

CLEANSING EFFECTS IN CONSUMER BEHAVIOR

by

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Abstract

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by

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Cleansing can wash away more than the germs on ones' hands. In fact, there is recent research to suggest that the concept of cleansing can serve to metaphorically wash away transgressions. Essay 1 of this research examines how the physical act of cleansing can affect individuals' behavior with regards to indulgence. Across a series of four studies, results demonstrate that embodying a cleansing product makes individuals more likely to subsequently choose an indulgent option from a choice set. However, this effect is not a result of priming, since priming a cleansing product leads individuals to be less likely to choose an indulgent option. Importantly, there is an opposite pattern of results when individuals embody or are primed with a hedonic product. Further evidence suggests that these effects can be explained by a goal fulfillment and activation process. Essay 2 examines how cleansing products can positively affect other products they come in contact with. Specifically, findings indicate that cleansing products can positively increase consumers' perceptions of another product, as well as how much they are willing to pay for the other product. Additionally, there is an opposite pattern of results when consumers

themselves come in contact with a cleansing product, as they become more sensitive and critical of other products. The work concludes with a discussion of the conclusions and implications of both essays, and presents several issues for future research to examine.

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ESSAY 1
**CLEANLINESS IS NEXT TO GODLINESS AND CHOCOLATE CAKE: EMBODIED
AND PRIMED CLEANSING EFFECTS IN CONSUMER BEHAVIOR**

CHAPTER 1: INTRODUCTION

Cast thyself into the enfolding arms

Of the Angel of Water:

For she shall cast out from thee

All that is unclean and evil.

-Dead Sea Scrolls, c3rd century-640 AD

Imagine that one day your department is hosting a small reception. Aside from the beverages, there will also be a few food items at this reception, ranging from healthy fruits and salads to greasy, fried, and generally unhealthy options. Before leaving your office to go to the reception, you decide to wash your hands at a nearby bathroom. By cleansing, however, can you be washing away more than just the germs on your hands? In particular, can the mere act of cleansing prior to a choice influence your selection and consumption of indulgent, unhealthy options? Moreover, how would just looking at the soap instead (without washing your hands) impact you?

Indeed, research in psychology has long determined the important role of external factors in the environment on individuals' cognitions and behavior. There is much evidence to suggest that even slight exposure to stimuli in the environment (i.e., "priming"), can have a strong and powerful influence on behavior. It has been found that this influence can lead to a variety of consequences, ranging from information accessibility (Wheeler and Berger 2007) to the

activation of goals (Chartrand et al. 2008) and effects on behavior (Shapiro 1999). Despite the short time duration required for priming to occur, the consequences due to the exposure to primes have been found to exist long after individuals initially encounter them.

In addition to the external environment having an influence on thoughts and behavior, other research has found that the body itself (i.e., “embodiment”) can be equally, if not more, influential. Findings indicate that bodily states and actions can have an influential role on cognition and behavior, often without much conscious awareness. Such research has demonstrated effects on individuals’ cognitions by simple physical manipulations of various parts of the body, or alterations of bodily states. Furthermore, work within this embodiment literature seems to suggest that specific physical states and acts serve as metaphors which impact behavior (e.g., sitting upright in a chair leading to feelings of pride; Niedenthal et al. 2005).

Although much prior research has demonstrated the consequences of priming on consumer behavior, relatively little research has examined the effects of embodiment within this domain. The present research examines the differential effects of these two mechanisms within the context of cleansing and consumer indulgence. Consistent with prior literature, findings from this research suggest that priming individuals with a cleansing product activates cleansing goals, and leads to behavior that is in line with those goals. In the context of indulgent choice, results suggest that such individuals are more likely to choose a relatively less indulgent option as a result. On the other hand, results also suggest that the embodiment of cleansing leads to the fulfillment of cleansing goals, and hence results in individuals choosing a relatively more indulgent option. Across a series of four studies, this research demonstrates that individuals must undergo the physical act of cleansing in order for this effect to occur, documents the underlying

process, and suggests other contexts in which embodiment and priming can have distinct implications.

Importantly, in highlighting the process of primed versus embodied cleansing effects on consumer behavior, the work makes a novel contribution to the recent literature on embodiment. Whereas research has documented the role of priming and goal activation, the current research extends the work on embodiment by demonstrating that embodiment fulfills goals. Furthermore, although the focus of this paper is cleansing and indulgent choice, the work presented here provides support to suggest that the distinct effects of goal activation and fulfillment resulting from priming and embodiment can extend to other contexts as well. The work begins by referencing key findings in the literature on cleansing effects in consumer behavior, and then goes on to provide a theoretical basis for the proposed effects based on the research on priming and embodiment.

