Like a Cold Glass of Water on a Hot Summer Day: Essays Exploring Differential Sensitivity to Nonconscious Cues in Consumer Contexts

by

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DEDICATION

This doctoral dissertation is dedicated to my dear family – Mom, Dad, Chad, Kim, Kelly, Coco, and Mocha. Without their encouragement, support, life lessons, and love I would have never had the opportunity to pursue this degree. This accomplishment is as much their achievement as it is mine.

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CHAPTER I

Introduction

"Omnia mutantur nos et mutamur in illis."
-Latin Proverb

Whether a hot shower on a freezing winter day, an ice-cold glass of water on a sweltering summer day, or a trip to the grocery store on an empty stomach, how much an individual values a particular experience, service, or product depends largely on his internal state at the given moment and the context in which he finds himself. Indeed, a hot shower on a sweltering summer day, an ice-cold glass of water on a freezing winter day, and a trip to the grocery store after gorging on a large feast seem far less valuable in comparison to the initial examples.

Marketing practitioners have long understood that humans can be more or less sensitive to stimuli in their contexts depending on their internal states. Consider, for example, savvy bartenders providing patrons with salty snacks to increase the consumption of beverages, stadium street vendors adjusting the prices of ice cream and ice water according to the temperature, and clever advertisers wafting the smell of freshly-baked chocolate chip cookies at bus terminals featuring advertisements for milk. Yet these examples seem obvious; a consumer is often consciously aware that the café in which he is attempting to write a paper is abnormally cold, perfect for encouraging the consumption of copious amounts of hot coffee.

However, it seems possible that these interactions between a consumer's internal state and his sensitivity to context need not be as explicit or as obvious as the aforementioned examples. With the abundance of research on nonconscious processing, priming, and automatic

influence in the consumer behavior and social psychology literatures, that individuals can be subtly persuaded without their conscious awareness is well established. What has not yet been explored is whether this nonconscious influence operates in a manner comparable to the more explicit examples above. That is, might the nonconscious influence of cues in one's context be contingent on interactions between one's internal state and one's context at a particular point in time?

The purpose of this dissertation is to explore the relationship between an individual and his varying sensitivity to cues in consumption contexts at a nonconscious level. Specifically, the essays of this dissertation explore how manipulating fundamental human needs – relationships, social inclusion, and conflict avoidance – alters an individual's internal state, which, in turn, interacts with cues in one's context to systematically influence consumer decision making and behavior. Three essays explore how manipulating these fundamental human needs increases individuals' sensitivity to relevant cues in various contexts, which then influences a variety of outcomes including choice, willingness-to-pay, and consumption.

Motivation

Consumer research on nonconscious processing has repeatedly demonstrated that contextual cues can influence behavior without individuals' conscious awareness (Bargh, 2002; Chartrand and Fitzsimons, 2010; for a review see Dijksterhuis, Chartrand, and Aarts, 2007). However, despite many studies demonstrating that subtle cues influence behavior nonconsciously, results are not always consistent: cues have an impact in some contexts but not

in others and sometimes the same cues even produce opposite behavioral results (Chartrand, Dalton, and Fitzsimons, 2007; Fitzsimons and Bargh, 2003; Martin, 1996). This unpredictability of cue influence has left a sizable a gap in the understanding of exactly *how* and *when* contextual cues influence choice and behavior. Although some research has explored these discrepancies by looking at how the same cue can have different *meanings* to different people – for example, shopping cues lead women to possibility-driven activities while the same shopping cues lead men to more purpose-driven activities (Wheeler and Berger, 2007) – what remains unclear is *when* cues are more or less effective at influencing behavior in general.

Marketing practitioners are all too familiar with this problem of not knowing *when* stimuli subtly influence choice and behavior, particularly in a time when consumers' conscious attention is increasingly difficult to capture. It has been estimated that the average individual is exposed to between 3,000 and 5,000 marketing stimuli (traditional ads, logos, and promotions) each day. Although it is impossible to consciously perceive 5,000 stimuli per day, Zaltman (2003) and other researchers have suggested that only 5% of processing is conscious while 95% is nonconscious. Exact numbers aside, even if the majority of processing occurs at a nonconscious level, the prior research suggests that nonconscious cues are not always effective at influencing choice and behavior. Indeed, consumers are not mindless zombies influenced by each and every cue with which they come into contact, which begs the question: why are some nonconscious cues more effective at influencing behavior than others?

To address this question, it is worthwhile to return to the aforementioned examples in which the value of a particular stimulus was contingent on the interaction of an individual's internal state and the context in which an individual finds himself. For example, a thirsty person

is likely to value ice water, in general, but that value is likely to get a boost if the person finds himself in a hot desert as opposed to the North Pole. The term applied to the changing sensitivity to the value or appeal of a stimulus based on an interaction between an individual's internal state and his context is "alliesthesia" (Cabanac, 1978). Despite an abundance of real-world examples, very little academic research has explored the role of alliesthesia in consumer contexts. Indeed, a review of the consumer literature revealed just one study (Wadhwa et al., 2008) that explicitly mentions the notion of alliesthesia. Even then, the authors of that paper focus on what they refer to as "reverse-alliesthesia" in the context of product sampling, suggesting that sampling an indulgent food can lead to *more* subsequent indulgence as opposed to less. Certainly, to date, no consumer research has explored how the interaction of one's internal state and one's context might vary the effectiveness of subtle contextual cues with respect to nonconscious processing.

Although consumer research has not yet directly explored this relationship between one's internal state and his context, recent research in other disciplines has considered related ideas. For example, neuroscience research on conflict monitoring and conflict adaptation suggests that humans are keenly aware of conflict or the potential for conflict in their context and automatically allocate resources toward mitigating or eliminating this potential for conflict (Botvinick et al., 2001). Even more recent neuroscience research explores a link between conscious (top-down) and nonconscious (bottom-up) processes and suggests that the former can modulate the latter (Kiefer, 2012). That is, explicit experiences of stress and conflict can lead individuals to be more sensitive to relevant cues in their context associated with those explicit experiences (as shown at the neural level) without the individuals' conscious realization of this increased cue sensitivity. Interestingly, this research adds to the growing evidence contradicting

prior theorizing on the relationship between conscious and nonconscious processes, which had traditionally been considered as distinct, independent brain processes (Posner and Snyder, 1975).

That the human brain is well designed for being sensitive to and adapting to the environment is unsurprising from an evolutionary perspective, but just how adept the brain is at engaging in this ongoing process at an automatic, nonconscious level is particularly interesting and relatively unexplored. Beyond the neuroscience work previously mentioned, there has been some psychological research on basic motivation incorporating this interaction between one's internal state and his context (for a review, Berridge, 2004). The French physiologist Claude Bernard introduced the notion of the "internal milieu" (milieu intérieur) suggesting that the human body strives to maintain a constancy of its internal environment (Gross, 1998). This notion of the "internal milieu" has extended beyond physiological contexts to psychological and social contexts (Schulkin, 2011) with the main idea being that humans operate at a comfortable steady state and that deviations from this steady state must be corrected for. How this internal milieu is maintained is still debated – some argue there exists a constant set point that humans strive to maintain (homeostasis) while others argue for a shifting set point that allocates resources most efficiently in a given situation (allostasis) – but both approaches share an important idea in common: humans are motivated to keep their internal state at some relative constancy and that deviations from some set point, whether that point is static or dynamic, must be attended to.

But what sort of factors can shift an individual's internal state? At the most fundamental level it seems logical that threats to one's basic human needs would affect his internal milieu. Whether needs related to sustenance – such as food, water, or rest – or social-psychological needs – such as control, self-esteem, or belonging (Pittman and Zeigler, 2007; Baumeister and

Leary, 1995), threatening or manipulating such fundamental needs could likely alter one's internal milieu and, in doing so, increase sensitivity to relevant contextual cues that would help regulate the internal milieu. Consider, for example, research suggesting that social uncertainty in macaque populations leads to elevated cortisol levels for the members of that population (Sapolsky, 1992) or the research showing how cortisol levels in humans and other primates (baboons, macaques) decrease when social contact is restored (Erickson et al., 2005; Sapolsky, 1990). Thus, manipulating fundamental needs can produce physiological responses that likely alter one's internal state. It is this interaction between one's internal state and relevant cues in his context that forms the underlying research question addressed by this dissertation.

Research Question and Implications

The critical question addressed by this dissertation is as follows: does an individual's sensitivity to cues in his context vary as a function of the interaction between his internal state and his context without his conscious awareness? Bearing in mind how the value of a stimulus changes as an interaction of one's internal state and his context, it seems reasonable that a consumer's sensitivity to subtle contextual cues can also vary in predictable ways at a nonconscious level.

Understanding how sensitivity to nonconscious cues can change would have implications in a variety of domains including: marketing effectiveness and efficiency, methodological shortcomings in priming and nonconscious processing, and a conceptual understanding of how consumer value varies dynamically as a function of internal and external interactions.

First, with respect to marketing practice, even the best-laid marketing plans can go awry as a result of situational factors beyond the control of marketing managers. Understanding how individuals' internal states and specific contexts interact may well lead to more efficient, more effective marketing plans. This idea is particularly meaningful in an emerging era in which technology permits knowing the status of individual consumers, as well as the contexts in which those consumers find themselves via geolocation technology in mobile phones, tablets, and other devices. Just as marketing evolved from mass production to mass customization, so, too, might it be possible for marketing to evolve to an even more dynamic process, one that adjusts messages and product characteristics *in the moment* based on an individual's internal milieu and the context in which he finds himself.

Second, one of the challenges inherent in the current research on nonconscious processing is that no distinction is made between those individuals who are more susceptible to subtle influence and those who are not. Just as recent studies exploring "time-of-day effects" have demonstrated wildly different results depending on the time of day during which a study is conducted, so, too, have researchers seen variation in the effectiveness of primes and nonconscious cues. To date, very few studies have explored how subtle cues may affect individuals differently (for an example see Wheeler and Berger, 2007), yet anyone doing this kind of research is all too familiar with the inconsistent effectiveness of the methodologies. Thus, exploring the possibility that cue effectiveness is due, at least in part, to an interaction between an individual's internal state and his context will have strong implications for future research on nonconscious processing. People may not, in fact, be equally sensitive to all cues in all situations, and the methodologies used to study nonconscious processing would need to be updated to reflect this.

Finally, extending the notion of alliesthesia – the idea that the value an individual places on a particular target varies as a function of his internal state and his context – to the domain of nonconscious processing would be useful for both practice and theory. In practice, marketing managers could understand how to bring more value to their consumers in potentially more cost-effective, efficient ways, while researchers could have a better understanding of how value can change as a function of such subtle influence. As researchers in behavioral economics continue to uncover ways in which humans deviate from the rational bounds of classic economics, the present research could inform the conversation with respect to how interactions between one's internal state and his context affect his decision making, valuation, and preference formation.

Research Design

To address the research question, three separate sets of studies explore the relationships among the internal states of individuals, the cues present in their context, and the subsequent implications for consumer choice and behavior. Specifically, each of the essays explores a different fundamental human need – needs for relationships, social inclusion, and avoidance of cognitive conflict, respectively – and how threats to those needs motivate individuals to become more sensitive to relevant cues in their context for the purpose of regulating their internal milieu. Furthermore, the particular methods used and measures obtained address whether the effects are consciously perceived and explicitly attended to by participants or, as predicted, operate at a nonconscious, implicit, and automatic level of processing.

In the first essay (Chapter II), I manipulate the fundamental human need for "relationships" in two ways: first, I prime participants to be more or less sensitive to relationships; second, I threaten participants' ability to maintain relationships among selected consumer products by explicitly informing them that one (or more) of their selected items is (are) unavailable for consumption. The prediction is that participants who are subtly made to be more sensitive to relationships confronted with the very real threat of breaking apart relationships would be reluctant to accept a partial set, as this would violate the importance of keeping related items together. Furthermore, if provided an opportunity to restore the relationship among a set of products, participants sensitive to relationships would be more likely to take advantage of such an opportunity. Participants primed to be insensitive to relationships (i.e., primed to value independence and separation), should show no such restraint when it comes to consuming a broken set of products.

In the second essay (Chapter III), I manipulate a slightly different fundamental human need – the need for social inclusion and belonging – which is a bit more personal than the aforementioned construct of "relationship" manipulated in the first essay. In this essay, I have participants write about a time they were socially excluded (or included) and then present them with consumer products that include subtle humanlike features or products that are construed using humanlike terms (e.g., "the body of the phone" compared to the "design of the phone"). The prediction is that participants who are made to feel socially excluded and, therefore, whose internal milieus are shifted as a result of this threat to a fundamental need, should be more sensitive to the subtle humanlike cues presented in their context. These humanized products may help restore the balance of the participants' internal state, which would suggest a preference for the humanized version of the products and potentially a *lessened* need for genuine interpersonal

interaction or a willingness to help others for the purpose of restoring social connection, as the need for belonging may have been satiated by interaction with the humanized product.

In the final essay (Chapter IV), I move beyond social needs for relationships and belonging into a psychological need to avoid conflict, particularly cognitive conflict, and the ensuing stress such conflict evokes. Using a variety of contexts and cues, including spending and saving, competing and cooperating, and being healthy and indulging, I have participants construe their goals as either being compatible with one another (e.g., because I work out I can eat whatever I want) or conflicting with one another (e.g., because I work out, eating junk negates my efforts to be healthy). I test both the nonconscious nature of the effect, as well as the role relevance of the contextual cues plays in the process. The prediction is that participants who are randomly assigned to construe their goals as conflicting, a manipulation likely to alter the internal state of the participants, are more sensitive to relevant cues in their context that will help resolve this conflict and regulate that internal state. Participants randomly assigned to construe their goals as compatible with one another, however, should show no such effect, as their internal states were not shifted by the manipulation and need no such regulation.

Overall, if maintaining one's internal milieu, whether culturally or biologically prescribed, is so important, then it should be the case that individuals are more sensitive to cues in their context that help them to do so. People who are culturally sensitive to relationships, or those people who are made to be more sensitive to relationships in a particular moment via priming, should be sensitive to broken relationships and opportunities to restore those relationships. People who are made to feel socially excluded should be more sensitive to social cues embedded in products and to products positioned using humanistic terminology to help fill their social void. And people experiencing cognitive conflict should be more sensitive to cues

that help resolve such conflict. In all three examples, one's internal milieu is altered and, in each example, individuals are presented with cues in their context that could potentially help restore that balance in a subtle, nonconscious manner. Together, the essays of this dissertation provide evidence for the proposed interaction of one's internal state and his context with respect to varying sensitivity to nonconscious cues, while separately, each essay specifies respective contributions to relevant literature, implications for marketing practice and theory, and opportunities for future research.

CHAPTER II

One Without the Other: Seeing Relationships in Everyday Objects

People often make multiple choices at the same time, for example choosing a snack and drink, or a cell phone and accessories, only to learn that some of their choices are unavailable. Consider the following situation. A movie-goer peruses the movie theater snack counter offerings, decides to purchase a soda and pretzels, but upon ordering them, is told that the chosen soda is out of stock. Does this would-be snacker purchase the pretzels alone or maybe the pretzels and another drink? Or does the unavailability of the desired soda seem to loom large, shifting choice entirely, resulting in a decision to have no snack at all or a different snack altogether? We use culture-as-situated cognition theory (Oyserman, 2011) to predict and demonstrate that the likelihood of choosing "one without the other", purchasing the pretzels if the chosen soda is unavailable, is not simply happenstance or based on idiosyncratic tastes and circumstances. Rather, subsequent choice once initial choices are partially blocked is importantly predicted by which cultural mindset is accessible for use at the moment of decision.

Cultural mindsets are tacit meta-theories about what is important and valued (content), how to think (procedures), and why to act (goals) (Oyserman, 2011). The tacit meta-theory of individualism is that institutions and relationships are just backdrops to individual striving, what matters is one's own goals; the tacit meta-theory of collectivism is that individuals take on value through their engagement with social institutions and within their relationships with others. In the current studies, we contrast the consequences of partially blocked choice for subsequent

decisions when an individualistic or a collectivistic mindset is accessible at the moment of judgment. We start with a core assumption of culture-as-situated-cognition theory, which is that all societies socialize for both mindsets because all societies need to address three core issues: insuring survival of the group, regulating relationships among people within and outside the group, and insuring that innovation is supported. The first two core issues are typically highlighted in descriptions of collectivism which include the central role of social relationships, caring about what others think (e.g., Chen et al., 2011; Oyserman, Kemmelmeir, & Coon, 2002; Schwartz, 1992; Triandis, 1995), between-group antagonism (Oyserman, 1993), and willingness to sacrifice for one's own group (Leung & Bond, 1984). The third core issue typically highlighted in descriptions of individualism is the central role of being unique and different, and taking initiative in going one's own way (Triandis, 1995).

Culture-as-situated-cognition theory assumes that cultural mindsets, though rooted in meta-theories about social structures and human relationships, spill over from human relationships to influence cognitive processes that facilitate meaning making more generally. The cultural mindset that is accessible at the moment of judgment influences which mental procedures are brought to bear on the judgment task. The procedures cued by an individualist mindset are segmenting and parsing out a central point; the procedures cued by a collectivistic mindset are connecting and integrating across elements. Because they are rooted in social structures and relationships, cultural mindsets are often accessible in everyday situations; in the lab, they can easily be primed using a variety of methods as summarized in a recent meta-analytic synthesis. For example, a small task like reading a paragraph and clicking on the first person pronouns in the paragraph influences visual (Stroop task) and auditory (dichotic listening) performance among Chinese, Korean, American and Norwegian participants (Oyserman,

Sorensen, Reber, & Chen, 2009). No matter the country, participants are better at segmenting out information after clicking on first person singular (individualism prime) rather than first person plural (collectivism prime) pronouns. Thus, between-country differences in the propensity to think in related or holistic terms (e.g., Nakamura, 1960; Nisbett, Peng, Choi, & Norenzayan, 2001) seem to be rooted in accessible cultural mindset (Oyserman, 2011; Varnum, Grossmann, Kitayama, & Nisbett, 2010).

