coincidents, they are not protected by task goals and perceived relevance to the choice task. Any interference by other factors can eliminate or change the direction of such effects. For example, in the classic study by Bargh, Chen, and Burrows (1996), the presence of one participant who happened to be in a hurry at the conclusion of the study might have eliminated the effect of prior exposure to words related to the elderly on other participants’ walking speed. Because most consumer-choice environments involve multiple potential unconscious influences, the likelihood that any one effect will operate in the isolated form in which it is demonstrated in the laboratory is relatively low. Furthermore, although measuring a choice (or other) dependent variable in close proximity to the manipulation is not unique to research on unconscious influences, it appears reasonable to assume that priming effects tend to deteriorate more rapidly than, for example, the effect of the considered options’ attributes. As an aside, it is noteworthy that the conclusion that “everything that one encounters is preconsciously screened and classified as either good or bad, within a fraction of a second after en-
countering it"\(^1\) (Bargh, 1997, p. 23; see also Duckworth, Bargh, Garcia, & Chaiken, 2001) may have limited consequences in many consumer-choice situations. In particular, preconscious classifications, affective reactions (e.g., Slovic et al., 2002), and confirmation bias notwithstanding, consumers often consciously consider attributes such as ingredients, features, and specifications, and these factors affect the ultimate choices they make.

**CONSCIOUS CONSIDERATION OF TASK-RELEVANT INPUTS IN CONSUMER CHOICE**

As Dijksterhuis et al. (2005) pointed out, the typical assumption underlying consumer research, and psychological research more generally, has been “that people consciously process information before they decide what to buy,” whereas in reality they often do not. Consistent with this argument, Loewenstein (2001) suggested that “behavioral decision researchers are moving on” and “are abandoning their own paradigm” (pp. 499–500), and he reviews research indicating that decision making tends to be automatic, habitual, and mindless.

However, as indicated, at this point it appears highly unlikely that the explanatory power offered by an analysis of unconscious influences will approach that provided by the assumption that choices are largely determined by conscious processing of task-relevant inputs. This conclusion is particularly applicable to typical consumer choices and other choices, where conscious information processing is supported by both natural focal stimuli (i.e., the choice options) and by norms regarding the manner in which choices should be made. The conclusion may be somewhat less applicable to novel and unfamiliar judgment tasks, such as estimating distances or sizes, or determining how much one is willing to pay to save birds from drowning. But the assumption that consumers consciously consider the options available to them, whether these options fit their preferences, and so on, has been quite effective in allowing us to predict and explain a wide range of nonobvious marketplace phenomena. Of course, there is no one paradigm that can account for all choices and the manner in which information processing generates these choices. For example, whereas the simple assumption of value maximization can explain many observations, other phenomena appear to be better explained by portraying decisions as based on the balance of justifications for and against options (e.g., Shafir, Simonson, & Tversky, 1993; Simonson, 1989; Slovic, 1975).

It must be emphasized again that the “conscious research program” has long abandoned the naive assumption that decision makers are aware of the various influences on their perceptions and behavior. Thus, a typical study of consumer decision making does assume that information processing of the manipulated stimuli or instructions or both takes place, but participants are often unaware of the factors driving their responses. The role of conscious information processing in the following illustrations, most of which are taken from projects in which I have been involved, is not unlike its apparent role in thousands of other studies. Although these examples are only briefly discussed, the assumption of conscious information processing of task-relevant inputs appears to account for these nonobvious influences on consumer-choice behavior.

Huber et al. (1982) demonstrated the attraction (or asymmetric dominance) effect, whereby the addition to a two-option set of an option that is inferior to one of the existing options increases the (absolute) choice share of that existing option. For example, consumers are more likely to exchange $6 for an elegant Cross pen when they also have the option of exchanging $6 for a less attractive pen (Simonson & Tversky, 1992). Evidently, the addition of the asymmetrically inferior option makes the superior option appear more attractive and easier to justify (e.g., Simonson, 1989), even though consumers fail to recognize the impact of the inferior option on their preferences (e.g., Dhar & Simonson, 2003). Thus, the robust asymmetric dominance effect appears to be driven by a rather detailed processing of the options’ values and the set configuration, even though consumers tend to misattribute their choices to their tastes.