CHAPTER 2: THEORETICAL BACKGROUND

Cleansing in Consumer Behavior

Plenty of recent research within psychology suggests that the act of cleansing appears to rid individuals of more than just physical impurities. For instance, in research by Zhong and Liljenquist (2006), subjects who recalled a time when they acted unmorally and then cleansed their hands with an antiseptic wipe were less likely to engage in direct compensatory behaviors (versus those who did not cleanse their hands; Zhong and Liljenquist 2006). Similarly, in research by Zhong, Strejcek, and Sivanathan (2010), individuals who cleansed their hands rated their moral character more favorably than others'. In addition, other work by Schnall, Benton, and Harvey (2008) found that people judged others' immoral behaviors less harshly after having cleansed their hands. These findings are conceptualized in terms of a purity-morality metaphor that links physical cleanliness to moral cleanliness through the attenuation of disgust-related feelings and thoughts (Lee and Schwarz 2010a). In essence, physical cleanliness appears to remove moral impurities by wiping the slate clean.

In one of the few papers exploring the effects of physical cleansing in domains unrelated to purity and morality, Lee and Schwarz (2010b) demonstrate that cleansing can wash away the negativity associated with post-decisional dissonance. In two experiments, the researchers found that when subjects washed their hands, they did not exhibit a need to justify their choice by increasing the perceived attractiveness of the chosen over the rejected products (CDs and fruit jam). However, those who only examined the bottle of hand soap (i.e., without making physical contact with it), did exhibit the classic post-decisional dissonance, whereby preference for the

chosen over the rejected alternative was stronger after the choice than before. As Lee and Schwarz note, this finding is not explained by a purity-morality metaphor and thus a better understanding of the processes that mediate the psychological impact of physical cleansing is needed.

The current research seeks to build on this previous work by providing empirical support for an embodiment explanation of the clean slate effect of physical cleansing. It is proposed that the act of physical cleansing can rid individuals of the stigma associated with making an indulgent choice (Lascu 1991; Okada 2005). Importantly, however, it is also posited that individuals must undergo and embody the act of cleansing in order for these effects to occur. On the contrary, it is argued that simply making individuals aware of cleansing (i.e., priming cleansing) will lead to the opposite effect, as priming a cleansing construct should activate a need to be cleansed. Across four studies, this research documents the proposed effect and shows that the embodiment of cleansing makes individuals indulge to a greater extent compared to individuals merely primed with cleansing. In the next section, the literature on priming and embodiment is reviewed, and the specific mechanisms for the proposed process are explained.

Priming

Undoubtedly, there is much research to suggest that stimuli in the environment can influence individuals' cognition and behavior. Known as priming, or the "situational activation of mental constructs" (Fitzsimons, Chartrand, and Fitzsimons 2008, p. 21), this effect has been shown to have a powerful influence. Indeed, the majority of the research on priming has focused on direct effects on behavior. For example, North, Hargreaves, and McKendrick (1997) found that playing French music in the wine department of a store led to an increase in sales for French wines, while playing German music led to an increase in sales for German wines. Nevertheless, recent work has demonstrated more indirect effects as well, as there has been much research to suggest that primes in the form of downstream environmental stimuli can influence behavior. In one paper by Berger and Fitzsimons (2008), for example, participants who were primed with pictures of dogs subsequently preferred Puma brand sneakers over other brands.

Importantly, priming effects have been shown to occur even in the absence of conscious awareness. As such, primes can influence individuals greatly, even there is no knowledge about the prime. In a recent paper, Fitzsimons, Chartrand, and Fitzsimons (2008) primed participants with either an Apple computer or IBM logo by flashing it on a computer screen for 2 milliseconds. Later, the researchers assessed participants' creativity by having them list the uses for a brick. Results demonstrate that those primed with the Apple logo were more creative, as they came up with more uses for the brick than those who were primed with the IBM logo. Interestingly, participants had no knowledge about the primes when debriefed after the study. Similarly, in other research by Shah (2003), participants who were subliminally primed with the concept of "father" performed better than control participants (i.e., those not primed with

“father”) on a series of anagrams, if they associated their father with achievement. Again, the effects of priming occurred unintentionally and without participants’ awareness, suggesting that primes can work by automatically activating the primed construct.

While the effects of primes in the literature have been robust, researchers have disagreed as to the proposed mechanisms responsible for the effect. One explanation contends that primes activate cognitive constructs that are related to the prime. These constructs then influence behavior via a “perception-behavior” link, through which behavior reflects the primed construct (Dijksterhuis and Bargh 2001). For example, researchers Dijksterhuis and Bargh (2001) found that priming individuals with the elderly activates constructs related to the elderly, such as slow. Consequently, participants primed with the elderly were slower to walk to the elevator upon leaving the experiment room than those not primed with the construct (Dijksterhuis and Bargh 2001).