In the current studies we are interested in the effect of collectivistic mindset in blocked choice situations, focusing especially on the difference between initial and final choices. Collectivism has been linked to choice in a number of important ways. First, people living in collectivistic (vs. individualistic) societies show somewhat higher conformity to group norms (for a meta-analysis, Bond & Smith, 1996). This implies that they will be more likely to make choices based on others' preferences, something which has been demonstrated (e.g., Han & Shavitt, 1994). Second, people living in collectivistic societies are more likely to use informal, intuitive reasoning, rather than formal, rule-based reasoning in making choices (e.g., Norenzayan, Smith, Kim, & Nisbett, 2002). This implies that they will be more likely to make choices based on some kinds of relationships rather than others. Indeed, people living in collectivistic societies display a particular pattern of cognitive dissonance (e.g., Imada & Kitayama, 2010). They are more likely to justify their public, but not their private, choices by changing their preferences after choosing so that the non-chosen object is liked *less* and the chosen object is liked *more*.

What has not yet been explored, however, is what happens in situations of blocked choice when multiple items are chosen at the same time and then not all can be obtained. The above-summarized dissonance research implies that collectivists should like the chosen, obtainable

items more if choice is public. But beyond the effect of social context, this prediction does not take into account the possibility that items chosen at the same time will be experienced differently depending on whether a collectivistic or individualistic mindset is accessible at the moment of judgment.

Just as which cultural mindset is accessible at the moment of judgment influences people's sensitivity to social relationships, we predict that which cultural mindset is accessible at the moment of judgment will influence people's sensitivity to noticing an emergent relationship among items chosen at the same time. First, consider the effect of an accessible individualistic mindset. Processing with an individualistic mindset should retain focus on each item separately. If not all chosen items can be obtained at the same time, the obtainable items will retain their separate value. Next, consider effect of an accessible collectivistic mindset. In contrast to processing with an individualistic mindset, processing with a collectivistic mindset should train attention to an emergent relationship among selected items chosen at the same time. Once perceived as connected, the original set should be more valued and separate parts should be less valued. Thus, in blocked choice situations in which not all of one's initial choices can be obtained, we predict that final choice will be selected from the available subset of initial choices if, at the time of judgment, accessible mindset is individualistic. In contrast, if at the time of judgment a collectivistic mindset is accessible, final choice should exclude the available subset of initial choices if the set cannot be completed, and participants should be willing to pay more for the option to obtain all initial choices if that option is available.

We test these predictions by having participants make choices (among puppies, cell phone accessories, and snacks), blocking their ability to obtain some of their choices and asking them how they would like to proceed. Because cultural psychology is based in between-group

differences, we start by showing a difference in the decisions made by Anglos and Latinos who represent groups with average differences in collectivism (not individualism; for a meta-analytic review, Oyserman, Coon, & Kemmelmeier, 2002). To demonstrate that this between-group difference is due to accessible mindset, in subsequent studies, we prime which cultural mindset is accessible at the moment of judgment. This allows us to demonstrate that accessible mindset is the active ingredient in any shifts after initial choice.

Our studies build on and extend prior findings in two ways. First, we demonstrate that accessible collectivistic mindset reduces willingness to accept a partial set of initial choices in a blocked choice paradigm, resulting in a shift in preference *toward* previously non-chosen items. Second, we demonstrate that sensitivity to relationships mediates the effect of cultural mindset on choice in situations in which initial choices are partially blocked or unavailable.

The Amazon.com Studies

In Study 1a, the responses of Anglo (*n*=34) and Latino (*n*=27) students were compared. Latinos were assumed to be higher in chronically accessible collectivistic mindset than Anglos.[1]

[1] This is based on a meta-analysis of all available data sets comparing cultural values of Anglo Americans and others (Oyserman, Coon, et al., 2002), which included a subgroup comparison of 21 studies comparing Latino and Anglo Americans within the U.S. Analyses show that Latino Americans are higher in collectivism and no different in individualism than Anglo Americans. This same pattern emerges in the larger set of studies comparing the U.S. with Latin American countries. For the within U.S. comparison, scale content moderator analysis suggests that lack of difference in individualism is not moderated by scale content and that difference in collectivism is due to difference in obligation to in-group rather than to differences in advice-seeking or in content of self-concept (Oyserman, Coon, et al., 2002).

We predicted that Anglos would be willing to take chosen items and Latinos would refuse them if not all were available.[2]

Undergraduate paid participants were recruited for a "marketing research partnership between Amazon.com and [their] university." They were then presented four cell phone-related items (cell phone, ear buds, cell phone charger, and cell phone case). Each item was presented in four colors (red, blue, black, white). Participants were asked to choose one of each type of item in whatever color they preferred. Following choice, participants were told that one of their selected items was unavailable and asked how they wanted to proceed among the following choices: purchase just the available products, start over and select all new products, or purchase nothing and exit. Proceeding with only the available products meant participants had broken up their selected set while the other two choices meant participants were unwilling to break up their initially selected set. To reflect our prediction that collectivistic mindset would reduce willingness to break up a set, responses were coded as either willing to break apart the related set (first choice) or not (other two choices). Most Latinos did not want to break up the set they had initially chosen; in contrast, most Anglos were willing to. Indeed, Anglos (79%) were almost twice as likely as Latinos (41%) to purchase whatever products were available from their initial choice ($\chi 2 = 3.39$, $p < .04$, odds ratio, 3.04, Figure II.1, leftmost bars).

Thus, by showing that Anglos and Latinos significantly differ in the expected direction Study 1a lends support to the prediction that accessible cultural mindset influences sensitivity to the possibility of a relationship and therefore choice. While providing a face-valid test, what a between-group difference cannot test is the underlying assumption that effects are due to

[2] Our dependent variable was thus a binary choice. The appropriate test is a chi-squared test which cannot be represented as an effect size; instead, we present choice percentages and odds ratio of choice by condition (Bland & Altman, 2000).

difference in accessible cultural mindset. Therefore, in Study 1b we addressed this gap, using Qualtrics to randomly assign a second sample of subject pool undergraduates (n=267), to view one of two "new" Amazon.com advertisements composed of one or several stick figure(s) with a logo and asked, "How can Amazon.com help you stick out (stick together)" (Figure II.2: individualistic mindset condition- top panel, collectivistic mindset condition- bottom panel). Participants then completed the choice task, and as in Study 1a learned that an item was out of stock in their color choice, and were asked how they would like to proceed. After responding, participants learned that Amazon.com could offer the out-of-stock item via a third-party partner and were asked what they would be willing to pay for this service.

Like Anglos in Study 1a, participants in the individualistic mindset condition in Study 1b were 50% more likely to accept the partial set ($M_{Individualistic\text{-}Mindset}$ = 63%, $M_{Collectivistic\text{-}Mindset}$ = 45%; χ^2 = 8.25, $p < .005$, odds ratio, 2.04, see Figure II.1, 2nd bars from left). Participants were willing to pay more for this service if they accepted the partial set (M = \$4.84, SD = \$5.46) rather than refused it (M = \$3.50, SD = \$4.13; $F(1,266) = 5.60$, $p < .02$). This main effect was moderated by accessible mindset ($F(1, 266) = 8.41$, $p < .004$): participants in the collectivistic mindset condition were willing to pay more to complete the set if they had just accepted the partial set ($M_{CollectivisticMindset\text{-}accepted\ partial\ set}$ = \$6.33, SD = \$6.06) than otherwise ($M_{CollectivisticMindset\text{-}refused\ partial\ set}$ = \$3.12, SD = \$4.35, $p < .001$). Breaking up the initial set did not influence willingness to pay for individualistic mindset participants ($M_{Individualistic\ Mindset\text{-}accepted\ partial\ set}$=\$3.77, SD = \$4.75; $M_{Individualistic\ Mindset\ -refused\ partial\ set}$ = \$4.05, SD = \$3.78 p =.72). As predicted, accessible collectivistic mindset increased likelihood of rejecting a partial set and willingness to pay more to complete the set.

The Cute Puppy Studies

To insure that effects were not an artifact of the particular prime and choice situation we used in Study 1, in Study 2 we changed each of these. As detailed next, we used the pronoun task (Gardner, Gabriel & Lee, 1999) adapted for computer (Oyserman et al., 2009) to prime mindset, and had participants choose puppies (not phone accessories) for a friend (rather than themselves). In the pronoun task, participants read a paragraph and were asked to click on the pronouns they saw. They either read a paragraph with first person singular (I, me, my) or first person plural (we, our, us) pronouns. Whether read in English, Chinese, Korean, or Norwegian, accessible first person singular pronouns cue individualistic mindset and first person plural pronouns cue accessible collectivistic mindset (Oyserman et al., 2009).

Undergraduates (n=177) were welcomed to a Qualtrics programmed "preference study." Ostensibly to clear their minds, they were first asked to read a paragraph (the prime) and click on the pronouns they saw (turning the pronouns red). They were randomly assigned to see either first person singular (individualistic mindset condition), or plural (collectivistic mindset condition) pronouns. Everyone then read about a friend who wanted two puppies as pets, had five finalist puppies and wanted help narrowing down to the two to choose. Participants chose two puppies from a randomly ordered set of five photographs and then learned that the friend's landlord would allow only one pet per apartment. Participants were presented with the five puppies again and asked to choose only one puppy.

Replicating Study 1a and1b, cultural mindset affected final choice: individualistic mindset participants took one of their previous top puppy choices ($M_{Individualistic\text{-}Mindset}$ = 60%) but collectivistic mindset participants did not ($M_{Collectivistic\text{-}Mindset}$ = 40%; $\chi^2 = 6.14$, $p < .01$, odds ratio,

2.13, Figure II.1, 3rd bars). Thus, whether implied by cultural group as in Study 1a, or primed with a catch phrase (Study 1b) or with first person pronouns (Study 2), accessible cultural mindset influenced choice. Participants in the collectivistic mindset condition preferred an initially non-chosen puppy over initially chosen ones if these puppies were first considered as part of a set. In Studies 3 and 4 we turn to the question of whether the process was mediated by sensitivity to an emergent relationship as we have predicted.

The Cute Puppy Studies – Mediation

To test if the influence of collectivistic mindset on choice was due to increased sensitivity to emergent relationships among choices, in Study 3 we used the same prime and puppies as in Study 2 but examined the effect of mindset on sensitivity to relationships more directly. We did so in two steps. In the first step (Study 3a), we tested the effect of being randomly assigned to mindset condition on the reasons that pairs of puppies seemed to go together. In the second step (Study 3b), we looked at whether reasons mediated choice.

In Study 3a (n=37, online adult sample), participants were asked to choose pairs of puppies that seemed to go together and to give reasons why they went together. To create an obvious choice, two puppies were randomly designated as siblings, the rest were not. In the collectivistic mindset condition, participants listed more reasons ($M_{Collectivistic\text{-}Mindset}$ = 3.41, SD = 1.58; $M_{Individualistic\text{-}Mindset}$ = 2.30, SD = 1.13; $F(1, 35) = 6.54$, $p < .01$) overall and more reasons even when reasons referring to siblinghood were excluded from analysis, ($M_{Collectivistic\text{-}Mindset}$ = 2.47, SD = 1.59; $M_{Individualistic\text{-}Mindset}$ = 1.55, SD = 1.10; $F(1, 35) = 4.31$, $p < .05$). Moreover, while number of reasons differed across conditions, word count did not ($M_{Individualistic\text{-}Mindset}$ = 38.85, SD

= 24.07, $M_{Collectivistic\text{-}Mindset}$ = 35.12, SD = 14.06; $F(1, 35) = .07$, $p = .80$), suggesting that compliance does not account for this difference.

Having shown an effect on reasons in Study 3a, in Study 3b we replicated Study 2 in a new sample (n=77, online adult sample) with the following addition -- we informed participants about a sibling pair and requested that they list the reasons for their initial pair choice after they learned they could not have all of their choices.

Replicating the basic finding from Study 2, participants stuck with one of their initial two choices in the individualistic (but not collectivistic) mindset condition ($M_{Individualistic\text{-}Mindset}$ = 64%; $M_{Collectivistic\text{-}Mindset}$ = 34%; $\chi^2 = 6.88$, $p < .01$, odds ratio, 3.43, Figure II.1, 4th bars from left). Thus, even when provided with an obvious relationship, participants in the individualistic mindset condition were more willing to break the relationship. Moreover, replicating Study 3a, collectivistic mindset participants listed more reasons the puppy pair went well together overall ($M_{Collectivistic\text{-}Mindset}$ = 4.37, SD = 2.62; $M_{Individualistic\text{-}Mindset}$ = 2.59, SD = 1.43; $F(1, 75) = 13.73$, $p <$ .001); and even when reasons referring to siblinghood were excluded from analysis, they listed more reasons the puppies went well together ($M_{Collectivistic\text{-}Mindset}$ = 2.10, SD = 1.97; $M_{Individualistic\text{-}Mindset}$= 1.44, SD = 1.43; $F(1, 75) = 2.92$, $p = .09$). This difference was not due to compliance as word count of responses did not differ between the two groups ($M_{Collectivistic\text{-}Mindset}$= 40.76, SD = 30.80; / $M_{Individualistic\text{-}Mindset}$ = 32.79, SD = 22.64; $F(1, 75) = 1.69$, $p = .20$). As predicted, this measure of greater sensitivity to relationships over and beyond the obvious sibling relationship mediated the relationship between cultural mindset and choice: collectivistic mindset participants generated more reasons (beyond the obvious) that their puppies were related, which led them to avoid breaking up their initial selection (95% CI [0.01, 1.22]; Preacher and Hayes, 2008). In Study 4 we conceptually replicate Study 3, returning to a choice for oneself and focusing again

on sensitivity to the existence of an emergent relationship as mediating the effect of accessible collectivistic mindset on choice when initial choice is partially blocked.

The Snack Studies – Mediation

In Study 4, participants in a "consumer preference study" were randomly assigned to a prime condition using the pronoun task and then chose a drink and snack from three bottled beverages (milk, soda, fitness water) and three packaged snacks (cookies, chips, fitness bar) presented in randomized order. This choice situation allowed us to conceptually replicate Study 3 without mention of an obvious relationship among choices and, as detailed next, addressed the possibility that participants' choices were influenced by when they provided reasons for their choices. In Study 4a, a sample of undergraduates (n=91) were asked to type in the reasons their items went well together *before* learning that "Whoops! A mistake had been made: instead of getting to choose two options, [participants] could select only *one* (a beverage or snack)". Participants were shown the original six items and asked to choose the one they would like to have. In Study 4b, a second online sample of adult participants (n=106) were asked to type in the reasons their items went well together *after* learning that they could only have one.

Results were not influenced by the order in which reasons for choice were obtained. Compared to participants in the collectivistic mindset condition, those in the individualistic mindset condition were about twice as likely to take one of their initial choices, breaking up the initial pairing (before: $M_{Individualistic\text{-}Mindset}$ = 38%, $M_{Collectivistic\text{-}Mindset}$ = 15%; $\chi 2 = 5.55$, $p < .02$, odds ratio, 3.27, Figure II.1, 5th bars from left; after: $M_{Individualistic\text{-}Mindset}$ = 45%, $M_{Collectivistic\text{-}Mindset}$ =

25%; $\chi 2 = 3.99$, $p < .04$, odds ratio, 3.65, Figure II.1, rightmost bars).

Replicating Studies 3a and 3b, individualistic mindset participants gave fewer reasons that their choices went together (before: $M_{Individualistic\text{-}Mindset} = 1.57$, $SD = 0.73$, $M_{Collectivistic\text{-}Mindset} = 2.45$, $SD = 1.50$, $F(1, 89) = 12.35$, $p < .001$; after: ($M_{Individualistic\text{-}Mindset} = 2.02$, $SD = 1.35$, $M_{Collectivistic\text{-}Mindset} = 2.74$, $SD = 1.98$, $F(1, 104) = 4.64$, $p < .03$). This effect was not due to compliance since condition did not affect number of words used to respond (before: $M_{Individualistic\text{-}Mindset} = 16.64$ words, $SD = 15.85$, $M_{Collectivistic\text{-}Mindset} = 16.06$, $SD = 13.80$, $F(1, 89) = .03$, $p = .85$; after: $M_{Individualistic\text{-}Mindset} = 18.60$ words, $SD = 15.42$, $M_{Collectivistic\text{-}Mindset} = 18.33$, $SD = 12.13$, $F(1, 104) = .01$, $p = .92$).

Replicating Study 3b, the number of reasons choices went together mediated the relationship between cultural mindset and final choice. Participants in the collectivistic mindset condition listed more reasons their initial snack and beverage selections went together and then, when told one of their selected items was unavailable for consumption, chose to select a new snack or beverage instead of consuming their other initially-selected item that was available (95% CI before: [0.11, 1.43], after: [.01, .94] omitting zero at 95% confidence). Individualistic mindset participants listed fewer reasons their selected snack and beverage went together and then, when told one of their selected items was unavailable for consumption, were nonetheless content with accepting the other selected item that was available.

Discussion

We presented people with a variety of choice situations and found that when a collectivistic mindset was accessible at the moment of judgment, people were 50% to 100% more likely to respond as if choices they made at the same time had emergent value. They were less likely to want *some* of their choices if they could not have *all* of them whether they were choosing for themselves or someone else and whether choices were inanimate (a snack or cellphone) or animate (a puppy). We started with a between-group comparison of Anglos and Latinos and followed up with a number of different priming methods, randomly assigning people to either an individualistic or a collectivistic mindset condition. Latinos and people randomly assigned to the collectivistic mindset condition were more hesitant to break up a set, more willing to pay extra to restore a set, and more sensitive to the existence of a relationship among products. Indeed, the more participants noticed relationships among their just-made choices, the more their subsequent choices were affected.