Kivetz and Simonson (2003) showed that idiosyncratic preferences, that is, preferences perceived to be different from those of most other people, play a key role and often receive disproportional weight in consumers’ decisions. For example, they demonstrate that students who liked sushi more than most other students were more likely to join a loyalty program that offered a reward (movie tickets) for purchasing both 12 sandwiches and 12 orders of sushi than to join a program that offered the same reward for purchasing just 12 sandwiches. Kivetz and Simonson referred to the tendency to emphasize idiosyncratic preference fit as the *idiosyncratic fit heuristic*. Although people are likely to consciously process the provided information regarding aspects of options that fit their preferences, they do not recognize their tendency to emphasize such dimensions. For example, in a within-subjects version of this sushi study, respondents do not select the dominated program that required more purchases for the same reward.

Liu and Simonson (2004) asked one group of respondents to rank-order a set of rather similar See’s chocolates. A second group was asked to rate the same chocolate options on a 0 to 100 scale. Next, participants in both groups were given a choice between $2 and their favorite chocolate from the set.

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\(^1\)It is important to note that such automatic classifications of stimuli as positive or negative are different from what we typically refer to as judgments or evaluations. The degree to which initial automatic classification of stimuli as good or bad determines the valence and intensity of conscious evaluations and the moderators of the relation between automatic classifications and conscious evaluations still need to be investigated (J. Bargh, personal communication).
The results indicated that those who rank ordered the options were significantly more likely to select their favorite chocolate over the $2. This finding from a project in progress suggests that a ranking task produces preferences that are “closer” to choice. Again, although participants could not know what caused them to behave in a certain way, their choice was based on a conscious evaluation (i.e., ranking or rating) of the options. Finally, successful recent applications of framing by politicians and marketers have built on conscious processing of salient information as it is presented and on people’s failure to consider how they would have responded to alternative frames. Such examples include using the frames, (a) “climate change” rather than “global warming,” (b) “soy milk” rather than “soy juice,” (c) “death tax” rather than “estate tax,” and (d) “the Patriot Act,” “the Healthy Forest Initiative,” and “tax relief,” rather than alternative labels.

These examples are similar to numerous other illustrations of choice phenomena that can be readily explained based on the traditional assumption that choices are determined primarily by conscious, willful information processing of pertinent, task-relevant inputs, such as various interpretations of the options’ attributes and their fit with the person’s perceived preferences. As argued previously, because choices naturally focus on options, and people tend to believe that options need to be evaluated in some fashion before a choice is made, conscious accounts of choice behavior have a major advantage over unconscious influences.

The fact that all of the previously mentioned illustrations involve phenomena that can be characterized as primarily driven by conscious, willful, controllable evaluation of task-relevant focal inputs does not mean that decision makers are aware of the processes and the various factors (e.g., primes, goals, mood) that influence their responses. In that sense, one might argue these phenomena could also be regarded as unconscious and included under the “99 and 44/45%” of everyday life that is automatic (Bargh, 1997, p. 243). However, whereas the literature does not seem to offer a clear definition of automatic, unconscious influences (although Bargh, 1994, provided a conceptual classification), the emphasis and potential contribution of that literature go beyond the established notion that people’s self-insight is limited. Indeed, observations of limited self-insight and failures of introspection have been well explained by analyses that have focused on these issues (e.g., Nisbett & Wilson, 1977; Wilson & Schooler, 1991).

CONCLUSION

The Dijksterhuis et al. (2005) article reviews and integrates recent research regarding unconscious, automatic influences on judgment, decision making, and behavior and will promote further research in this emerging, important area of consumer research. In this commentary, I tried to reflect more broadly on arguments expressed in recent years by several prominent psychologists and decision researchers that unconscious, automatic influences are the primary drivers of judgment and choice. It is natural and often important for proponents of alternative views to highlight the common misconceptions and the underappreciation of their conviction.