Alternatively, more recent work has begun examining a motivational account of priming. Accordingly, this view contends that primes function by activating goals that then influence behavior. For example, when Chartrand and Bargh (1996) primed participants with either impression formation-related or memorization goals by exposing them to related constructs (e.g., impression formation: to evaluate; memorization: absorb), they found that those primed with impression formation goals had better recall on a memorization task than those primed with memorization goals. Furthermore, in more recent research, participants who were primed with prestige goals demonstrated a temporal escalation effect with regards to attaining the related goal. For those participants, choice of the more expensive option in a choice set increased as the time interval between the prime and their choice increased, supporting a motivational account of priming (Chartrand et al. 2008).

Embodiment

In the present research, it is proposed that it is the physical act of cleansing that is crucial for the proposed cleansing effects to occur. In other words, individuals who actually physically undergo cleansing (i.e., embody cleansing) will demonstrate a higher likelihood of choosing an indulgent option. This argument is based on the literature on embodiment, which contends that individuals' own internal bodily states can subsequently affect their cognition and behavior. According to this view, categorical knowledge is "grounded" in the brain's modal systems (Marques 2006), and knowledge acquisition and knowledge use are processes that are grounded in the brain's modality-specific systems (Niedenthal et al. 2005; Wilson 2002). Furthermore, these theories contend that all cognition, including high-level conceptual processes, relies heavily on such grounding in either the modalities or the body, and that the embodied effects resulting from grounding are causal in nature (Niedenthal, Rohman, and Dalle 2002). For example, studies using fMRI technology show that viewing an object that is used for a certain action (i.e., a hammer) activate the brain area implicated in the actual performance of the actual action (Chao and Martin 2000).

Based on the assumption that cognition can be grounded in many ways, different theories have been proposed in attempt to explain how the process works. One of the first set of theories to support the grounded cognition view sprung from the cognitive linguistics field. Such theories contended that people's knowledge about their physical selves and their environment are represented metaphorically (i.e., Lakoff and Johnson 2003). Alternatively, theories of situated action propose that multiple systems implement perception, action, and cognition, and that learning reflects patterns of interaction with the environment (Barsalou 2008). Theories of

cognitive stimulation posit that a multimodal representation system is what results in various cognitive processes. Similarly, other simulation theories contend that individuals use their own simulation to understand others (Barsalou 2008).

Since the increase in support of the grounded cognition view, research across various domains has provided several applications of a grounded or embodied view of mental states. In a famous study by Wells and Petty (1980), subjects were instructed to nod their heads vertically or shake their heads horizontally while wearing headphones under the guise that the research was testing out the equipment. While nodding or shaking their heads, subjects heard either an agreeable or disagreeable message about a university-related topic. When they were later asked how much they agreed with the message, those who had nodded while hearing the message were more favorable than those who had shaken their heads, regardless of the type of message that was broadcast. Similarly, Tom, Pettersen, Lau, Burton, and Cook (1991) found that subjects who nodded their heads while viewing a series of objects preferred the objects that were shown to them while they were nodding, as opposed to new objects. Cacioppo and colleagues (1993) showed that novel Chinese ideographs that were presented to subjects during an approach behavior (i.e., pushing upward on a table from underneath) were rated more positively than were ideographs seen during an avoidance behavior (i.e., pushing downward on a table). Relatedly, Strack, Martin, and Stepper (1988) had subjects hold a pen in their mouth in a way that either inhibited or facilitated the muscles typically associated with smiling, and demonstrated that subjects' evaluations of a cartoon were higher when their facial position facilitated smiling.

CHAPTER 3: THE CURRENT RESEARCH

The current research extends the work on priming and embodiment effects in consumer behavior within the cleansing domain. More specifically, this work seeks to demonstrate the distinct roles of primed versus embodied cleansing, as well as the implications each can have in the context of indulgence behavior. It is argued that the embodiment of cleansing eliminates the negativity related to choosing an indulgent option from a choice set. However, it is also argued that the priming of cleansing will lead to the opposite effect. Stated more formally:

H1: Individuals will be more (versus less) likely to choose a more indulgent option when they embody (versus are primed with) cleansing.

Thus, it is predicted that by embodying cleansing, individuals will subsequently have a clean slate from which they can indulge, while being primed with cleansing first will restrict indulgence. The reasoning in predicting this differential pattern of effects draws support from prior work on goal priming and activation (e.g., Laran, Janiszewski, and Cunha 2008; Wheeler and Berger 2007). Research by Chartrand and colleagues (2008) has shown that priming can lead to the activation of goals. As such, it is posited that through priming, individuals will act according to a prime-relevant goal that becomes activated. Priming participants with cleansing should lead to goals regarding cleanliness and purity, and hence result in behavior that is consistent with these constructs (i.e., choosing a relatively less indulgent option from a choice set). On the other hand, it is expected that participants who embody cleansing fulfill the activated goal of being cleansed, thus giving themselves a license to choose a relatively more indulgent option. Based on the reasoning, the following hypothesis is proposed:

H2: Embodying (versus being primed with) a cleansing product (versus a neutral product) will result in cleansing goal fulfillment (versus activation).