Taken together, our results contribute to a better understanding of how culture situates cognition and provide insights into underlying cognitive processes. While having and maintaining relationships is culturally universal (Mellar, Boyle, Bar-Yosef, & Stringer, 2007; Schwartz & Bardi, 2001), individualistic and collectivistic cultural mindsets differentially influence sensitivity to the possibility of a relationship. Though likely developed to highlight the meaning of social relationships, cultural mindsets carry over into non-social contexts. Thus, a collectivistic mindset creates a momentary attunement to the possibility of a relationship, such that people in collectivistic mindsets can and do create relationships among objects on the spot and are loath to break up this relationship. As we showed in our puppy study, this can result in

otherwise surprising choices, including choosing what was previously a less preferred choice (e.g., rejecting a first and second choice once they are seen as a pair). While at first pass these preferences seem incompatible with rational choice, in particular with the dominance principle in choice (Kahneman & Tversky, 1984), a second look demonstrates that once considered together, choices may not be separable. Because people in collectivistic mindset experience initial choices together as a relationship, they are not valued separately. We studied effects in consumer choices but effects should generalize across domains, including for example, public policy choices. Our studies imply that an accessible collectivistic mindset would reduce willingness to accept some chosen policy options if others cannot be obtained, reducing compromise.

Figure II.1 Collectivistic Mindset Reduces Willingness to Break Up Emergent Relationship

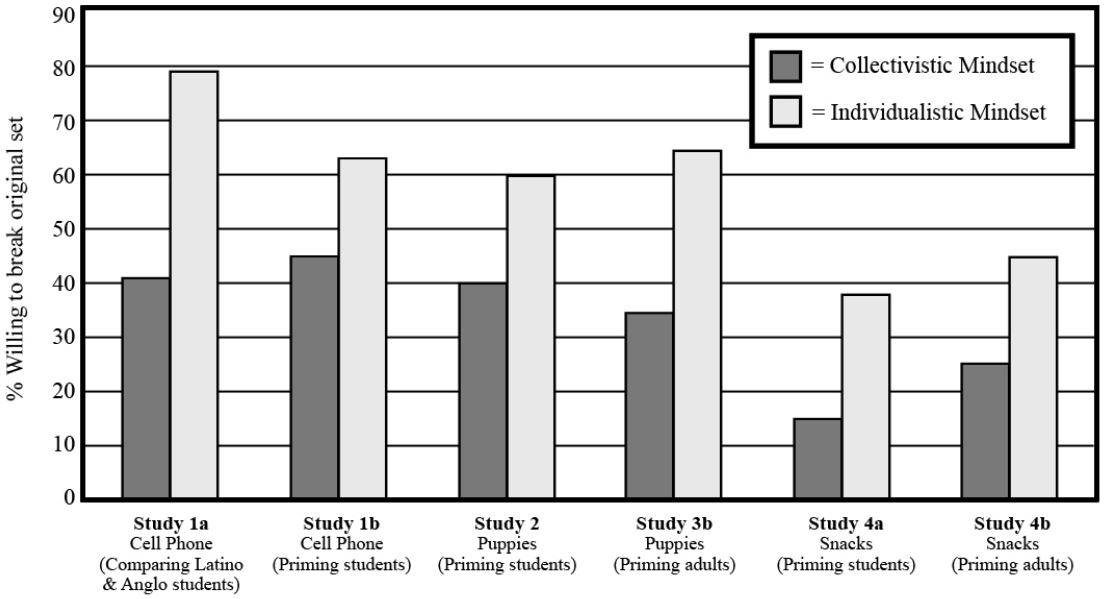


FIGURE II.2 Amazon.com Mindset Prime

CHAPTER III

It's Smiling at Me: Satisfying Social Needs via Consumer Products at the Expense of Interpersonal Relationships

"Her name is Cami, and we met three years ago when I started college. Even if she is unreliable and gets pretty messy sometimes, Cami's become my friend. She's always here for me, like when I'm stressed out and just need to get away for awhile. With so many memories, I really don't know what I'd do without her."

Although the opening quotation reads like the introductory tale of two college freshmen, the Cami referred to in the quotation is actually a Chevrolet Cavalier. Anecdotal stories of owners forming sincere relationships with their vehicles to the point of naming the cars are not uncommon. In this example, Cami's owner has ascribed the car humanlike qualities, personality traits, and agency. Through direct interaction with a material object, bonds may develop such that owners care for the item, experience distress when others mishandle it, and mourn for its loss. Realizing the benefits of such deep connections to products, marketers often encourage anthropomorphism by offering personalization, styling, and customizable features—essentially, attempts to bring the product to life (Aggarwal and McGill, 2007). Solomon (1983) argues that it is this symbolic nature of many products that dictates consumption choices. For example, consumers might purchase goods and services hoping to attain love, affection, comfort, and emotional pleasure. Although these social needs are typically fulfilled primarily through contact with other people, the opening example illustrates the feasibility of products also fulfilling these social needs. Although recent studies have explored consumption as a means of impression management (Berger and Heath, 2007), self-preservation (Gao, Wheeler, and Shiv, 2009) and

compensation (Rucker and Galinsky, 2009; Woodruffe, 1997), there is a dearth of research focusing directly on the potential interchangeability of people and products with respect to satisfying social needs. Furthermore, if it is true that fundamental social needs can be fulfilled via product consumption then such consumption could, paradoxically, serve as a detriment to genuine interpersonal relationship development and maintenance. The primary objective of the current research is to explore whether consumers use products to fulfill social needs and, if so, whether consuming for this purpose threatens true, interpersonal relationships.

In the present essay, I demonstrate that consumer products serve as a proxy for genuine human interaction when threats to social needs are made subtly apparent. Further, the authors show that this product-as-person-proxy phenomenon comes at the expense of genuine interpersonal interactions. Study 1 shows that participants primed with negative social words are implicitly more sensitive to a product positioned with humanlike attributes compared to the same product lacking such positioning. Study 2 builds on the first study by demonstrating that socially excluded participants whose social needs are fulfilled via a consumer product with humanlike qualities—for example, a cellular phone described using humanized terms—choose to forego opportunities for genuine interpersonal interaction. Finally, study 3 shows that this "social cost of consumption" extends to prosocial behavior, as well, with socially excluded individuals being less likely to engage in prosocial behavior when presented a humanized version of a consumer product.

Literature Review

Needs are defined as a set of inherent, universal requirements for which satisfaction is deemed necessary for survival and well-being. In addition to physiological needs including food, water, and shelter, individuals also need to fulfill social needs such as status, behavioral confirmation, and affection (Lindenberg, 2001; Ormel et al., 1999; Steverink and Lindenberg, 2006). All three needs are, or are related to, emotional states including pride and dominance for status, guilt and shame for behavioral confirmation, and love and compassion for affection. Of particular interest to the current essay are the latter two social needs, because while status is about differentiating oneself (i.e., moving away) or being accepted by a higher group, behavioral confirmation and affection are about fostering connections (i.e., moving toward). This fundamental need for social connection is apparent at an early age: in addition to interpersonal connections, children demonstrate social need fulfillment via non-human entities like imaginary friends and teddy bears (Gleason, Sebanc, and Hartup, 2000). The innate desire for social connection continues across the lifespan (Baumeister and Leary, 1995; Kahle, 1996; Maslow, 1943; Sheldon and Gunz, 2009).

Belk (1988) asserts that people see themselves in the products they consume and, by extension, others in the products they consume. Material objects, then, sometimes serve as symbolic representations of other people. For example, security blankets are often a proxy for a parental figure to children. From a product design perspective, the contours of a vase or bottle may explicitly look like or be made to look like a feminine figure. Gallant (1981) identifies anthropomorphism as a major type of personification whereby consumers ascribe not only

humanlike characteristics but also life (i.e., regard items as living and conscious) to either real or imagined nonhuman beings. The transference of physical traits, thought, intentionality, motivation, emotional states, and volition are all possible manifestations of this process (Epley et al., 2008; Fournier, 1998). Evidence suggests that individuals readily perceive objects as gendered (Guthrie, 2007), brands as having personality (i.e., a set of trait inferences; Aaker, 1997), and brand-related characters as human (e.g., Mr. Peanut and Aunt Jemima; Rook and Levy, 1999).

The ability of consumers to recognize products as people, in turn, influences their product appraisals and mood. For instance, one study revealed that individuals were more likely to attribute human qualities to a vehicle and to report more favorable evaluations when the target feature (i.e., the positioning of the front grill and headlights) matched their expectations of relevant human qualities (i.e., smiling vs. frowning; Aggarwal and McGill, 2007). If viewing a car head on activates neural paths associated with seeing a human face, and seeing faces results in a positive affective state, then perhaps seeing the front of a car enables some people to satiate social needs typically fulfilled by interpersonal interaction. Indeed, individuals who desire more companionship in their everyday lives may use personified products to fill perceived social voids. Research has shown that people who feel more chronically disconnected from others and lonelier anthropomorphize more than those who are more connected (Epley et al., 2008). Important to note, however, is that these prior studies focused on pets, to which personality traits are arguably more easily ascribed compared to nonliving consumer products. The present study moves beyond this prior work by exploring the domain of non-living, everyday consumer products. Additionally, whereas the previous studies focused on chronically lonely people, the present studies propose that *anyone* made to feel situationally deficient with respect to their

social needs could become more sensitive to the social cues of consumer products and, as such, those products' ability to satisfy social needs.

This last issue raises an important caveat to the current discussion: objects may satisfy social needs without a representative human link. Products do not necessarily need to *look* like people to fulfill needs often fulfilled by people. For some individuals, anthropomorphism merely facilitates the process of deriving social benefits from material goods; it is not a necessary condition. For instance, a nonsocial object that serves to alleviate fear and encourage interaction among children is their security blanket. Passman and Weisberg (1975) reported that in blanket-attached toddlers, the blanket provided security and facilitated play exploration in a novel situation just as effectively as the mother's presence. In the absence of a loving caretaker, these children successfully directed their behavior toward an inanimate substitute object to derive the comfort they desired. Similar observations have been made among nonhuman primates, where a nonsocial object (i.e., a soft piece of terrycloth which could be effectively grasped) provided comfort to infant monkeys raised without mothers (Harlow, 1958). The research team concluded that contact comfort was overwhelmingly important for the development of healthy affective responses because it provided safety for infants during times of fear, danger, and uncertainty. To reiterate, then, what matter are the *social benefits* derived from nonhuman material sources; whether or not the objects appear humanlike may be unnecessary (e.g., in the absence of a significant other, a nightlight or hugging a plush pillow may provide some of the comforts of social contact including warmth and security).

Through direct use or consumption experiences, individuals may even develop relationships with products that parallel interpersonal bonds (Aggarwal, 2004; Leiss et al., 2005). Within the consumer domain, Fournier (1998) identified brands as viable relationship partners

where one party in the exchange is a person who receives significant social benefits from the relationship. Through in-depth case studies and a review of the person-to-person relationship literature (e.g., concepts of commitment, intimacy, and love), the author built a framework for better understanding person-object interactions. The resulting typology consists of 15 consumer-brand relationship forms including arranged marriages, casual friends, courtships, flings, secret affairs, and others. For instance, a nutritionist might have a secret affair with Ben and Jerry's ice cream if he or she indulges on a regular basis. Additional research using similar qualitative methods has explored brand love or a feeling of strong emotional attachment to specific brands among satisfied consumers (Albert, Merunka, and Valette-Florence, 2008; Carroll and Ahuvia, 2006). Even though person and object processing are distinct within the human brain (Yoon et al. 2006), some propose that the same emotions engaging people in human interaction (e.g., love, belonging, concern) also engage them with products (Leiss et al., 2005). This possibility of satisfying social needs, needs typically fulfilled through interpersonal interactions, via consumer products raises an interesting question: if individuals are able to satisfy social needs with product relationships, does the primacy of social relationships with other people diminish?

Real social relationships have become digitally mediated through technology, which makes it easier for individuals to connect across physical distance. We would argue that too much reliance upon material objects to fulfill social needs may, paradoxically, be harmful to actual interpersonal relationships. As consumption increases, the distinction between person and product becomes obscured as the divergent worlds of people and products converge (Leiss et al., 2005). Leiss et al. argue further that social interactions extend to and pass through the material goods individuals possess and use. If consumers are able to fulfill their social needs through products, they may approach a state of satiation where the motivation for affiliation with others

is diminished because needs have already been satisfied (Baumeister and Leary, 1995). Maner et al. (2007) found evidence that felt social exclusion enhances the motivation to find new sources of interpersonal connection. Thus, in the domain of consumer behavior, making individuals feel socially excluded may make them more sensitive to products featuring humanlike qualities, more likely to purchase these products, and, having fulfilled their social needs through a product, less likely to engage with other people.

Recent studies have also begun to explore the direct effects of social rejection on personal spending. Specifically, studies have demonstrated that socially excluded individuals use money as a tool to build new social connections and to affiliate with others (Mead et al., 2011). These authors manipulated participants' sense of belongingness before presenting them with consumption decision tasks. Four experiments indicated that, relative to non-rejected peers, socially excluded individuals were more likely to: (1) purchase a symbolic product reaffirming in-group membership (i.e., school spirit wristbands), but no more likely to purchase practical or self-gift items (e.g., a coffee mug); (2) report spending preferences that matched those of a peer they expected to meet; (3) spend money on an unappealing food item favored by an anticipated interaction partner, but only when consumption would be public; and (4) try an illegal drug when the consumption act would be in the presence of others engaging in the risky behavior. The common thread underlying these studies is that individuals who lack social connection use products as signals in hopes of connecting with other people. Rather than using products as a means to attract people, the present research suggests that it may be possible for the socially excluded to use products in place of people to derive social benefits. To further delineate this relationship between social exclusion and consumption, the present research also explores a potential difference within the socially excluded segment. Specifically, the authors propose

greater receptivity to the same product if its humanlike qualities are more apparent, even subtly, suggesting greater sensitivity to these features for socially excluded consumers.

The extent to which people supplement human interactions with product interactions is a matter warranting careful study. What is known is that humans have social needs that are often fulfilled by other people (Baumeister and Leary, 1995; Kahle, 1996; Maslow, 1943; Sheldon and Gunz, 2009); products, however, may also be consumed for social need fulfillment (Solomon, 1983). Moreover, relationships with nonsocial objects may develop that mirror interpersonal ties (Aggarwal 2004; Fournier, 1998) and those who are well integrated in their social networks are less likely to seek additional bonds (whether they be with other people or products) relative to those who are deprived (Baumeister and Leary, 1995). Given these conclusions, it seems reasonable to suggest that when a social need exists, products may satisfy those needs in a way similar to people. When this need is fulfilled via consumer products, individuals may not seek fulfillment from other people. In essence, interchangeability implies a degree of fluidity between people and products such that both are capable of satisfying social needs. Baumeister and Leary (1995) proposed, but never tested, that social relationships (including those with products) "…should substitute for each other, to some extent, as would be indicated by effective replacement of lost relationship partners and by a capacity for social relatedness in one sphere to overcome potential ill effects of social deprivation in another sphere" (p. 500). Thus, if consumers perceive a void in fulfilling social needs via interpersonal interactions, they may derive similar social benefits by forming relationships with and consuming products, particularly products with humanlike characteristics or products construed in humanlike terms. This product-as-person-proxy relationship may then come at a cost to seeking out or engaging in genuine interpersonal interaction.

Hypothesis

The authors propose a "product-as-person-proxy" hypothesis in which consumer products may serve as proxies for people with respect to fulfilling the social needs of consumers. Specifically, we first propose that individuals are more sensitive to products with subtle humanlike characteristics following incidental exposure to negative social words, words likely to cue the threat of social needs going unfulfilled, compared to control words (study 1). We then propose that socially excluded individuals given the opportunity to fulfill their social needs via a humanized consumer product will be more likely to forego an opportunity to engage in genuine interpersonal interaction (study 2) and that this effect extends to has consequences for prosocial behavior, as well (study 3). Taken together, support for the product-as-person-proxy hypothesis would suggest that consumer products fulfill social needs for consumers and can do so at the cost of true interpersonal interaction.

Study 1: Sensitivity to Social Characteristics of Products

The first step in demonstrating the proposed product-as-person-proxy hypothesis involves showing a relationship between activating threats to social need fulfillment and greater sensitivity to the humanlike characteristics of consumer products. That is, if it is true that consumers use products as proxies for people with respect to fulfilling social needs, then it is likely that consumers may be more sensitive to products with humanlike characteristics, particularly along social dimensions, when the threat to social need fulfillment is activated.

Undergraduate students ($N = 111$) participating in research studies for course credit completed what was presented to be a random series of computerized tasks. Participants were first told they would be completing a language task in which the experimenters were interested in the number of syllables present in words flashed on the screen. In reality, participants were randomly assigned to one of two conditions: the Negative Social Word condition in which participants received 40 words, 20 control words (e.g., guitar, banana, lampshade) and 20 experimental words (e.g., excluded, unaccepted, unloved) presented randomly, and the Control Word condition in which participants just received 40 control words. A pretest revealed that, when asked to identify words as being real words or non-words, participants were faster at recognizing negative social words as words but no faster at recognizing positive social words or non-social control words. This finding is congruent with both our theorizing and the findings of prior research suggesting that the threat of social exclusion, and not the activation of social constructs in general, is motivational (Maner et al., 2007). For this reason we focus only on the Negative Social Word and Control Word conditions in the present study.