However, some arguments are too extreme, such as the notion that conscious information processing of judgment and decision-making inputs (e.g., the observed options’ attribute values) usually just makes sense of behavior after it is executed. Similarly, the notion that unconscious, automatic processes determine most responses and account for 99 and 44/45% appears overbroad and does not recognize important distinctions. In particular, the common assumption that choice is driven primarily by conscious processing of perceived task-relevant inputs still offers the most parsimonious account of choice behavior. Furthermore, although highly scripted or habitual responses might be considered unconscious, they may be less interesting and reflect previously conscious processes.

Thus, it may not be meaningful to characterize judgments, decisions, and behavior as being normally nonconscious rather than conscious, or as System 1 rather than System 2. When discussing psychological phenomena that are driven mainly by automatic, unconscious processes, it seems reasonable to refer to consciousness and System 2 processes as overriding the default and automatic System 1 processes (e.g., Kahneman & Frederick, 2002; Sloman, 1996). Conversely, when accounting for choices and psychological phenomena that are driven mainly by task-relevant inputs, processes, and goals (e.g., attributes, tastes, rules), the characterization of System 2 as occasionally “overriding” System 1 seems less suitable.

The intriguing findings regarding unconscious, automatic influences on behavior do suggest promising directions for future research that incorporate both conscious and unconscious elements. In particular, using the types of manipulations described by Dijksterhuis et al. (2005), it should be possible to influence the criteria used by consumers (see, e.g., Bettman & Sujan, 1987) and the manner in which options are evaluated. For example, the tendency to consider regret and counterfactuals, to compromise, and to be in a frugal state of mind may very well be influenced by unconscious factors, such as imitation and goal pursuit.

Furthermore, reversing the typical order, consciously evaluated choice stimuli might affect performance in presumably unrelated priming procedures and, in turn, make consumers more susceptible to predictable priming effects. To illustrate, Dhar and Simonson (1999) showed that, in trade-offs between a goal (e.g., pleasure) and a resource (e.g., money) that involve two choices in the same episode, consumers tend to indicate a preference for “going all the way,” referred to as highlighting. For example, the same consumer is more likely to take the taxi to the airport when flying first class and more likely to take the
shuttle bus when flying coach. Conversely, in trade-offs between two goals, such as pleasure and good health, consumers tend to prefer balancing two components of an episode. For example, most consumers believe that they would be happier with two meals that balance a tasty but unhealthy appetizer/entrée with a less tasty but more healthy entrée/appetizer, as opposed to having an all-tasty meal on one occasion and an all-healthy meal on a second occasion.

Suppose, now, that study participants first consider two related choices and episodes (e.g., two dinners at a restaurant) involving a trade-off between pleasure and money (e.g., choices regarding the taste and cost of both the appetizer and entrée) and indicate a preference for total pleasure in one episode and low cost in the second episode (i.e., the highlighting rather than the balancing option). They are then asked to unscramble sentences, solve anagrams, or perform another seemingly unrelated task. Will participants who chose the highlighting option perform better in tasks where the solutions are compatible with the highlighted goal? Will such an effect be stronger for a goal (e.g., pleasure) than for a resource or a constraint (e.g., saving money)?

More generally, putting aside the question of whether conscious or unconscious, automatic aspects play a greater role in choice and can better explain consumer decision making, future research is likely to examine various interactions between conscious information processing and automatic influences and processes. Such research will promote the convergence of the two literatures. On the one hand, even the strongest supporters of consciousness recognize that unconscious, automatic processes can have significant impact on the manner in which consumers evaluate options and make choices. As the literature on automatic, unconscious influences further evolves, it is reasonable to expect that researchers will focus less on demonstrating that such effects exist and turn their attention to interactions between unconscious and conscious processes. Indeed, unconscious influences may have their greatest and most enduring impact when they determine how decision makers consciously think about the objects of decision.

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