In addition, this work seeks to extend the effects of priming and embodiment in domains beyond cleansing. It is proposed that if the priming of cleansing leads to goal activation and consequently less indulgence, while the embodiment of cleansing leads to goal fulfillment and results in more indulgence, then the reverse can also be possible with products representing an “opposite” construct. Specifically, one product domain that might demonstrate these results is that of hedonic products. If the effects of priming and embodiment hold as is argued, then the opposite pattern of results for hedonic products is expected, such that the priming of something hedonic should lead to activation of a hedonic goal and subsequently more indulgence, while the embodiment of a hedonic product should lead to the fulfillment of a hedonic goal, thus resulting in less indulgence. Thus, the third hypothesis is proposed:

H3: Individuals will be more (versus less) likely to indulge after embodying (versus being primed with) a cleansing (versus hedonic) product.

Lastly, this work further examines the underlying mechanism of these effects. In the context of the aforementioned process of goal activation and fulfillment arising from cleansing and hedonic products, it is argued that one factor to consider is guilt. It is posited that by fulfilling a cleansing goal, individuals experience less guilt, and therefore have a basis from which they can make more indulgent decisions, while the opposite is expected to occur when a cleansing goal is activated. Furthermore, it is also argued that the fulfillment of a hedonic goal will lead to more guilt (due to the association with the consumption of hedonic things), and lead to subsequently less indulgence, while the activation of a hedonic goal should lead to less guilt and more indulgence. These ideas are tested in the final hypothesis:

H4: Individuals will experience less (versus more) guilt after embodying (versus being primed with) a cleansing (versus hedonic) product.

STUDY 1

Method

One hundred sixty four participants from a large, northeastern urban university participated in this study for course credit. The study was run as a 2 (Product: Cleansing versus Neutral) X 2 (Condition: Prime versus Embodiment) between-subjects design. The Cleansing product used was a single-packaged Purell wipe; the Neutral control product was a pencil. All participants were given a picture of the product, but those in the Embodiment condition were given the actual product to try (see Appendix 1 for Products Used). To be consistent with the cover story that they were evaluating the product, all participants first answered a few filler questions about the stimuli that they had just seen (all items measured on a 7 point scale). Questions included how likely participants were to purchase the product in the future, how effective they thought it was, how good they thought the quality of the product was, as well as their general attitude toward the product (good/bad, positive/negative, desirable/undesirable, favorable/unfavorable, and likeable/dislikeable; $\alpha = .96$). Next, participants rated how cleansed they felt after testing the product on a 7-point scale (1 = not at all clean, 7 = very clean). Finally, to ensure that there were no differences in affect driving the results between conditions, such that participants who received the product felt more positive affect, participants answered the 20-item short-form Positive Affect Negative Affect Schedule (PANAS; Watson and Clark 1992).

After participants answered these measures, they were asked to imagine that they were at a local coffee shop and asked to choose a coffee drink from an available selection. Participants were presented with pictures and descriptions of three different coffee drinks (i.e., House Blend

Coffee, Creamy Cappuccino, and Decadent Chocolate Latte; see Appendix 1 for Drink Choice Set) that were selected based on results from a pretest using 79 participants from the same sample population. Paired sample t-tests indicated that the House Blend Coffee was considered the least indulgent ($M_{\text{House}} = 3.61$) and significantly less indulgent than the Creamy Cappuccino ($M_{\text{Cappuccino}} = 4.73$, $t(78) = -5.85$, $p < .001$), which was significantly different from the most indulgent Decadent Chocolate Latte ($M_{\text{Latte}} = 5.13$, $t(78) = -2.02$, $p < .05$; $M_{\text{House}} = 3.61$ versus $M_{\text{Latte}} = 5.13$, $t(78) = -6.13$, $p < .001$).

Finally, participants were told that as a token of appreciation, the researchers wanted to give them one *actual* snack item at the end of the experiment. Participants saw a picture of three different snacks (Stick of Sugar-free Gum, Pretzel, Chocolate Chip Cookie; see Appendix 1 for Snack Choice Set) and chose one. Again, these particular snack items were chosen based on a pretest using 79 participants from the same sample population. Paired sample t-tests indicated that participants rated the Sugar-free Gum significantly less indulgent than the Pretzel ($M_{\text{Gum}} = 2.90$ versus $M_{\text{Pretzel}} = 3.56$, $t(78) = -3.55$, $p < .01$) and the Pretzel was significantly less indulgent than the Chocolate Chip Cookie ($M_{\text{Cookie}} = 5.24$, $t(78) = -7.52$, $p < .001$; $M_{\text{Gum}} = 2.90$ versus $M_{\text{Cookie}} = 5.24$, $t(78) = -10.07$, $p < .001$).