Following the priming task, participants completed an ostensibly unrelated task in which they were told a company was interested in the shopping behavior of young adults. The company would present a randomly selected product on the screen, provide some product information, and ask for feedback on various questions regarding the product. All participants were actually shown a Roomba vacuum, but half the participants were randomly assigned to see the Roomba in which the product's features resembled a smiling face (i.e., the Humanlike Product condition) while the other half saw the same Roomba turned 90-degrees clockwise so that the product was identical but did not appear like a smiling face (i.e., the Non-Humanlike Product condition; see Figure III.1). The product information provided about the Roomba was identical between both

groups and consisted of general information about the product's purpose and functionality. Participants then answered several questions regarding their impressions of the Roomba including their familiarity with the product (1= very unfamiliar, 7 = very familiar), their willingness to pay for the product, how attached or dependent they might become on the product (1= very unattached, 7 = very attached), and a series of ratings regarding the following characteristics (1 = not at all, 7 = extremely): attractive, desirable, efficient, high-maintenance, reliable, stylish, unsafe, and has a mind of its own. Following these questions, participants were probed for suspicion (no one suspected a link between the priming and the Roomba survey), checked for mood differences (none emerged), and debriefed.

A 2 × 2 analysis of variance (ANOVA) revealed important initial findings consistent with our proposed hypothesis. First, a marginal main effect of word type revealed that participants primed with negative social words were likely to pay significantly more (M = \$79.07, SD = 60.04) for the Roomba than participants primed with control words (M = \$59.72, SD = 44.34; $F(1,108) = 3.70$, $p = .057$). This finding is consistent with prior research suggesting that lonely individuals often increase consumption, in general (Atalay and Meloy, 2011; Mead et al., 2011).

Second, and more pertinent to the present research, are the significant findings we found regarding the interactions between social word priming and sensitivity to the humanized characteristics of the consumer product when presented with the more humanlike version of the product. Factor analysis (varimax rotation) revealed that the attributes loaded onto three factors: utilitarian (function, efficient, reliable), aesthetic (attractive, stylish), and personality (mind of its own, unsafe). It is worth highlighting that these factors transition from more product-oriented attributes (utilitarian) to attributes that can describe both products and humans (aesthetic) to attributes that are typically reserved for human descriptions (personality). A 2 x 2 analysis of

variance (ANOVA) on the factors revealed no interaction for the utilitarian factor ($F(1,107) = .001$, $p = .99$), a marginal interaction for the aesthetic factor ($F(1,107) = 2.87$, $p = .09$), and a significant interaction for the personality factor ($F(1,107) = 3.91$, $p < .05$).

Follow up paired contrasts focused on the personality factor, specifically comparing the participants exposed to negative social words and presented with a Roomba featuring anthropomorphic features ($M = 3.91$, $SD = 1.23$). This group differed from participants shown control words and a control Roomba ($M = 3.42$, $SD = .95$; $t(107) = -1.73$, $p = .09$), and from participants shown control words and an anthropomorphized Roomba ($M = 2.98$, $SD = 1.34$; $t(107) = -2.95$, $p < .01$). A paired contrast between participants shown negative social words who saw a control Roomba ($M = 3.48$, $SD = 1.11$) and participants shown negative social words who saw an anthropomorphized Roomba was directionally supported but statistically insignificant ($t(107) = 1.38$, $p = .17$). However, to highlight the importance of the key condition of interest–the negative social words and anthropomorphic Roomba condition–paired contrasts were also conducted between the negative social words and control Roomba condition and both 1) the control word and control Roomba condition ($t(107) = -.20$, $p = .84$), and 2) the control word and anthropomorphized Roomba condition ($t(107) = -1.54$, $p = .13$). The results suggest that negative social words, alone, are not enough to produce the effects demonstrated. Instead, as predicted, it is the interaction of the negative social words with the increased sensitivity to the anthropomorphized cues that produces the effects.

The results of the initial study suggest that activating negative social constructs for participants makes them more sensitive to the social characteristics of a consumer product when the product's humanlike features are made subtly apparent. This finding is consistent with our hypothesis that a threat to social needs makes individuals more sensitive to cues in their

environment related to those needs. To extend beyond study 1, we designed a second study to take the threat to social need fulfillment from a generic activation via negative social words to a more personal manipulation: a recalled experience of social exclusion. We predicted that this more immediate threat of social exclusion would be even more motivating to participants, which would make them more sensitive to humanlike cues and, as such, less likely to engage in genuine interpersonal interaction for the purpose of fulfilling social needs. This idea is explored in the following study beyond anthropomorphic design and, instead, in the context of subtle humanlike word cues.

Study 2: The Social Cost of Consumption: Cell Phone

The first study demonstrated that exposure to negative social words can make individuals more sensitive to the subtle humanlike cues of a consumer product. The purpose of the present study was to explore the potential consequence of this effect, specifically examining whether this greater sensitivity to social cues of a consumer product could lead to less actual interpersonal interaction. One limitation with the prior study was that consumers were simply exposed to the consumer product – in that case, a Roomba vacuum – and asked hypothetical questions regarding the vacuum. In the present study participants actually engage with a *real*, tangible consumer product – in this case, a cellular phone – and are asked real, applicable questions about the phone carefully written to elicit humanlike qualities or not (the control condition).

Online participants completing studies for financial compensation were randomly assigned to one of two conditions as part of a study regarding people's ability to recall past

events: the Social Exclusion condition, in which participants wrote about a time they were excluded at a very important social event, or a neutral control condition, in which participants were simply asked to report what they did yesterday. Following this memory study, participants were then told they would be completing an ostensibly unrelated consumer focus group regarding cellular phones. Participants were directed to retrieve their cellular phones and to keep their cellular phone out as they completed the rest of the task. Participants were asked first if they owned a cellular phone. Only those participants who answered yes were directed to the rest of the study ($N = 105$; 55.1% female; $M_{age} = 28.72$, $SD_{age} = 6.55$), whereas the others were directed to a different study.

Participants were directed to hold their phone in the palm of their hand and asked to indicate the size of the phone based on whether it was wider than, smaller than, or the same width as their four fingers (excluding their thumb) when resting in their palm. This was done to ensure engagement with the product, as we did not care about the size of their phone. Following this participants were randomly assigned to one of two question conditions: humanized or control. Both sets of questions included 10 questions pertaining to the design, sound, functionality, connectivity, user interface, camera, applications, battery life, alarm, and security of their phone. The difference was that the questions in the humanized condition were written with a deliberately humanized phrasing—e.g., "How would you rate the overall body and design of your phone (i.e., the body, the weight, the curves)?" and "How would you rate how well your phone does work? Does the phone perform tasks easily?"—while questions in the control condition were written with a deliberately neutral phrasing—e.g., "How would you rate the overall design of your phone (i.e., the case, the shape, the edges)?" and "How would you rate the functionality of your phone? Does the phone allow you to complete tasks easily?" Following

these questions, participants were told that most cellular phone bills are based on monthly figures and were asked to estimate the amount of time per day, in minutes, they estimated they would spend talking to family and friends in the upcoming month on a slider scale (from 0 to 100). Following this, demographic information was collected including a self-reported measure of participants' general mood (-5 = very negative mood, +5 = very positive mood; recoded to a 1-11 scale for analysis). Participants were then debriefed and rewarded credit for their participation.

Interestingly, social exclusion had a significant effect on mood such that participants in the social exclusion condition reported a significantly lower mood ($M = 6.42$, $SD = 2.50$) than participants in the control condition ($M = 8.63$, $SD = 2.06$; $F(1,103) = 24.62$, $p < .001$). Furthermore, reported mood had a significant effect on the amount of time participants estimated they would spend talking on the phone ($\beta = 4.03$, $p < .001$), such that participants reporting a more positive mood estimated spending more minutes talking on the phone than participants reporting a more negative mood. A bootstrapping mediation test confirmed this relationship such that general mood mediated the relationship between the social exclusion manipulation and the estimated time spent on the phone (95% CI: 1.71, 12.49; Preacher and Hayes, 2008).

If the product-as-people-proxy effect is, in fact, due to differences in mood, then one would expect that participants made to feel socially excluded, and thus in a worse mood, will estimate spending less time on the phone, in general, compared to participants in the control condition. However, the results of a 2 × 2 ANCOVA of social exclusion condition (i.e., Social Exclusion vs. control) and cell phone question type (i.e., humanlike questions vs. control questions), controlling for potential differences due to whether the phone was a smart phone or not, revealed a marginally significant interaction ($F(1,93) = 2.76$, $p = .10$; see Figure III.2) suggesting a story consistent with our product-as-person-proxy hypothesis. Specifically,

although socially excluded participants reported lower mood than the control participants and there was no mood difference within the socially excluded conditions regardless of whether they received the humanized questions (M = 6.41, SD = 2.65) or not (M = 6.43, SD = 2.31; $t(94)$ = -.03, p = .97), the socially excluded participants given humanized questions estimated they would spend *less* time on the phone (M = 33.76, SD = 30.73) than their socially excluded counterparts given neutral questions (M = 57.00, SD = 63.15; $t(94)$ = 1.68, p = .10). Mood did not mediate the interaction of exclusion and phone type on estimated time. Instead, the pattern of results suggests a story aligned with our hypothesis that humanized consumer products can serve as a facilitative buffer for socially excluded individuals who then, subsequently, need less genuine interpersonal engagement to fill their social needs. Although participants in both socially excluded conditions reported lower mood than the control conditions, only those socially excluded participants *not* asked humanized questions about their phones anticipated a need for the social engagement provided via telephone calls. Socially excluded participants asked humanized questions about their phone did not need such social engagement provided via telephone calls and, as such, estimated far less time spent on the phone for the upcoming month, estimates comparable to participants in the control, non-exclusion condition.

The current study contributes to our broader set of studies and demonstrates robustness of the effect in a variety of ways including the use of a different consumer product (cellular phone) and a different level of product interaction (tangible engagement vs. mere exposure). Interestingly, participants made to feel socially excluded but randomly assigned to a humanized consumer product condition reported less engagement with other people thus highlighting the potential social cost of consumption. One outstanding question is whether this social cost extends

beyond interpersonal interaction and into a different, but related, domain of social interaction: prosocial behavior.

Study 3: The Prosocial Cost of Consumption

The previous study provided support for the idea that socially excluded individuals are less likely to engage with other people after being presented a product, which, in that case, was construed as being more humanlike based on the way questions regarding the product were subtly worded. A potential extension of this social cost effect involves a possible cost to prosocial behavior. Prior research shows that socially excluded individuals, when provided an opportunity to elicit positive emotion by touching a stuffed teddy bear, are more likely to engage in prosocial behavior (Tai, Zheng, and Narayanan, 2011). However, the product-as-person-proxy hypothesis suggests a different outcome that does not rely on emotion or affect. Specifically, if prosocial behavior is an opportunity for individuals to connect socially to others or to society more generally (DeWall and Richman, 2011), then the product-as-person-proxy hypothesis suggests that socially excluded individuals who engage with a humanlike consumer product will be *less* likely to engage in prosocial behavior than socially excluded participants who engage with a control, non-humanlike version of the same consumer product. Thus, the purpose of the current study is to explore this potential prosocial cost consequence of the product-as-person-proxy hypothesis.

Online participants (N = 150; 60.0% female; M_{age} = 29.46, SD_{age} = 6.93) completing studies for financial compensation were provided the same study described in the prior study

with only a few changes. First, the dependent variable of interest for the present study was a commonly used measure of prosocial engagement gauging participants' willingness to complete more studies for no additional compensation (Mortensen and Cialdini, 2009). Following this, participants completed an eight-question social assurance scale (Lee and Robbins, 1995) on which a higher score indicates a greater need for social assurance while a lower score indicates less of a need for social assurance. All items (e.g., "My life is incomplete without a buddy beside me"; $\alpha = .85$) were answered on 7-point scales (1 = strongly disagree and 7 = strongly agree). We included this measure to explore process for the product-as-person-proxy hypothesis: socially excluded individuals provided a humanized consumer product should 1) report a lower need for social assurance as the humanized consumer product fulfills those social needs and, subsequently, 2) should be less likely to engage in prosocial behavior. Socially excluded participants provided a non-humanized phone should report a higher need for social assurance and, subsequently, should be more likely to engage in prosocial behavior.

As predicted, the results of a 2 × 2 ANOVA of social exclusion condition (i.e., Social Exclusion vs. control) and cell phone question type (i.e., humanlike questions vs. control questions) revealed a significant interaction with respect to social assurance ($F(1,146) = 7.20$, $p < .01$; see Figure III.3). Planned contrasts revealed that socially excluded participants randomly assigned to the humanlike questions condition reported a significantly lower need for social assurance ($M = 3.00$, $SD = 1.08$) compared to socially excluded participants randomly assigned to the neutral questions condition ($M = 3.64$, $SD = 1.27$; $t(146) = 2.11$, $p < .04$). Conversely, participants in the control essay condition reported lower need for social assurance when randomly assigned to the neutral questions condition ($M = 3.15$, $SD = 1.31$) compared to those in the humanlike questions condition ($M = 3.63$, $SD = 1.37$; $t(146) = -1.67$, $p < .10$). Furthermore, a

significant relationship existed between need for social assurance and willingness to complete more surveys without additional compensation ($\beta = .26$, $t(148) = 2.73$, $p < .01$) such that participants indicating a greater need for social assurance were more likely to volunteer to complete additional surveys for no extra compensation.

Taken together, the prior findings suggest that socially excluded participants asked questions about their cellular phone with humanized wording would be less likely to engage in prosocial behaviors as a result of a lower need for social assurance. To test the proposed model directly, moderated mediation procedures were used to estimate the conditional indirect effect of essay condition on prosocial behavior through social assurance (Hayes, 2012; Preacher, Rucker, and Hayes, 2007). Specifically, we tested whether the relationship between essay condition and prosocial behavior was mediated, and whether the indirect effects differed by phone question type. We specified a model where both the effects of essay on the mediator and the direct effect of essay on prosocial behavior are estimated as moderated by the phone question type—either humanized questions or neutral, non-humanized control questions (model 8 in Hayes, 2012; model 2 in Preacher et al., 2007; see Table III.1).

To test our key prediction, we assessed the conditional indirect effects of essay on prosocial behavior through social assurance for the two types of questions. Results indicate a significant indirect effect for social assurance among participants who responded to humanized phone questions ($\beta = -17$; 95% CI: -.43, -.01) but not participants who responded to neutral phone questions ($\beta = .14$; 95% CI: -.03, .35). Thus, social assurance drives the effect of essay condition on prosocial behavior, but only among participants who are thinking about their cellular phone in humanlike terms. If socially excluded participants are able to fulfill social

needs by construing a consumer product as humanized, then they may actually be less likely to engage in prosocial behavior.

Discussion

Whether talking about their cars or beds, their homes or their household items, consumers often talk about products using terms, constructs, and ideas typically reserved for interpersonal relationships. We love our cars to the point of giving them meaningful names, we mourn the loss of our cellular phone after dropping it in a swimming pool, and we worry about the fact that our computers seem to have minds of their own, particularly when they malfunction. What is surprising, and what is demonstrated for the first time in the present essay, is that consumer sensitivity to these humanlike qualities of products is greater when people are made to feel socially excluded or when the threat of unfilled social needs is activated. Even more alarming is the finding that, at least in some instances, consuming a product whose humanlike characteristics are made subtly apparent may come at the cost of genuine interpersonal interaction and prosocial behavior.

Taken together, the results of three studies support our product-as-person-proxy hypothesis such that when threats to an individual's social needs are elicited, either implicitly (study 1) or explicitly (studies 2-3), participants become more sensitive to the humanistic cues of consumer products (study 1), become less likely to engage with other people after being presented a humanized consumer product (studies 2), and become less likely to engage in prosocial behavior when construing a consumer product in a humanlike manner (study 3).

The findings of the three studies demonstrate, for the first time, that consumer products can and do, in fact, satisfy human social needs in ways that had been discussed but never put to the test (Baumeister and Leary, 1995). This finding, in light of the neural research on the dissociation of brand and person judgments (Yoon et al., 2006), warrants an important caveat: although we demonstrate the ability for humanized consumer products to fulfill social needs typically filled by human interaction at the expense of genuine social interaction, this does not mean that consumer products and humans are perfectly substitutable. Although it may very well be the case that extreme examples of the product-as-person-proxy phenomenon results in one-to-one product/person replaceability, such as cases of extreme hoarding at the cost of real relationships, it is important to note that this is likely the exception to the norm, not the norm. Instead of treating the product-as-person-proxy phenomenon so literally, the critical point of the present research is that both people *and* consumer products have the ability to fulfill innate social needs. Social need fulfillment via one route does not mean total exclusion of the other route; it simply means that once a need is fulfilled via one path a consumer may not immediately seek fulfillment of a social need via the other option. More research will have to be done in this area to figure out when, and perhaps why, fulfillment of social needs via product consumption may come at a greater cost to genuine interpersonal interaction in some contexts, or for certain consumer types, compared to others.

Another interesting contribution of the present research is that consumer products need not rely on tangible anthropomorphic features to produce the effects found herein. Indeed, as in the case of the cellular phone studies, simply framing a line of questioning about a consumer product in a way that emphasizes the product's humanlike qualities is enough to produce a similar product-as-person-proxy effect. Marketing implications range from product descriptions

(e.g., describing a product using humanlike descriptors like "warm" and "friendly" as opposed to functional descriptors like "long-battery life" and "portable") to advertising copy. This finding also contributes to theory, as prior findings found for tangible, anthropomorphic studies may very well extend to products and services that, by the nature of their design, do not lend themselves to the more tangible, anthropomorphic manipulations of car grills and Roomba vacuums.