Based on their responses on the snack choice, participants were given this snack as they exited the room. However, before exiting, participants completed the 14-item Cognitive Behavior Dieting Scale (e.g., “I have felt fat,” “I have planned out what I am allowed to eat for the day”; Martz, Sturgis, and Gustafson 1996) to control for participants’ dieting behavior affecting their choice of food items. Also, since embodying or trying the product is experiential by definition, participants were asked to fill out the 31-item Rational-Experiential Inventory (e.g.

“I am a very intuitive person,” “I am good at visualizing things”; Epstein et al. 1996) to measure their individual thinking styles.

Results

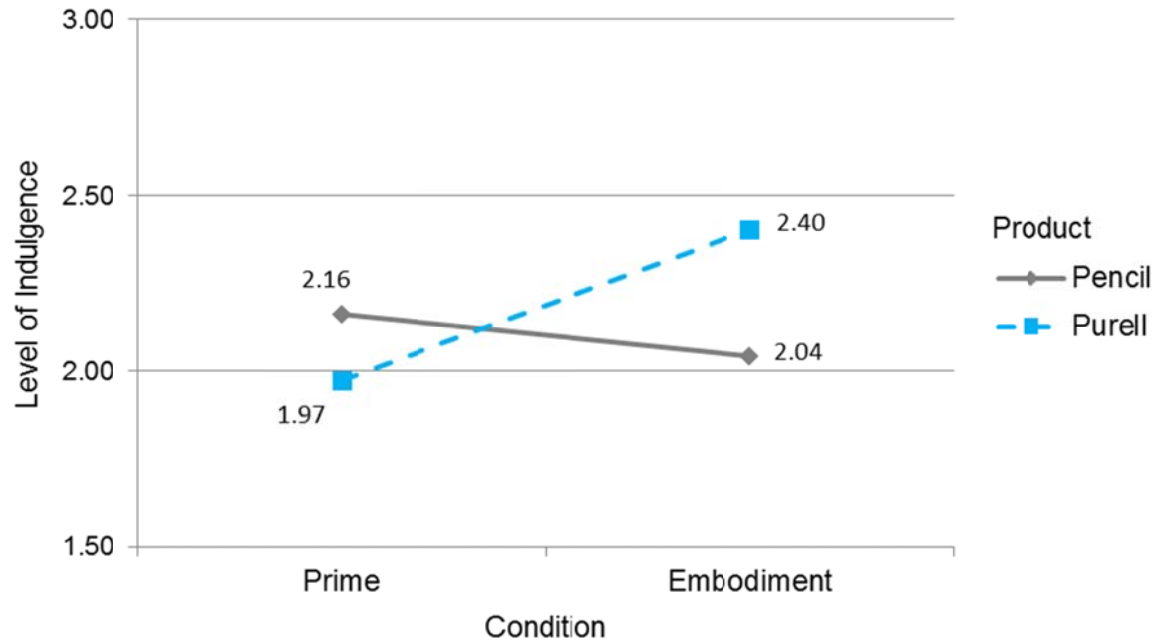
Check on Cognitive Associations. The product manipulation was successful, as indicated by an ANOVA on how cleansed participants felt. Results revealed that those who were in the Cleansing product condition were more likely to feel cleansed than those who were in the Neutral product condition ($M_{\text{Purell}} = 5.42$, $M_{\text{Pencil}} = 2.61$; $F(1, 160) = 114.17$, $p < .01$). Results also confirm that there was no difference between conditions ($F_s < 1$) on the short form PANAS scales (positive affect: interested, excited, strong, enthusiastic, proud, alert, inspired, determined, attentive, active; $\alpha = .90$; negative affect: distressed, upset, guilty, scared, hostile, irritable, ashamed, nervous, jittery, afraid; $\alpha = .90$), demonstrating that there were no differences in affect across the conditions.

Drink and Snack Choice. ANCOVAs on both the drink and snack selections as the dependent variables, Product and Condition as independent variables, and the Cognitive Behavioral Dieting Scale and Rational-Experiential Inventory as covariates revealed no effect of either covariate ($F_s < 1$). Therefore these covariates were dropped from further consideration and the analyses were conducted as ANOVA with Drink Selected and Snack Selected as dependent variables, and Product and Condition as independent variables.

Hypothetical Drink Selected. The Drink Selected was coded numerically from least indulgent to most indulgent (House Blend Coffee = 1, Creamy Cappuccino = 2, and Decadent Chocolate Latte = 3). Results revealed a significant Product X Condition interaction ($F(1, 160) =$

4.29, $p < .05$). Planned follow-up contrasts showed that participants who embodied Purell selected a more indulgent drink than those who were only primed with Purell ($M_{\text{PurellEmb}} = 2.40$ versus $M_{\text{PurellPrime}} = 1.97$; $F(1, 160) = 5.24$, $p < .05$). In addition, results indicated that participants who embodied Purell selected a more indulgent drink than those who embodied the pencil ($M_{\text{PurellEmb}} = 2.40$ versus $M_{\text{PencilEmb}} = 2.04$; $F(1, 160) = 4.82$, $p < .05$). Figure 1a illustrates these results.