Beyond advertising copy and product descriptions, implications of the current research extend to consumer contexts in which consumers are more or less likely to feel included or excluded. Indeed, the process of consumption, itself, can elicit feelings of social exclusion with those who "have" feeling more "included" and those who "do not have" feeling excluded. In fact, many marketing messages exploit social exclusion by making consumers feel like they are "missing out." Beyond traditional advertising, other marketing tactics also rely on highlighting in-group, out-group differences. Loyalty programs are an example of this, including status programs for airlines, hotels, and credit cards. If a consumer feels excluded because he or she is not a member of the American Airlines AAdvantage program, a Starwood Preferred Guest, or the holder of an exclusive Black American Express card, might he or she then be tempted to gravitate towards humanized goods? The current findings suggest this would be the case, particularly at the moment of exclusion, but future research is needed to understand the limitations and boundary conditions for the phenomenon.

In closing, as more consumer products blur the line between product and person, be it avatars, smart cars, or responsive technology – such as Apple's voice-activated Siri virtual assistant or the integration of Microsoft's Kinect 3D human movement technology in its Xbox gaming systems, laptop computers, and televisions – understanding the product-as-person-proxy

phenomenon is more critical than ever before. The current research provides initial support for a future stream of research exploring how consumer products and people may both serve to fulfill the innate social needs of consumers and may do so at the expense of one another.

Table III.1 Results from Moderated Mediation Test

	Mediator variable model: Need for social assurance			Outcome variable model: Prosocial behavior		
	Beta	SE	*t*	Beta	SE	*t*
X: Essay condition	-.07	.21	-.34	-.11	.25	-.46
W: Question type	-.09	.21	-.42	.18	.25	.73
X*W	-1.12	.42	-2.68**	.41	.51	.80
M: Social assurance				.28	.10	2.82**

Conditional indirect effects of X and Y by question type

Question type	Effect	Boot SE	Boot LLCI	Boot ULCI
Humanized	-.17	.11	-.436	-.013
Neutral	.14	.10	-.028	.346

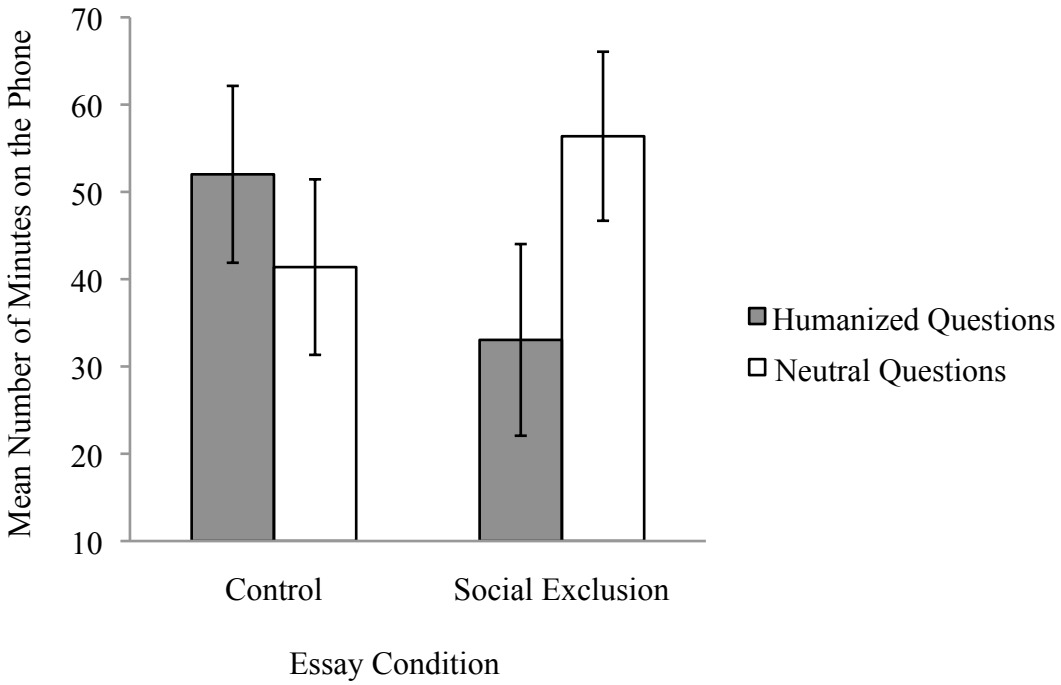
Note: **$p \leq .01$; X = independent variable, W = moderator, M = mediator

Figure III.1 Roomba Vacuum Cleaner Images

(a) Humanized Roomba

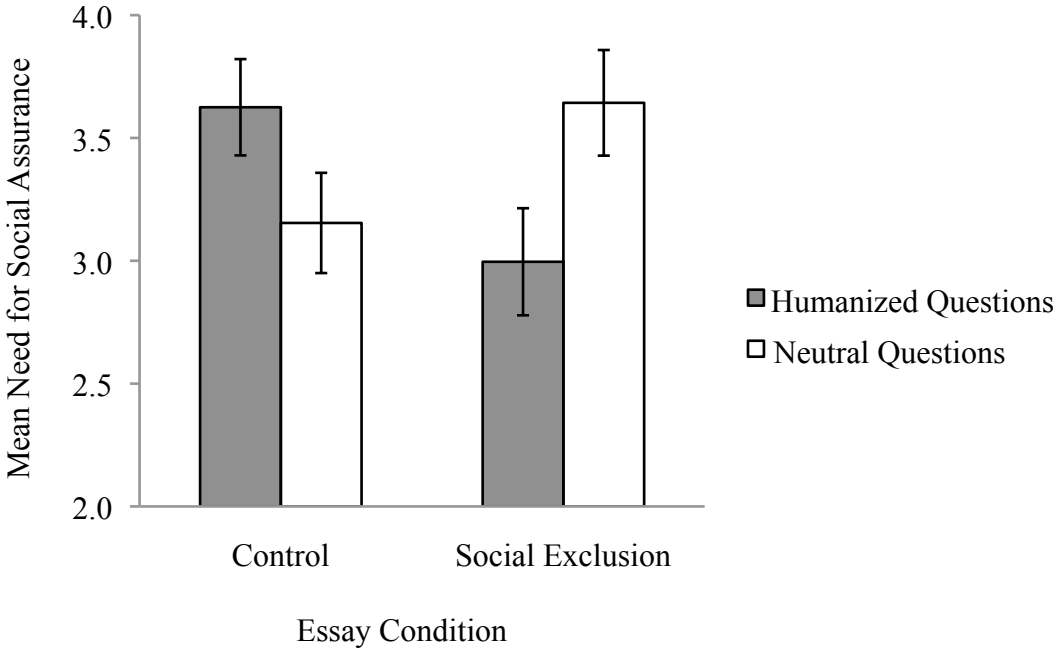
(b) Control, Non-Humanized Roomba

Figure III.2 Mean Estimated Number of Minutes on the Phone



Participants' mean number of minutes as a function of essay condition and product version, study 2. Error bars represent one standard error above and below the mean.

Figure III.3 Mean Need for Social Assurance



Participants' mean need for social assurance as a function of essay condition and question type, study 3. Error bars represent one standard error above and below the mean.

CHAPTER IV

Sleight of Mind:
The Interaction of Conscious Goal Construal and Nonconscious Cues in Consumer Contexts

"Upon deeper inspection there appears (to be) no contrast between the conscious and the unconscious, that both cooperate for a higher purpose…"
-Alfred Adler

Many consumption decisions involving products and services are goal-directed (Bettman, 1979; Bettman, Luce, and Payne, 1998). Such decisions can be difficult especially when goals conflict with one another (Emmons, King, Sheldon, 1993). Consider, for example, food options on a menu. If an individual possesses the goal to be healthy as well as the goal to indulge in delicious food, then a menu pitting healthful options against indulgent options is likely to elicit conflict for the consumer. Beyond options in a consideration set, even the decision to spend money on a desired product versus the decision to save money for a rainy day can elicit an experience of conflict (Prelec and Loewenstein, 1998). Thus, experiences of conflict are prevalent in consumer contexts.

When consumers are conflicted with respect to choice, the information search literature suggests these consumers actively seek out more information to help them make a decision (Urbany, Dickson, and Wilkie, 1989). Marketers, knowing this, provide plenty of information in the form of traditional advertisements, point-of-purchase displays, and other marketing executions. In fact, some estimates claim that the average person is exposed to between 3,000

and 5,000 marketing stimuli per day (Kardes, Cronley, and Cline, 2010; Walker Smith, Clerman, and Wood, 2004). Consciously processing thousands of marketing stimuli would be a debilitating, impossible endeavor; however, research suggests that the majority of our processing actually occurs at a nonconscious level (Zaltman, 2003). Although it is well known that consumers seek out additional information at the conscious level when conflicted, no one has yet explored what occurs at a *nonconscious* level. Might consumers be more sensitive to information in their context, including nonconscious cues, when they are consciously conflicted? The present research aims to answer this question while also exploring the interplay between conscious and nonconscious processes in consumer contexts.

Integrating the literature on nonconscious processing and recent neurobiological research, we consider the relationship between conscious and nonconscious processes and propose that consumers who consciously construe their consumption goals as conflicting will be more sensitive to nonconscious cues in their context compared to consumers consciously construing the same goals as compatible (studies 1a and 1b). Furthermore, we propose that consumers construing their consumption goals as conflicting are not simply more sensitive to *any* nonconscious cues in their context but, instead, are only sensitive to nonconscious cues relevant to the domain of conscious goal conflict (studies 1a-1c). Finally, we propose that this greater sensitivity to relevant nonconscious cues is most likely to manifest when goals are deemed to be of equal importance (studies 2 and 3) and not when one goal dominates another with respect to importance. Five studies demonstrate support for the proposed effect and highlight the importance of considering the effects of conscious goal states on nonconscious processes in consumer settings.

Literature Review

Consumer research on nonconscious processing has repeatedly demonstrated how contextual cues influence behavior without individuals' conscious awareness (Bargh, 2002; Chartrand and Fitzsimons, 2010; for a review see Dijksterhuis, Chartrand, and Aarts, 2007). Effects are not only robust but also manifest in a variety of domains. For example, subtle exposure to luxury or discount brand cues yields luxurious or thrifty purchases (Chartrand et al., 2008), exposure to positively- or negatively-construed repetition cues produces loyalty or variety seeking, respectively (Fishbach, Ratner, and Zhang, 2011), and exposure to superstitious cues leads to risk aversion and choice of products associated with positive beliefs (Kramer and Block 2007).

However, despite many studies demonstrating that subtle cues influence behavior nonconsciously, results are not always consistent: cues have an impact in some contexts but not in others and sometimes the same cues even produce opposite behavioral results (Chartrand, Dalton, and Fitzsimons, 2007; Fitzsimons and Bargh, 2003; Martin, 1996). This leaves a gap in the understanding of exactly *how* and *when* contextual cues influence choice and behavior. Some research has explored these discrepancies by looking at how the same cue can have different meanings to different people (Wheeler and Berger, 2007), but what remains unclear is when cues are more or less effective in influencing behavior more generally.

One possible explanation for why nonconscious cues are more or less effective in influencing behavior rests in context sensitivity; that is, whether an individual is momentarily more or less sensitive to his context. To date, nonconscious processing is typically studied using a priming paradigm that largely does not account for potential differences in context sensitivity. However, research from evolutionary and developmental psychology suggests context sensitivity

can vary with respect to something as fundamental as basic biology (Boyce and Ellis, 2005). Consider, for example, situations of fight or flight in which individuals become keenly aware of their context due to a sudden increase of stress. Thus, the idea that people may be more or less sensitive to context in any given moment is reasonable.

In addition to stress, there may be other remnants of adaptive evolutionary functions that make individuals more or less sensitive to their contexts. If that is the case, then it is likely that the brain is wired to accommodate varying sensitivity to context. Indeed, recent neuroscience research exploring the relationship between top-down processes and bottom-up processes in the brain suggests this may be the case. In this research, top-down processes refer to the deliberate, conscious processes of the brain (e.g., thinking about goal conflict, particular emotions, specific cognitions) while bottom-up processes refer to the nonconscious, automatic processing of stimuli in one's context and incoming sensory information. For decades, research on automaticity has assumed a distinct, independent separation between top-down and bottom-up processes in the brain (Posner and Snyder, 1975) despite some early arguments to the contrary (Neumann, 1984). However, the recent neuroscience research suggests that top-down processes also modulate the nonconscious, bottom-up brain processes (Kiefer, 2012). The proposed mechanism for this involves top-down processes making pathways associated with processing relevant stimuli at a nonconscious level that become more sensitized – specifically via neuronal firing – while pathways associated with processing irrelevant stimuli at a nonconscious level become less sensitized. Thus, even at the neural level, the interplay of conscious and nonconscious processes suggests the possibility for differential sensitivity to cues in one's context.

One potential top-down modulator of bottom-up processing worth exploring is that of conflict detection and resolution. Specifically, the conflict-monitoring model (Botvinick et al.,

2001) demonstrates a monitoring system activated by conflict in which the anterior cingulate cortex (ACC) signals to the prefrontal cortex (PFC) thereby enhancing task-relevant information processing pathways. This, in turn, leads to more efficient resolution of conflict going forward, a phenomenon referred to as "conflict adaptation" (Horga and Maia, 2012). Although the conflict-monitoring model primarily been explored at the conscious level, the idea that relevant processing pathways become more sensitive is consistent with the prior finding of the modulating effect top-down processes can have on bottom-up, nonconscious processes.

Given the prevalence of conflict elicitation in consumer behavior, it makes sense to consider how conscious goal construal–whether goals are perceived as being compatible or conflicting with one another–might interact with nonconscious cues to affect behavior. Although prior consumer research has explored various sources and outcomes of conflict in consumption contexts, such as the paradox of choice (Iyengar and Lepper, 2000) or what happens when the "heart and mind" are in conflict (Shiv and Fedorikhin, 1999), no consumer research to date has considered the extent to which conscious goal construal might make people more or less sensitive to the influence of nonconscious cues.

Hypotheses

Integrating the neuroscience research with the consumer literature exploring nonconscious effects on choice and behavior, we propose several hypotheses. First, an experience of conflict elicited in a consumer context should make participants more sensitive to nonconscious cues relevant to the domain of that conflict. Sensitivity, in this instance, would be indicated by the cues being more likely to have a cue-consistent effect on choice or behavior.

This effect should only manifest for participants construing consumer goals as conflicting and not for consumers construing the same goals as compatible or for consumers not thinking about their consumption goals at all. We refer to this phenomenon as the Sleight of Mind effect, as consumers who are consciously construing their consumption goals as conflicting are unaware of the increased influence of nonconscious cues to which they are exposed on their subsequent behavior.

More formally, we propose the following hypotheses:

H1a: When conscious goals are construed as conflicting, consumers are more sensitive to nonconscious cues that are *relevant* to the conscious goals compared to nonconscious cues that are *irrelevant* to the conscious goals.

H1b: When conscious goals are construed as compatible, consumers do not exhibit differential sensitivity to nonconscious cues regardless of their relevance/irrelevance.

With the understanding that goals can vary in their importance to individuals and that goals of varying importance can be construed as conflicting or as compatible with one another, it is possible that the Sleight of Mind effect is more likely to manifest in some situations rather than others. Specifically, if it is the case that one goal in conflict with another goal is simply more important to an individual, it seems less likely that the Sleight of Mind effect will manifest, as individuals should just make a choice or behave in accordance to whatever goal is more important to them. More formally:

H2a: The Sleight of Mind effect manifests when goals are deemed equally important to the consumer.

H2b: When one goal is more important than another, the Sleight of Mind effect will not manifest, and choice/behavior will correspond to whatever goal is more important to the consumer.

A series of five studies test these hypotheses. First, study 1a provides basic support for the Sleight of Mind effect such that individuals construing their conscious goals to spend and to save as conflicting are more sensitive to nonconscious cues in their context. Study 1b replicates the findings of study 1a in a different goal domain: competing and cooperating. Study 1c then builds on the findings of studies 1a and 1b by garnering evidence that the relevance of the nonconscious cues with respect to the domain of conscious goals being considered matters: individuals are only more sensitive to *relevant* nonconscious cues but not *irrelevant* nonconscious cues. After establishing support for the Sleight of Mind effect, study 2 demonstrates when the effect is more or less likely to manifest, specifically highlighting that goals need to be of equal importance for the effect to occur. Otherwise, if one goal is deemed more important than the other, individuals will simply respond to the more important goal. Finally, study 3 replicates the Sleight of Mind effect in another consumer domain, and demonstrates consequences of the Sleight of Mind effect on actual consumption behavior.

Study 1a: Goal-Relevant Cues: Spend v. Save

To provide initial evidence for the proposed interactive relationship between conscious goal construal and nonconscious cues, we asked participants to consider their spending goals and saving goals. Spending and saving were selected based on a pretest intended to identify goals that are important to the target population being studied. Participants were randomly assigned to one of three conditions – conscious goal conflicting, conscious goal compatible, or control. In the first two conditions, they were asked to write about how their spending and saving goals were conflicting or compatible, respectively. Participants in the control condition were asked to

write about their typical day. Participants were then subtly exposed to nonconscious cues related to spending or saving and next given a situation in which they could choose to spend or to save. Support for the Sleight of Mind effect would consist of the nonconscious cues exerting a stronger effect for participants who wrote about how their conscious goals were conflicting – that is, spending cues should lead to more spending, saving cues should lead to more saving –and no difference for participants in the conscious goal compatible or control conditions.

Participants (n = 90, M_{Age} = 28.58, 57% female) in an online panel completed a series of ostensibly unrelated consumer surveys for financial compensation. The series of surveys was designed to elicit conscious goal conflict/compatibility, to expose participants to nonconscious cues, and then to test for an effect of the interaction between conscious goal construal and nonconscious cues. First, participants were told that a consumer research organization was interested in understanding the goals people had with respect to spending and saving money. In the conflicting conscious goal construal condition, participants were told the following:

> "People often have the goal to save money for a rainy day as well as the goal to spend money on necessities or items they would like to buy. Often, trying to both save money and spend money at the same time is **extremely difficult**. Below, please write a bit about a **SPECIFIC EXAMPLE** from your life where the goal to save money and the goal to spend money **CONFLICT** with one another (i.e., where doing one makes the other one harder, both cannot be done at the same time). Be as detailed as possible."

In the conscious goal compatible condition, participants read an identical prompt, but instead of being presented as conflicting, spending and saving goals were presented as being "compatible," where "doing one helped you do the other more easily" and it was noted that doing both was "extremely easy" to do. Participants were again asked to elaborate on a specific example in their life in which their spending and saving goals were compatible with one another. In a third condition–the control condition–participants were simply told that the consumer

research firm was interested in knowing what their average day was like and, as such, were asked to describe their typical day.

Following this first component, participants were directed to an ostensibly unrelated word task. The task, which was really the scrambled sentence task, involved participants forming four-word sentences from groups of five words. Unbeknownst to participants, however, they were randomly assigned to one of two nonconscious cue conditions: spending or saving. In the spending cue condition, participants saw a string of words like "*will*, *the*, *melt*, *indulge*, *ice"* which they then turned into the sentence, "The ice will melt." In the saving cue condition, the word *indulge* was replaced with *restrain*. In total, participants in either condition saw 30 sentences, 20 of which contained nonconscious cue words (spend: *buy, obtain, immediate*; save: *forego, abstain, defer*) and 10 of which contained the same neutral words (neutral: *cheese, television, backpack, jacket*).

Following the word task, participants were asked to read a newspaper article and to answer questions regarding the article. The purpose of this task was to introduce a five-minute delay into the process, as previous research on nonconscious processing suggests that if effects manifest following a short delay they are motivational or goal-oriented in nature as opposed to mere semantic primes (Sela and Shiv, 2009; Chartrand et al., 2008; Förster, Liberman, and Friedman, 2007). The article was about cloud computing and did not mention anything about saving or spending. The page containing the article and questions was programmed so that participants had to spend exactly five minutes on the page. The page then advanced automatically.

After reading the article, participants were presented with the final survey. This survey, identical for all participants, contained our key dependent measure. Participants were told to

imagine their bank made an error in their favor resulting in an extra $100 being deposited into their bank account. The bank, recognizing the error and apologizing for the inconvenience, allowed the participants to keep the $100 as a token of appreciation for their business. Participants were asked to indicate how much of this $100 they would save and keep in the bank and how much of the $100 they would spend. Following this task, participants were asked to indicate how difficult it was for them to spend and to save money simultaneously (9-point scale: 1 = extremely difficult, 9 = extremely easy), completed a funneled debriefing (all participants saw no link among the studies' components), and were compensated.

Manipulation checks revealed that the conflict/compatibility manipulation worked such that participants randomly assigned to the conflicting conscious goal construal condition reported greater conflict (M = 3.11, SD = 1.83) with respect to holding spending and saving goals simultaneously compared to participants in either the compatible condition (M = 5.48, SD = 2.22) or control conditions (M = 5.86, SD = 1.98; $F(2, 87) = 15.54$, $p < .001$), which did not differ from each other ($F < 1$).

The results of a 3 (conscious goal construal: conflicting vs. compatible vs. control) x 2 (nonconscious cues: spending vs. saving) between group ANOVA revealed the expected overall effect ($F(2, 84) = 4.08$, $p < .02$). Follow up paired contrasts revealed significant simple effect differences due to nonconscious cue exposure within the conscious goal conflicting condition ($F(1,84) = 5.01$, $p < .03$), but not within the conscious goal compatible ($F(1,84) = 1.66$, $p = .21$) or control ($F(1,84) = 1.30$, $p = .20$) conditions. The results provide support for hypotheses 1a and 1b.

Interestingly, the nonconscious cues in the control condition did not produce facilitative priming effects. While this was not the focus of this study, the lack of a difference here serves to

highlight an important point: straightforward priming effects are not always consistent. As previously mentioned, the same primes sometimes produce an effect, sometimes produce no effect, and, when effective, can either lead to facilitative (i.e., prime-consistent) or reactive (i.e., prime-opposite) effects. It would have been unsurprising for the spending and saving cues to elicit greater spending and saving, respectively, in the control condition, but the fact that this did not occur underscores the need for a better understanding of how nonconscious cues systematically affect choice and behavior.

The results from study 1a provide support for the Sleight of Mind phenomenon: construing conscious goals as conflicting with one another (vs. compatible) makes an individual more sensitive to the nonconscious cues in his context as evidenced by the cues' subsequent effect on behavior. Also, that the difference occurs following a five-minute delay suggests it is motivational. However, it is possible that the results obtained are specific to the goal domain selected for this study: spending and saving. To test for the general robustness of the effect study 1b attempts to replicate the effect in a different goal domain often used in the nonconscious processing literature: competing and cooperating.

Study 1b: Goal-Relevant Cues: Compete v. Cooperate

The purpose of study 1b was to replicate the findings of study 1a in a different goal context to show that the phenomenon is not limited to specific goals but rather is a more general phenomenon motivated by an individual's construal of held goals as being in conflict with one another.

Participants (n = 92, M_{Age} = 32.42, 63% female) completing studies in an online panel for financial compensation completed a study whose design was identical to that of study 1a with three differences. First, participants randomly assigned to construe their goals as competing or cooperating (or were asked to write about their average day in the control group). The domain of competing and cooperating was chosen given the prevalence of these goals in the nonconscious processing literature (Bargh et al., 2001). Second, the experimental words in the ostensibly unrelated word task were changed to reflect words associated with either competing (*compete, oppose, rival, contest*) or cooperating (*cooperate, agree, acquiesce, alliance*). Third, following the same five minute delay task as in study 1a, participants were provided a scenario regarding their willingness to compete or to cooperate with others to generate a marketing campaign. The key dependent variable of interest was a self-report question on one's general tendency to be competitive or cooperative (9-point scale: 1 = definitely competitive, 9 = definitely cooperative) analogous to study 1a's self-report on spending and saving. Participants were also asked a manipulation check question, as before, regarding the degree to which they felt their goals of competing and cooperating were compatible or conflicting (9-point scale: 1 = extremely compatible, 9 = extremely conflicting). Participants then completed a funneled debriefing and were subsequently awarded payment for completion of the study.

Manipulation checks revealed that the conflict/compatibility manipulation worked such that participants randomly assigned to the conflicting conscious goal construal condition reported greater conflict (M = 5.43, SD = 2.31) with respect to holding competing and cooperating goals simultaneously compared to participants in either the compatible condition (M = 4.08, SD = 1.50) or control conditions (M = 4.26, SD = 1.80; $F(2, 89) = 4.30$, $p < .02$), which did not differ from each other ($F < 1$).

The results of a 3 (conscious goal construal: conflicting vs. compatible vs. control) x 2 (nonconscious cues: spending vs. saving) between group ANOVA revealed the expected overall effect ($F(2,87) = 2.38$, $p < .09$). Follow up paired contrasts revealed significant simple effect differences due to nonconscious cue exposure within the conscious goal conflicting condition ($F(1,86) = 4.81$, $p < .03$), but not within the conscious goal compatible ($F(1,86) = 0.19$, $p = .66$) or control ($F(1,86) = 0.67$, $p = .42$) conditions. The results provide additional support for hypotheses 1a and 1b and suggest that the domain of goal conflict does not matter.

Although the results of studies 1a and 1b shed some light on why nonconscious cues may be more effective in some contexts than others, they do not speak to the moderating role of the *relevance* of nonconscious cues to the conscious goals being considered. It could be that individuals simply become more sensitive to all nonconscious cues in their environment when consciously experiencing conflict. In addition, an alternative explanation could be that participants randomly assigned to construe their goals as conflicting endure a bigger drain on their cognitive resources, which might make them more susceptible to the influence of any nonconscious cues regardless of relevance. However, keeping in mind the neuroscience research suggesting that top-down processes increase sensitivity of processing pathways for *relevant* stimuli (and decrease sensitivity of processing pathways for *irrelevant* stimuli), we predict that relevance plays a key role. Specifically, we propose that individuals are only sensitive to nonconscious cues relevant to the domain of goals about which they are conflicted; other, irrelevant cues are disregarded. Thus, the purpose of study 1c is to explore directly this issue of nonconscious cue relevance

Study 1c: Goal-Irrelevant Cues

Studies 1a and 1b provided support of the proposed Sleight of Mind effect: participants construing their conscious goals as conflicting were more affected by the nonconscious cues to which they were exposed. However, the prior studies only consider what happens when the nonconscious cues, spending and saving cues or competing and cooperating cues, respectively, are relevant to the domain of conscious goals being consciously considered. Thus, the purpose of study 1c is to test the role of relevance. Specifically, the nonconscious cues in study 1c consist of cues (competing and cooperating cues) that are irrelevant to the goals put in conflict with one another (spending and saving) to demonstrate that the Sleight of Mind effect manifests only when nonconscious cues are relevant to the domain of conscious goals.

Although it may seem improbable that individuals can discern the relevance of nonconscious cues implicitly, extant findings suggests otherwise. For example, research has shown that individuals' implicit affect differs depending on whether cues in their context are nonconsciously perceived as goal-relevant or not (Ferguson, 2008). Other research suggests that the nonconscious mind is every bit as flexible, deliberative, and sophisticated as its conscious counterpart in discerning relevance with data even suggesting that the nonconscious often acts *first* before the conscious mind is able to realize or reflect on a situation (Bargh and Morsella, 2008). In fact, Unconscious Thought Theory (UTT) rests on the premise that nonconscious processes are well-adapted for dealing with difficult and complex decisions (Dijksterhhuis and Nordgren, 2006), quite contrary to other prior research suggesting that only simple decisions rely on nonconscious processing. Thus, it is possible that individuals can nonconsciously determine

cue relevance. Study 1c replaces relevant nonconscious cues with irrelevant nonconscious cues to test whether the Sleight of Mind effect persists.

Participants (n = 134, M_{Age} = 28.22, 50% female) in an online panel completing studies for financial compensation completed a study that was a deliberate hybrid of studies 1a and 1b. Having demonstrated the Sleight of Mind effect in both the domains of spending and saving as well as competing and cooperating, the design of study 1c first had participants construe their spending and saving goals as conflicting or compatible with one another (or neither in the case of the control condition) and then presented participants with competing and cooperating cues, cues irrelevant to spending and saving. The dependent variable of interest was identical to the measure captured in study 1b. If the Sleight of Mind effect were due to a general sense of conflict among goals or even a drain on cognitive resources stemming from construing goals as conflicting, then construing any two goals as conflicting should produce greater sensitivity to nonconscious cues, regardless of relevance. However, if the relationship between nonconscious cue sensitivity and conscious goal construal serves a functional purpose, then it stands to reason that relevance between the domain of goals being consciously construed as conflicting and the nonconscious cues to which a participant is exposed matters. Following the task, participants completed a manipulation check on the degree of conflict/compatibility of their conscious goals, were given a funneled debriefing, and were compensated.

Manipulation checks revealed that the conflict/compatibility manipulation worked such that participants randomly assigned to the conflicting conscious goal construal condition reported greater conflict (M = 4.56, SD = 2.24) with respect to holding spending and saving goals simultaneously compared to participants in either the compatible (M = 6.13, SD = 1.82) or

control (M = 5.64, SD = 1.82; F(2, 131) = 7.54, p < .001) condition, which did not differ from each other (F < 1).

If it is the case that construing one's conscious goals as conflicting leads individuals to be more sensitive to *relevant* nonconscious cues, then no differences should emerge when participants are exposed to nonconscious cues that are *irrelevant* to the domain of conscious goals. A 3 (conscious goal conflict: conflicting vs. compatible vs. control) x 2 (nonconscious cues: cooperate vs. compete) between subjects ANOVA revealed no significant interaction (F(2,128) = .35, p = .70) and no significant main effect of conscious goal conflict (F(2,128) = 2.06, p = .13) or nonconscious cue (F(1,128) = .62, p = .43). Taken together with the results from study 1a, study 1b results suggest that the relevance of nonconscious cues with respect to the domain of conscious goals does indeed matter, supporting hypotheses 1a and 1b.

Study 1b also allowed us to rule out of a potential alternative explanation involving cognitive or attentional resources. One could argue that the conflicting condition is inherently more demanding or taxing on mental resources. This lack of available cognitive resources might then prevent individuals from inhibiting the information from nonconscious cues, thereby eliciting stronger priming effects for participants construing their conscious goals as conflicting. If that were true, then one would expect to see differences in cue-consistent directions in the present study, but no such difference obtained.

Taken together, studies 1a and 1b provide support for the Sleight of Mind but suggest that the relevance of the nonconscious cues with respect to the conscious goals matters. When individuals construe their conscious goals as conflicting, they are more sensitive to relevant nonconscious cues but are not necessarily more sensitive to irrelevant nonconscious cues.

Having found support for the Sleight of Mind effect, a logical next question to consider is when the effect might be more or less likely to manifest. This is the purpose of the next study.

Study 2: Relative Goal Importance: Affordability v. Convenience

Studies 1a-1c provided support for the Sleight of Mind effect such that people who construe their conscious consumption goals as conflicting are more sensitive to relevant cues in their context than those who construe their conscious goals as compatible. The goals selected in the prior studies were selected given their relative equal importance for participants, but goals need not necessarily be equally important. Additionally, paired goals like spending and saving or competing and cooperating can be thought of as being at opposite ends of the same continuum. We submit however that there is no reason to expect the Sleight of Mind effect to be limited to this type of goals. Thus, the primary purpose of study 2 is to explore the Sleight of Mind effect in a domain in which consumers may have separate, distinct goals of varying importance. A secondary purpose of study 2 is to explore the ecological validity of the Sleight of Mind effect by varying the way conscious goal construal is manipulated. Finally, a third purpose of study 2 is to incorporate subliminal priming to rule out the possibility that effects are restricted to supraliminal priming used in the scrambled sentence task in studies 1a and 1b.

Undergraduate students (n = 352) in a paid subject pool completed a series of ostensibly unrelated surveys broken up by a visual acuity task. The design of the series of studies paralleled the design of studies 1a-1c. This was done deliberately to demonstrate the robustness of the phenomenon using new goal domains, a subliminal priming task, and a more ecologically valid manipulation of conscious goal conflict/compatibility (i.e., consideration sets).

For the first task, participants were told they would be reviewing apartments from several options presented in a set and selecting a few apartments for which they wanted more information. Participants were told they would eventually select available apartments from this set for their potential inclusion in a database for student housing options for summer internships. Six options were presented all at once, and each option consisted of the same apartment graphic and different ratings for both affordability and commuting as represented by a 5 star rating system. In a pretest, affordability and commuting had emerged as important factors to consider when searching for a new apartment. Participants were randomly assigned to one of two conditions: the compatible consideration set condition in which several of the options presented satisfied both affordability and commuting goals based on the five-star rating system or the conflicting consideration set condition in which none of the options satisfied both goals simultaneously and, instead, only satisfied either the affordability or commuting goal.

After selecting their apartment options, participants were told that the computer would check a database to see which apartments were still available and return with the final options shortly. In the interim, participants were directed to an ostensibly unrelated task, the visual acuity task, which in actuality served as the vehicle for nonconscious cue exposure. For this task, participants were told that researchers were interested in assessing the visual acuity of college students. The participants' task was to observe a fixation point on the screen and then, as soon as the screen changed, to press the space bar while keeping their eyes fixed on the fixation point. Unbeknownst to participants, this task was actually an adapted version of the parafoveal priming task (Bargh and Chartrand, 2000), in which words are flashed for 60 *ms* outside the participants' foveal field (associated with conscious processing) before being masked with a string of random letters. Because it has been shown that it takes nearly 140 *ms* for participants to

shift their eyes to a focal point (Rayner, 1978), it is unlikely participants viewing the fixation point would be able to read the words flashed briefly on the screen prior to masking. Indeed, in a follow-up debriefing, no participants reported seeing any actual words. Participants were randomly assigned to one of two conditions–affordability or commute–with words associated with affordability (money, cheap, economical, frugal, low-cost) or commute (convenient, distance, easy, short, travel) randomly presented on the screen for 60 *ms* in each of the four quadrants. A total of five words per condition were flashed randomly across the four quadrants, one at a time, 16 times each for a total of 80 exposures. Following this task, all participants were told they had completed the visual task and would proceed to the next unrelated survey.

The next task in the series was a filler delay task. Participants were told they would be rating a commercial for use in a future experiment. All participants were shown the same commercial and were asked a series of neutral questions regarding the commercial. The page was programmed to automatically advance after five minutes passed, and participants were not given the option to advance the page any sooner.

Following the delay task, participants were told the computer had checked the database and found only two apartment options still available from the initial set. All participants were shown the same two options: one apartment with 5 stars for affordability and 1 star for commute and one apartment with 1 star for affordability and 5 stars for commute, and asked to select which one they would choose. Following their choice, participants completed other, unrelated experiments and, at the end of their session, were asked to rate the importance of a list of goals randomly on a list. Specifically, participants were asked to rate how important various goals were to them (9 point scale: 1 = not at all important, to 9 = extremely important), and embedded in this list of goals were affordability and commute/convenience. Participants were also asked a

question regarding how difficult it was to satisfy both goals when making initial selections (9 point scale: 1 = extremely difficult, to 9 = extremely easy), and administered a funneled debrief to see whether participants linked any part of the studies together or were aware of the priming procedure (none was reported).