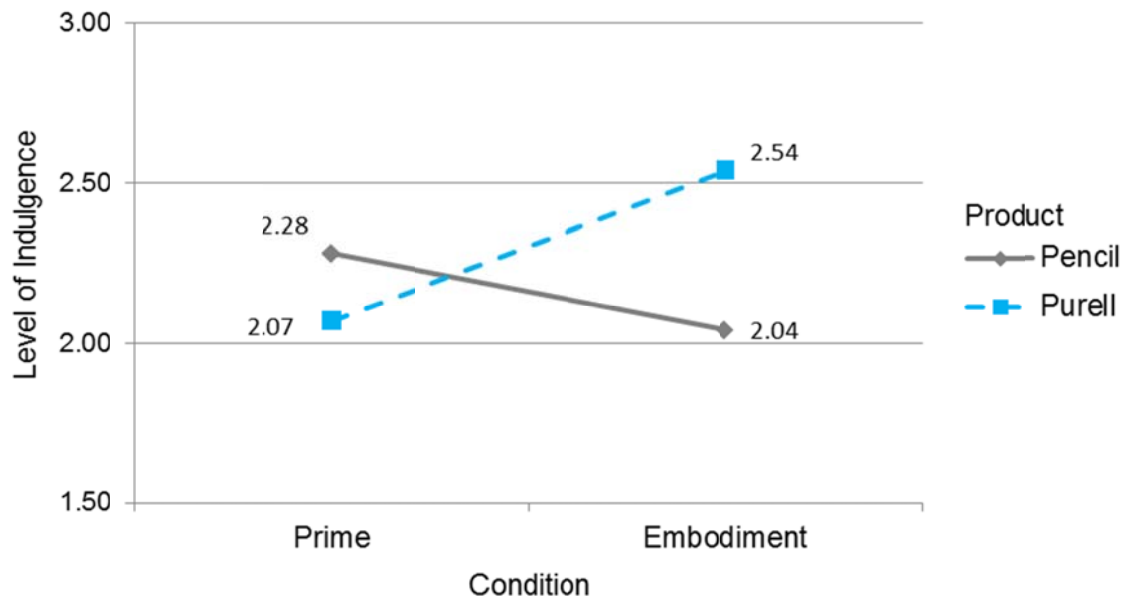
FIGURE 1A: The Effect of Product and Condition on Hypothetical Drink Choice



Actual Snack Selected. Once again, an ANOVA was conducted with Snack Selected as a dependent variable, and Product and Condition as independent variables. As in the Drink Selected choice analysis, the actual Snack Selected was coded numerically from least indulgent to most indulgent (Stick of Sugar-free Gum = 1, Pretzel = 2, and Chocolate Chip Cookie = 3). Results revealed a significant Product X Condition interaction ($F(1, 160) = 7.17$, $p < .01$).

Following a similar pattern to the Drinks Selected dependent variable, planned follow-up contrasts showed that participants who embodied Purell selected a more indulgent snack than those who were primed with Purell ($M_{\text{PurellEmb}} = 2.54$ versus $M_{\text{PurellPrime}} = 2.07$; $F(1, 160) = 6.20$, $p < .05$). Results also indicated that participants who embodied Purell selected a more indulgent snack than those who embodied the pencil ($M_{\text{PurellEmb}} = 2.54$ versus $M_{\text{PencilEmb}} = 2.04$; $F(1, 160) = 9.15$, $p < .01$). Figure 1b illustrates these results.

FIGURE 1B: The Effect of Product and Condition on Actual Snack Choice



Attitude Measures. Attitudes toward the products or quality expectations were not expected to differ across conditions. As anticipated, results of ANOVA with Product and Condition as independent variables demonstrated there were no significant interactions or main effects on how likely participants were to purchase the product in the future ($F < 1$), how

effective the product is ($F < 1$), the quality of the product ($F < 1$), or participants' general attitude toward the product ($F < 1$).

Discussion

The results from Study 1 confirm H1, therefore lending support to the notion that embodied cleansing increases the likelihood of selecting a relatively more indulgent option in both hypothetical and actual choice scenarios. Much like prior research has shown (i.e., Lee and Schwarz 2010a), participants who embodied Purell appeared to have cleaned their mental slate. With regard to indulgence, this translated into participants choosing relatively more indulgent options from a series of choice sets, presumably due to the notion that the embodiment of cleansing produced an opportunity for indulgence. On the contrary, participants who had embodied a neutral item, namely the pencil, were not as likely to choose an indulgent item, nor were participants who were primed with either a cleansing or neutral construct. Thus, by merely varying individuals' interactions with certain products, there were very different decision outcomes in terms of indulgence.