As expected, manipulation checks revealed a main effect of condition on difficulty such that participants randomly assigned to view the conscious goal conflicting consideration set felt greater difficulty (M = 2.88, SD = 1.82) than participants in the conscious goal compatible condition (M = 7.17, SD = 1.91; $F(1, 353) = 469.11$, $p < .001$). This difference was also confirmed indirectly, as response time measures indicated participants in the conscious goal conflicting condition spent significantly more time making their initial selections (M = 44.33, SD = 17.56) than conscious goal compatible participants (M = 31.85, SD = 12.47; $F(1, 353) = 59.90$, $p < .001$). Given the binary outcome of the dependent variable (i.e., apartment choice), a binary logistic regression was conducted using conscious goal construal (compatible vs. conflicting) and nonconscious cues (affordability vs. commute). When looking for our proposed conscious goal construal by nonconscious cue interaction across all participants, the sleight of mind effect was absent (β = -.29, p = .55, Exp(β) = .75).

However, hypotheses 2a and 2b predicted that the Sleight of Mind effect was only likely to manifest when goals are equally important to participants and less likely to manifest when one goal dominates another. To test for this possibility, participants' goal importance ratings were coded into a new factor: goal importance. When participants rated their affordability goal and commute goal at the same rating on their respective scales, this was coded this as a 1; when participants rated one goal as being of greater importance than the other, this was coded this as a 0. Entering these three factors – conscious goal construal (compatible vs. conflicting),

nonconscious cues (affordability vs. commute), and goal importance (equal vs. unequal) – into a binary logistic regression revealed a significant three-way interaction ($\beta = 2.59$, $p = .10$, Exp(β) = 13.38). Looking at the two groups separately, the Sleight of Mind effect did not manifest for participants who deemed one goal to be more important to them than the other. In this instance, participants simply chose the apartment option corresponding to their more important goal. For this particular sample that tended to be the affordability option. However, for the group who deemed affordability and commute to be equally important, the Sleight of Mind effect manifested. Thus, the results provide support for hypotheses 2a and 2b. Interestingly, participants who rated affordability and commuting as equally important and who were randomly presented the *compatible* consideration set were equally as likely to choose either the commute apartment or the affordable apartment – almost a perfect 50/50 split, as would be expected.

Study 2 replicated and extended the findings of the previous studies. First, the goals considered in study 2, affordability and commute, differed from spending and saving, thereby illustrating the robustness of the effect. Second, the use of consideration sets to elicit conscious goal conflict and compatibility bolsters the ecological validity of the phenomenon, as consideration sets often pit consumer goals against one another in the manner described. Third, the use of the parafoveal priming task, a subliminal methodology, provides bolsters support for the nonconscious process involved in the effect. And, finally, capturing goal importance ratings allowed us to test the hypotheses that the Sleight of Mind effect is more likely to manifest when goals are deemed to be equally important but not when one goal dominates another in terms of importance.

Although study two replicates the Sleight of Mind effect, one potential limitation of the study involves the goal importance ratings that came at the end of the task. Even though the

importance ratings came after a series of unrelated filler tasks, it is possible that the manipulations used in the experiment influenced participants' ratings of goal importance for their affordability and commute/convenience goals. To correct for this, study 3 employs a similar method but captures the goal ratings at the beginning of the study session, followed by a series of filler tasks, and then the target experiment.

Study 3: Relative Goal Importance: Health v. Indulgence

The purpose of study 3 was to replicate the Sleight of Mind effect in yet another goal domain – health and indulgence goals – and to explore potential behavioral consequences of the effect. In addition, to show that the point at which participants rate the importance of their goals does not matter, study 3 had participants rate goals first, then complete filler tasks, and finally complete the target study.

Undergraduate students (n = 186) participating in experiments for course credit completed a series of ostensibly unrelated studies. Given the setup of the hour-long lab session, participants completed a series of unrelated tasks between the first and second part of study 3. In the first part of study 3, participants rated goal importance for several goals, order randomized, including the goals to "keep fit and healthy" and the goal to "indulge in delicious food." After completing the series of unrelated studies for up to 40 minutes, participants then completed the second part of study 3, which resembled the paradigm used in the previous studies. Specifically, participants were randomly assigned to conditions in which they were to write about their conscious goals to keep fit/healthy and to indulge in delicious food as being conflicting or compatible with one another. Following this, participants completed the ostensibly unrelated visual acuity task, and were exposed to either health-related words or indulgent-related words.

After a five-minute delay during which participants read an article about cloud computing, participants were told that they would be participating in a focus group sponsored by Planters Peanuts. Specifically, participants were told that the company was interested in creating a new trail mix consisting of a blend of its "heart healthy" trail mix and its "sweet indulgent" trail mix. Trail mix was provided along with cups and scoops. Participants were directed to create their own, custom 10-scoop trail mix. The dependent variable of interest was the number of scoops taken from the healthy and indulgent mixes.

For the key hypotheses to be supported, participants who rated their fitness/health and indulgence goals as equally important should show greater sensitivity to the nonconscious cues to which they were exposed but only when those goals were construed as conflicting with one another. Participants construing these goals as compatible or participants for whom one goal, either health or indulgence, was rated as being more important than the other would not be expected to demonstrate the Sleight of Mind effect.

As predicted, the results of a 2 (conscious goal construal: conflicting vs. compatible) x 2 (nonconscious cues: health cues vs. indulgence cues) x 2 (goal importance: equal vs. unequal) between group ANOVA revealed a significant three-way interaction ($F(1,178) = 4.39$, $p < .04$) consistent with the Sleight of Mind effect. The results provide further support for hypotheses 2a and 2b. Participants who construed their health and indulgence goals as conflicting and were exposed to indulgence (fitness) cues took more scoops of the indulgent (healthy) mix for their custom trail mix, replicating the findings of the previous studies and demonstrating that the Sleight of Mind effect has behavioral implications for actual product consumption.

Discussion

Whether deciding to buy a safe car or a sexy car, to use environmentally friendly canvas bags or less eco-friendly (but more convenient) plastic bags, or to pay by cash or a credit card, very few consumer decisions are made without some degree of conflict. In fact, life is full of conflicting goals, so understanding how conscious experiences of goal conflict influence consumer decision-making and behavior is important. Further complicating this relationship between conflicting goals and consumer behavior is the fact that cues need not even be conscious to motivate and affect behavior. What is unclear, however, is why nonconscious cues do not always produce the same behavioral effects. Indeed, the same cue can produce an outcome in one context, the opposite outcome in a different context, or sometimes fail to produce a behavioral effect at all. Thus, the purpose of the present research was to explore the relationship between conscious and nonconscious processes in consumer contexts in an attempt to shed light on why nonconscious cues operate as they do.

In five studies, we find support for our proposed Sleight of Mind effect. First, we show that construing goals as conflicting (vs. compatible) results in nonconscious cues exerting a stronger influence on subsequent outcomes in a cue-consistent manner (e.g., intending to spend more when exposed to spending cues, opting for healthier food options when exposed to health cues). Second, we show that the relevance of the nonconscious cues to the domain of the consciously held goals does matter. That is, it is not the case that individuals construing their conscious goals as conflicting are more sensitive to *all* nonconscious cues, in general. Instead, individuals are only differentially sensitive to nonconscious cues that are relevant to the domain of conscious goals being considered. Third, we show that the Sleight of Mind effect is more likely to occur in situations when goals are deemed to be of equal importance. When one goal is

deemed to be more important than another, then, regardless of conscious goal construal, individuals typically respond in service of their prioritized goal.

With respect to theory, the current research is the first to demonstrate a relationship between conscious goal construal and the varying effectiveness of nonconscious cues on subsequent choice and behavior. Evidence of this relationship between a top-down, conscious process (i.e., thinking about conflicting goals) and a bottom-up, nonconscious process (i.e., nonconscious cue exposure) suggests that other comparable interplays between conscious and nonconscious processes may exist. Consider, for example, the conscious experience of stress. It may very well be the case that stress leads individuals to become more sensitive to relevant nonconscious cues that could potentially mitigate or alleviate the conscious experience of stress. Thus, conscious goal construal is likely but one example of how conscious processes may modulate the effectiveness of nonconscious cues. Going forward, consumer research exploring effects of nonconscious processes should consider the role conscious processes play on nonconscious cue effectiveness.

Methodologically speaking, the current results contribute important insights with respect to study design. Knowing *when* primes are likely to be more or less effective at influencing behavior encourages careful consideration when crafting cover stories, additional manipulations to mitigate or encourage conflict, and even the selection of stimuli based on their relevance or irrelevance. Another important consideration derived from the results herein involves capturing information regarding the conscious state of the participant, as our results suggest an individual's goals and conscious goal construal interact with nonconscious cues. Studies often incorporate priming without capturing or factoring in characteristics of the participants in subsequent

analyses of nonconscious cue effectiveness, but the current research suggests that this information can help shed light on why primes may work (or not work) as they do.

With respect to practical implications, the findings herein suggest that retailers and marketers should pay more attention to the consumer experience as shoppers are in the moment of making a decision, particularly decisions that elicit experiences of conflict. As previously noted, consumer behavior is largely goal-driven, and most contexts involving tradeoffs between appealing options, products, or services may likely elicit this potential interaction between conscious and nonconscious processes. Thus, consumer contexts are natural settings for the elicitation of conflict. Marketing managers have the ability to design consideration sets (e.g., menus, product offerings), store layouts, and advertisements in a way that either promotes or mitigates experiences of conflict, the results of which could lead to very different outcomes. In addition, whether in regard to traditional advertising, online advertising, or POP/in-store displays, careful consideration of the presence of stimuli and the type of stimuli that could potentially be processed nonconsciously is warranted. Again, consumers engage in far more nonconscious processing of marketing stimuli than active, conscious processing, and the present research underscores the importance of how these cues can systematically influence consumer choice and behavior. From a consumer's perspective, the present findings suggest that consumers may want to actively think about how their goals are conflicting or compatible with one another in order to affect the degree of influence nonconscious cues can exert on their behavior or decision-making.

Consumption, however, extends well beyond the purchasing of consumer packaged goods. Indeed, consumption can involve consuming concepts, expectancies, fluency, and goals (Ariely and Norton, 2009). Take, for example, a patient's conflicting goals associated with

pursuing a risky medical procedure (and its accompanying side effects) or pursuing no treatment (and, as such, no side effects). Or consider a juror's conflicting goals to provide justice to a criminal and to give a criminal a second chance. The notion that nonconscious cues in one's context can influence an individual's decision in these critical scenarios illustrates the potentially far-reaching implications of the Sleight of Mind effect. Can something like the words a doctor uses to describe one's treatment options subtly tip the scales in favor of one treatment over another? Can a lawyer's nonverbal mannerisms lead a juror to send an alleged criminal to jail instead of giving the suspect a second chance? Having a clearer understanding of how conscious and nonconscious processes interact is essential for understanding human behavior and, perhaps more importantly, for helping individuals make better decisions for themselves and for others.

The present studies represent just one way of exploring the interplay between conscious and nonconscious processes. Indeed, other top-down processes, such as conscious experiences of stress, may modulate sensitivity to relevant nonconscious cues. Thus, conscious goal construal can be viewed as a mere starting point in the exploration of such interactions. On a related note, exploring the underlying physiological process of the Sleight of Mind effect – whether through biological means like cortisol measures or neuroimaging – may help inspire ideas as to what other top-down processes could potentially produce comparable effects. Furthermore, to date, no one has yet looked at the brain of an individual who is experiencing both conscious conflict and nonconscious cue exposure simultaneously, thus there is much to be gained by understanding how the brain works in this instance.

Even more important to understanding the systematic way in which nonconscious cues influence behavior is an exploration of reactance. Reactance, in the domain of nonconscious processing, refers to instances in which cues produce cue-opposite effects (e.g., spending cues

result in more saving; health cues result in greater indulgence). One potential reason for this inspired by the present studies involves the idea of goal importance. For the studies herein, when goals were rated as being of unequal importance, the modal response of the difference in ratings was never extreme. However, it is easy to imagine that for some individuals – say chronic dieters, for example – one goal (e.g., health goals) may dominate another (e.g., indulgence goals) in an extreme way. If a particular goal is so important and salient to an individual, it is likely that such a goal may make one's self more salient (Wheeler et al. 2007). Coupling this with requiring individuals to think how their dominating goal conflicts with another goal they possess could be threatening to the self, and threats to the self have been shown to result in reactance effects (Chartand et al., 2007). While more studies would need to be conducted to demonstrate this effect, having a systematic understanding of not only *when* nonconscious cues are more likely to have an effect but also the *direction* of those effects would be an important contribution worthy of future research.

Finally, to bring the Sleight of Mind effect full circle to conscious processing, it seems feasible that obtaining information at a nonconscious level when conflicted could come at a cost to conscious information search. That is, we know that when consumers are conflicted between choices they tend to seek out more information on a conscious level. The present research demonstrated that these same individuals are also more susceptible to the influence of incoming information at a nonconscious level in the form of relevant nonconscious cues. Thus, if a conflicted consumer is swayed by incoming nonconscious information, one wonders whether that consumer will be as motivated to seek out more information consciously. If there is some theoretical "information saturation point" then would consumers be less likely to read product labels or to pay attention to advertisements if already inundated with information at a

nonconscious level? There are obvious implications for consumer welfare and marketing efficiency in these instances that warrant future study.

The majority of consumer research has explored the conscious processes associated with consumer decision-making and behavior, while the past two decades witnessed an emergence of research studying the role of nonconscious processes in consumer contexts. Despite robust evidence of priming effects in which exposure to nonconscious cues leads to cue-consistent behaviors, human beings (thankfully) do not respond to every single nonconscious cue they encounter throughout the day, which suggests that nonconscious processing is more complex than a simple "cue and effect." Going forward, we urge that the conversation shift to understand the interplay between conscious and nonconscious processes, how they work together or against each other, and why these systems may have evolved to operate as they do for a truer representation of the daily human experience. Modern neuroscience research suggests that conscious and nonconscious processes are not separate, discrete processes operating on parallel but distinct paths. Instead, conscious and nonconscious processes are naturally integrated within the brain. Thus, future consumer research should seek to better understand how these processes operate together to influence choice and behavior in consumer contexts.

Figure IV.1 Goal-Relevant Cues: Spend v. Save

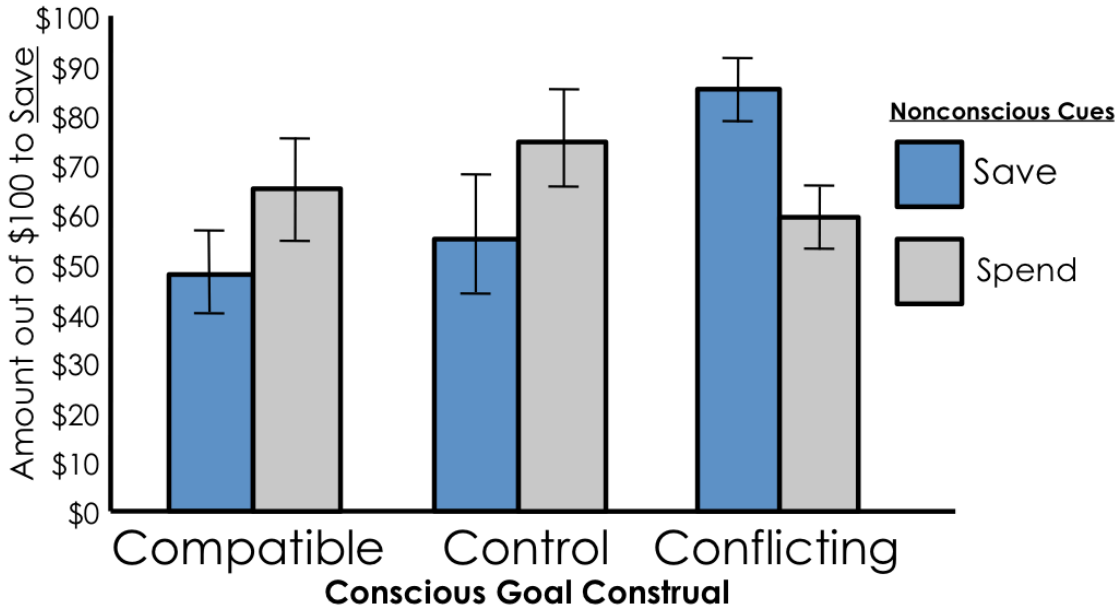


Figure IV.2 Goal-Relevant Cues: Compete v. Cooperate

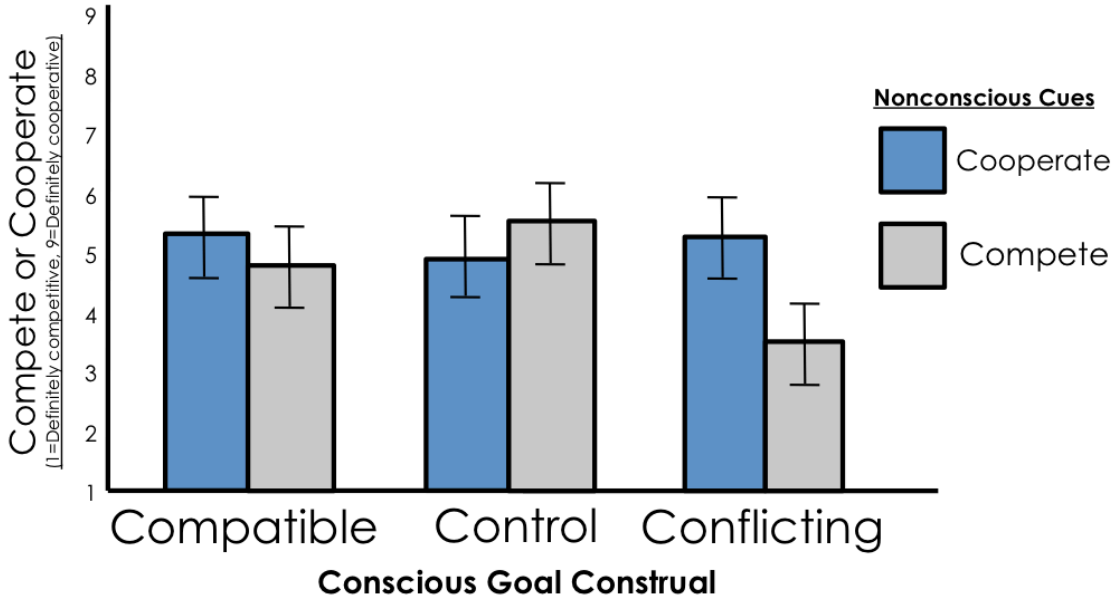


Figure IV.3 Goal-Irrelevant Cues

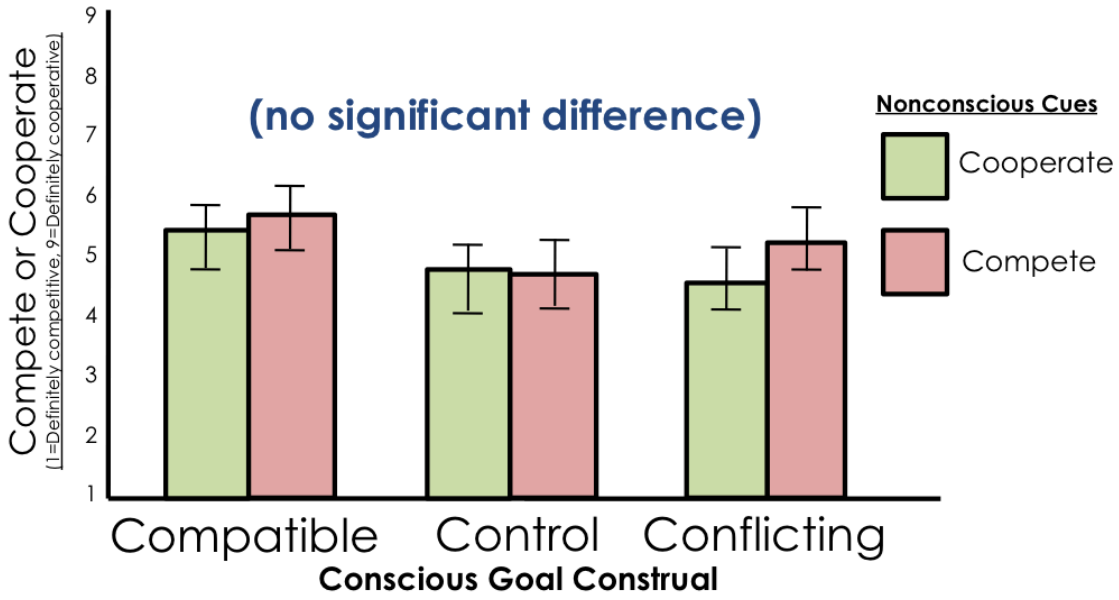


Figure IV.4 Relative Goal Importance: Affordability v. Convenience

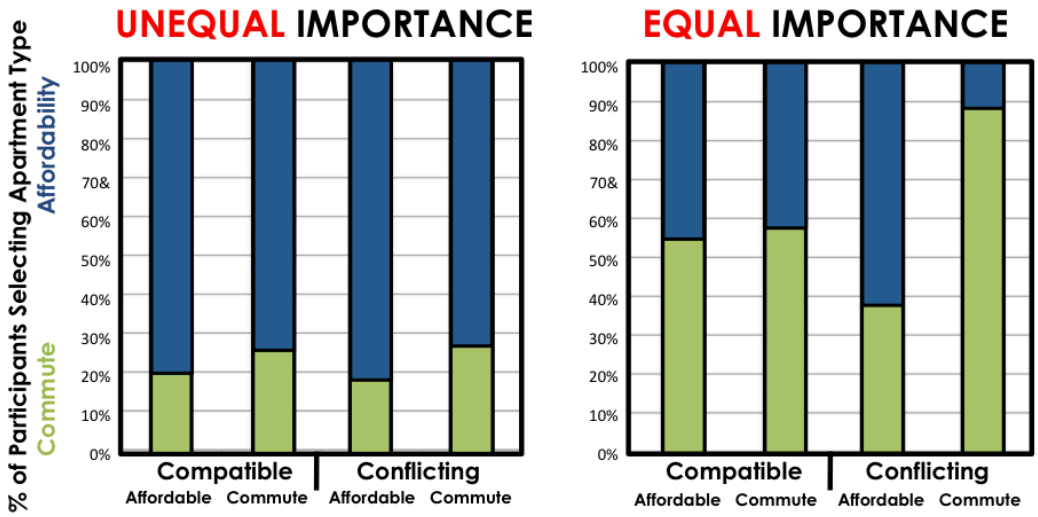
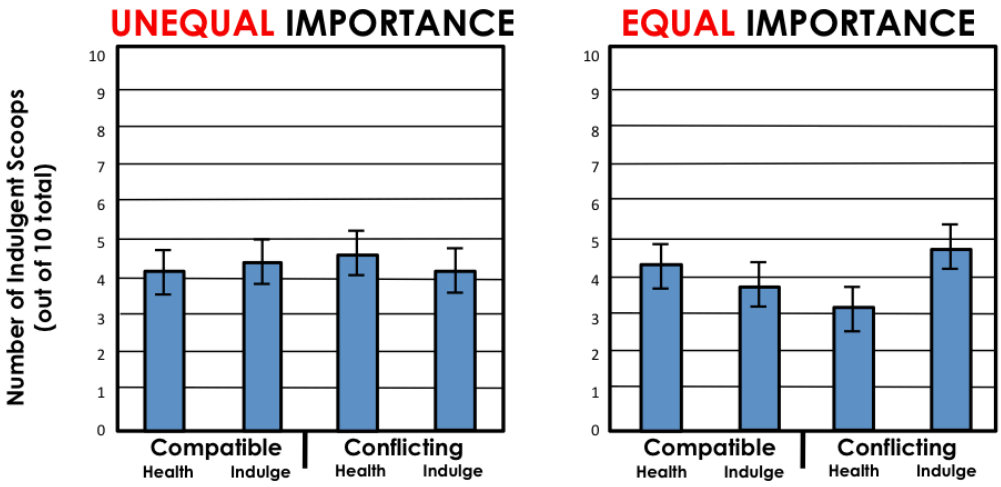


Figure IV.5 Relative Goal Importance: Health v. Indulgence



CHAPTER V

Conclusion

The human body is particularly adept at maintaining itself automatically with little to no need for conscious intervention, simultaneously regulating its internal state while also factoring in external information from its context. The biological and physiological mechanisms contributing to that adaptive nature have been well researched in those respective fields, as well as within the domain of neuroscience. However, relatively little attention has been paid to how the body's internal state interacts with its context in the domain of consumer research. Despite several anecdotal examples of how the value of a consumer product changes as a function of one's internal state and his context, such as the value of ice-cold water on a hot day versus a cold day, few academic studies have explicitly researched this phenomenon and none, to date, has explored how the phenomenon could be applied to the domain of nonconscious processing. The essays included in this dissertation provide the first such evidence that interactions between the internal state of an individual and his context produce variations in his sensitivity to relevant cues in those contexts, an effect demonstrated to operate at a nonconscious level.

In the first essay, individuals from cultures traditionally more sensitive to relationships, as well as participants made to be more sensitive to relationships via subtle primes, responded to the threat of breaking apart relationships by avoiding doing so. These relationship-sensitive individuals would rather consume nothing or switch to consuming previously unselected products rather than break up their initially selected set of consumer products. For the minority

of relationship-sensitive participants who *did* consume a broken set, the option to pay a premium to restore the set to its entirety was extremely attractive, so much so that this group was willing to pay nearly twice as much than other participants for the option.

In the second essay, individuals' needs for social belonging were threatened by having some recall real experiences in which they had been socially excluded. Without their conscious perception, these socially excluded participants responded differently to the subtle social cues of consumer products that were then presented to them as part of ostensibly unrelated consumer focus group tasks. Socially excluded participants were more likely to respond to the humanized cues of a Roomba vacuum compared to control participants and participants asked to recall episodes of social inclusion, as well as compared to fellow socially-excluded participants provided a non-humanized version of the Roomba (i.e., the same Roomba turned 90 degrees so that the face-like cues were no longer evident). In addition, socially-excluded participants whom were asked humanized versions of questions about their mobile phones estimated they would spend *less* time on the phone talking to significant others (i.e., friends, family) compared to socially-included participants and socially-excluded participants asked generic, non-humanized versions of questions about their phone. Equally as interesting, socially-excluded participants whom were asked humanized versions of questions about their mobile phones were less willing to engage in prosocial behavior, actions typically used to restore social connections among others. The effect was mediated by a lower reported need for social assurance suggesting that socially-excluded individuals subtly made to construe their phone in a humanized way needed less social assurance and, as such, were less likely to seek out such assurance by engaging in prosocial behaviors

Finally, in the third essay, individuals' internal states were manipulated by having them construe multiple goals important to them as either conflicting or compatible. Whether spending and saving, competing and cooperating, affordability and convenience, or keeping healthy and indulging, the specific goals considered did not matter: construing multiple goals as conflicting led participants to be more sensitive to relevant nonconscious cues in their context, which then influenced subsequent choices and behaviors. Importantly, this Sleight of Mind effect only manifested when the goals under consideration were deemed to be of equal importance to the individual (i.e., one goal did not dominate the other in terms of its importance) and the cues presented were relevant to the domain of goal conflict (i.e., individuals construing goals as conflicting were not simply more sensitive to any and all cues present in their context). The results of the third and final essay of the dissertation provide support for the potential of an adaptive, functional relationship between conscious and nonconscious processes, interactions between one's internal state and his context, and the importance of considering the state of an individual and his situation both for the purposes of marketing theory and marketing practice.

Collectively, the studies contained herein provide a critical first step toward highlighting the importance of understanding how internal state and context interact to affect sensitivity to nonconscious cues in consumer contexts. However, one limitation in the present research is that the methodologies used are not as proximal as they could be with respect to measuring the underlying process, particularly with respect to the internal state of the participants. This limitation is one of necessity, however, as before employing more expensive proximal methods – such as functional magnetic resonance imaging – it was logical to demonstrate robust effects first that would then inspire the research direction of the more expensive methods. Furthermore, the current studies are not without process explanations; several studies contain tests of mediation

exploring the proposed underlying processes directly and indirectly (e.g., Chapter II – relationship reasons mediating cultural mindset's effect on willingness to break up a selected set; Chapter III – the moderated mediation demonstrated for social assurance as a mediator between social rejection and prosocial behavior). These findings will help focus the direction of the future studies incorporating proximal biophysical methods. For example, the second essay suggests that one region of interest for brain activation in a comparable fMRI study would be the medial prefrontal cortex (mPFC), an area of the brain implicated in facial recognition (Balconi et al., 2011) or the fusiform face area of the fusiform gyrus (FG) implicated in facial cue recognition (Schultz et al., 2003). Similarly, the third essay suggests that a follow-up neural study should focus attention on the anterior cingulate cortex (ACC), a region implicated in conflict detection and monitoring (Botvinick et al., 2001), as well as measures of cortisol, which are likely to spike for participants experiencing conflict (Segerstrom and Solberg Nes, 2006; Solberg Nes et al., 2005). Together, the studies suggest that we can capture measures of one's internal state – cortisol level, blood glucose level, blood pressure – or neural activity, along with capturing the characteristics of one's context in any given instant, to better understand how and why individuals are more or less sensitive to nonconscious cue influence. It would also be prudent to capture these measures of the internal state over time, as this data may shed light on the adaptive relationship between maintaining one's internal milieu and sensitivity to stimuli in his context. Should various measures restore to their pre-manipulation levels, or at least return that direction, upon exposure to relevant contextual cues and opportunities for choice or behaviors based on those cues, then the functional relationship of the phenomenon would have greater support.

Beyond the use of more proximal measures to explore the effect, another possible consideration is the use of genetic research methods to study the effect particularly given the emerging interest in genetics within consumer research. Consider, for example, how genetic differences among groups may reveal different thresholds for stress, social connectedness, and other human needs. Such differences could reveal important insights on why entire groups of people might be more or less sensitive to particular contextual cues.

Other potential limitations derive from the specific constructs and stimuli used in the studies themselves. For example, in Chapter II, I deliberately use "cultural mindsets," rather than either self-construal or analytic/holistic processing, as disentangling these two different-but-related constructs is a much more ambitious goal worthy of its own line of research. Framing the research question using cultural mindset permitted the use of a shared feature of these other constructs–differential sensitivity to relationships–to test the proposed hypothesis. However, it would be interesting to know whether consumers see products as part of a greater whole (an analytic/holistic approach) or as distinct-but-related items (an independent/interdependent approach) once selected. In Chapter III, the humanized cues consisted of a smiling Roomba and questions giving cellular phones a humanized characterization. While the questions about the cellphone are relatively neutral in valence, the smiling Roomba could have a positive implication. Going forward, it would be interesting to see what happens when the cues in one's context are negative social cues–a frowning Roomba, a product featuring negative humanistic characteristics (e.g., unreliable, cold, wasteful)–to see if this reverses the current effect and *increases* genuine interpersonal interaction or prosocial behavior. And finally, in Chapter IV, although common consumer goals are explored and measured, it seems possible that the effect extends beyond internal "goal conflict" to other kinds of internal states. Whether stress, strong

emotion, or visceral states like hunger, several internal state considerations could be explored to test for differential sensitivity to relevant nonconscious cues. In fact, the motivation for this dissertation suggests this broader story is likely the case, so testing for these other instantiations of the Slight of Mind effect provides many opportunities for future studies.

With respect to practical applications of the present research it seems feasible that better understanding the interaction of consumers' internal states and their contexts with respect to predicting choice and behavior would be of extreme interest to marketing managers. Marketing, as a practice, evolved from mass production to mass customization based on the notion that consumers' individualized needs would be better satisfied and, thus, produce more value. Once technology permitted such customization, marketing evolved. The next potential step in that evolution could involve adjusting consumer products and services to an individual consumer in the right place at the right time. Indeed, advances in geolocation technology present in mobile phones, tablets, and laptops have already produced context-relevant advertisements, promotions, and customized messages. This, combined with more immediate measures of consumers' moods, behaviors, and even thoughts – whether via online status updates or mobile applications such as Yahoo!'s "IntoNow" that permit real-time updating of a user's emotions and thoughts while watching television – provides rich opportunities for exploring interactions between internal states and context. Imagine dynamic copy in advertisements and promotions that changes as a function of a consumer's mood and location.

Although this sort of tracking may seem intrusive to some, the marketing efficiencies that result from such an approach could yield benefits for consumers, e.g., providing exactly what a consumer needs exactly when and where he needs it. Furthermore, because humans' sensitivity to nonconscious cues naturally varies in the manner explained herein, it is prudent to understand

the phenomenon for consumer protections as much as it is to understand it for the benefit of marketers. Consider, for example, the possibility that threatening the availability of basic resources or fundamental needs has a greater effect on some consumer groups as opposed to others – for example, cultural groups with particular norms about providing basic resources or historically low socio-economic status groups for whom resource fulfillment may be an ongoing concern. Would these consumers then be more sensitive to subtle contextual cues pertaining to resources? Fast food logos in the case of food? Logos and words associated with payday loan and cash advance companies in impoverished areas? Although they may not be actively attending to these logos and, when asked, may explicitly remark on their disinterest in such products and services, the choices and behaviors of these consumers might be influenced by such cues in subtler, nonconscious ways. Thus, the practical benefits of the current research extend well beyond the bottom line of a company to the well-being of consumers.

With respect to theory and methodology, the results make an important point to researchers engaging in priming and nonconscious processing research: all cues are not created equal. Despite evidence from a variety of disciplines, including the time-of-day effects in consumer research itself, the nonconscious processing literature has yet to incorporate the important role of situation. That the internal state of participants, the context in which the participants find themselves, and interactions between one's internal state and his context had never before been explored was surprising. The closest anyone in consumer research came to considering that differences in the participants might matter with respect to cue interpretation and, as such, cue effectiveness, was the work done by Wheeler and Berger (2007) regarding how the same cue could have different meanings. Even then the researchers were focused on cue *meaning* rather than cue *effectiveness* or *sensitivity to the cue*. The results of the present research

suggest that even the same participant is unlikely to be equally sensitive to the same cues in the same way over time as internal set points may shift, contexts change, and interactions between the two are countless.

While the current studies are not the final word on what makes individuals more or less sensitive to contextual cues, they do provide at least one explanation for differential sensitivity to nonconscious cues. Going forward, it is prudent for researchers to capture as much information about their individual participants' states while completing studies, as well as any characteristics of the context in which the study is taking place. Thus, the most significant contribution of the present work to the literature on nonconscious processing is that consumers' sensitivity to cues in their context is not as straightforward as initially thought but, instead, is a function of far richer, deeper interactions between consumers' internal states and their contexts. The essays herein, then, are the first among many possible research studies designed to explore the countless combinations of such interactions and how they affect the role nonconscious processing plays on consumer choice and behavior.

Just as our sensitivity to appetizing stimuli – a refreshing drink, an indulgent snack, an attractive person – can vary as a function of our internal state and our surroundings, so, too, can our sensitivity to the cues we are processing at an implicit, nonconscious level. Although we can study these processes using the methodologies and procedures found in this dissertation, by definition we may never be consciously aware of how these interactions between our internal state and context affect our urges, our instincts, our choices, and our behaviors as they occur. However, it is certainly worth appreciating this sophisticated choreography of our brain, our body, and our context that enables us to make decisions, to want, to like, and to consume so effortlessly.

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