The next step was to examine the underlying process for these results. Specifically, the next study sought to explore whether the effects were due to a process reflecting the fulfillment and activation of individuals' goals. It was posited that the embodiment of cleansing, via the actual use of the Purell, resulted in the fulfillment of a cleansing goal that would then lead to choice of relatively indulgent items. However, it was also proposed that the mere priming of cleansing would result in the opposite effect, such that being primed with a cleansing product would result in the activation of a cleansing goal and hence lead individuals to become more

vigilant towards indulgence. Thus, the next study sought to examine this proposed underlying process by measuring the accessibility of cleansing goals through a response time measure of goal-related word recognition (Wilcox et al. 2009).

Importantly, Study 2 also set out to provide a stronger test of the hypotheses by utilizing a different stimulus. Due to the potential alternative explanation that embodying the Purell required more effort than using the pencil, more similar stimuli were used in the next study. Thus, the neutral product was a plain, fragrance-free lotion in a small cup for participants to try. To ensure that the stimuli were as equal as possible, a sample of Purell in a similar format (i.e., instead of the packets) was also used.

STUDY 2

Method

One hundred fifty eight participants from a large, northeastern urban university participated in this study. Similar to Study 1, Study 2 employed a design which included Purell and a plain, fragrance-free lotion. All participants were given a picture of the products, and half of the participants were given the actual product to try. Thus, the design was a 2 (Product: Cleansing versus Neutral) X 2 (Condition: Prime versus Embodiment) between-subjects design.

Following this initial task, the underlying process with respect to the extent to which specific goals would be fulfilled or activated by the stimuli was assessed using a lexical decision task in Direct RT computer software. Prior research has found that individuals' response times in a lexical decision task are faster when the target stimuli (i.e., letters appearing on the screen) are associated with an activated goal than when they are not (Förster, Liberman, and Higgins 2005; Wilcox et al. 2009). Participants were run in groups of 18, with each individual seated at his or her own computer station. First, participants read the instructions about the task, and continued onto a set of practice trials. They saw a fixation point (“+++”) which appeared for two seconds on the center of the screen. Next, participants saw a series of letters that either constituted an actual word (e.g., “book”) or nonword (i.e., “gujl”), for which they were asked to press the letter “w” on the keyboard if it was a word or “n” if it was a nonword. The directions emphasized that both the accuracy of responses as well as the speed should be weighed with equal importance. A total of 6 stimuli in a practice trial (3 neutral words and 3 nonwords) were included.

Immediately following the practice trial, participants moved onto the actual lexical decision task of interest. Participants saw a total of 35 words, including 20 nonwords, 10 neutral words, and 5 cleansing words. If the proposed ideas were accurate, it was expected that results would demonstrate slower response times for cleansing words from individuals who embodied the Purell, since those individuals will have presumably fulfilled their obligation of being “clean.” In contrast, it was expected that those who were only primed with Purell would have faster response times to these target words, since priming presumably only leads to the activation of the goal to be clean. No differences were predicted across the lotion conditions.

After the lexical decision task, participants’ behavior with regards to indulgent choice was assessed. Similar to the previous study, participants were provided with a series of coffee drink items in a hypothetical shopping scenario. However, to more accurately measure the extent to which participants would indulge, this choice task included a series of 7 items, and asked participants to indicate which one of the items they would choose (see Appendix 2 for Drink Choice Set).

Results

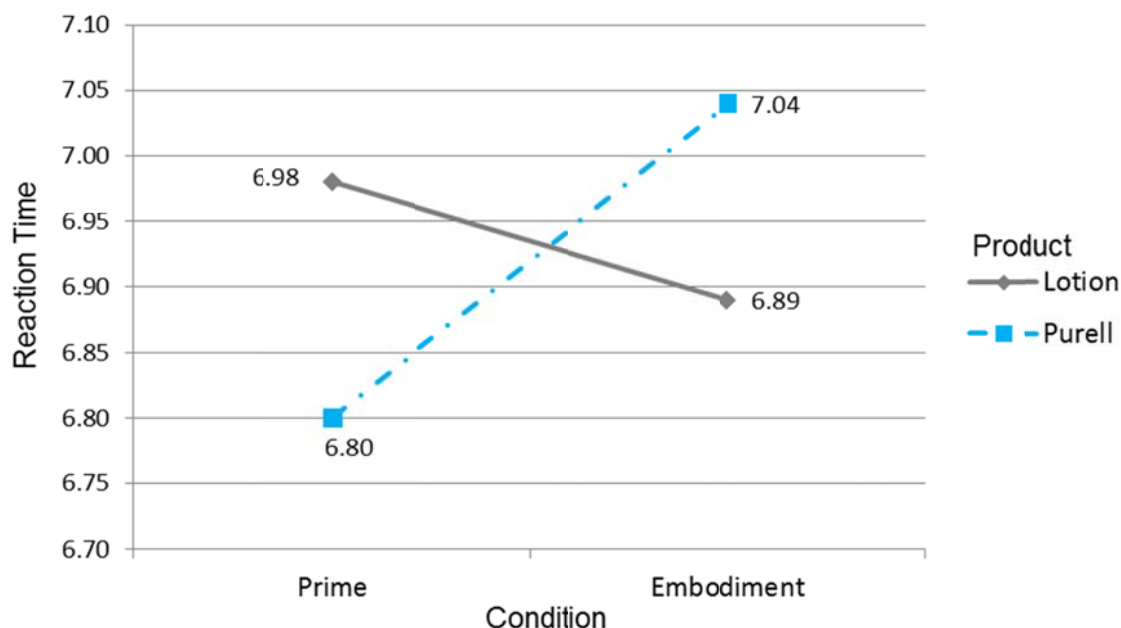
Reaction Time. Only correct responses were considered in the analysis, as well as those not greater than 3 standard deviations from the mean of each word. Before analyzing the data, a natural log transformation was performed, as has been done in prior work (Bargh and Chartrand 2000). Product and Condition were included as independent variables. The main dependent variable was participants’ response time to the cleansing-related words on the word list (i.e., unblemished, hygienic, untouched, immaculate, spotless). Since these cleansing words were

related, participants' reaction time to the average of these words ($\alpha = .76$) was examined as the dependent variable. Also included were participants' response times to the neutral words as a covariate to control for variability in response times between individuals.

Findings from an ANCOVA confirm the hypothesis. Results revealed a significant Product X Condition interaction ($F(1, 154) = 9.60, p < .01$). More specifically, participants who were merely primed with Purell were faster to respond to the cleansing words than those who embodied Purell ($M_{\text{PurellPrime}} = 6.80$ versus $M_{\text{PurellEmb}} = 7.04$; $F(1, 154) = 9.22, p < .01$). In addition, those who were primed with Purell were faster to respond to the cleansing words than those who were primed with the lotion ($M_{\text{PurellPrime}} = 6.80$ versus $M_{\text{LotionPrime}} = 6.98$; $F(1, 154) = 5.28, p < .05$). Furthermore, those who embodied the lotion were faster to respond than those who embodied Purell ($M_{\text{LotionEmb}} = 6.89$ versus $M_{\text{PurellEmb}} = 7.04$; $F(1, 154) = 4.35, p < .05$).

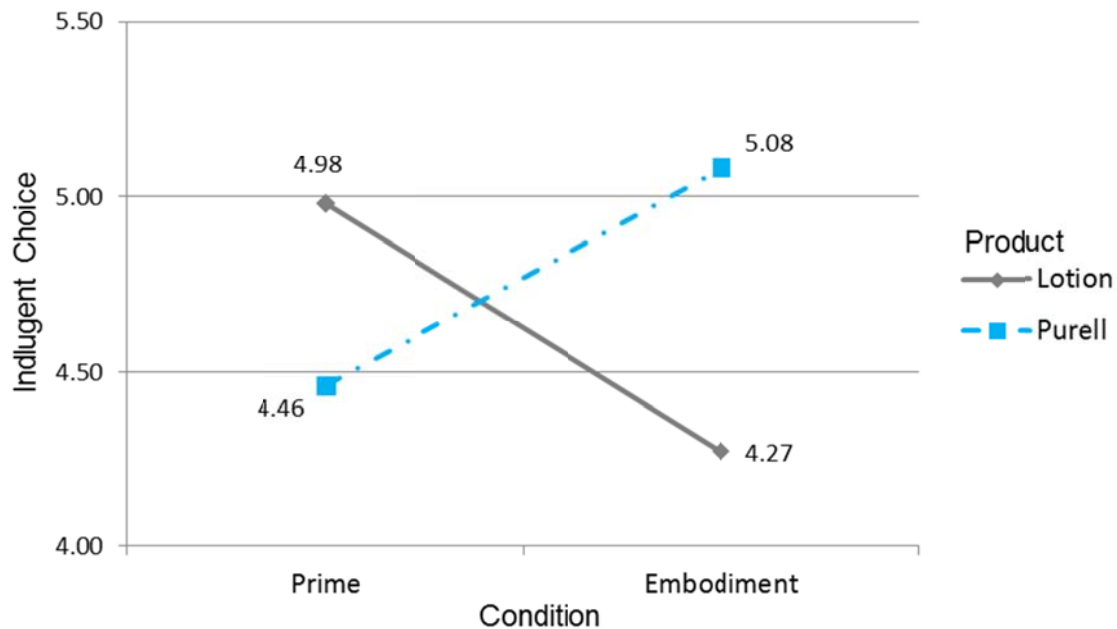
Figure 2a illustrates these results.

FIGURE 2A: The Effect of Product and Condition on Reaction Time



Indulgent Choice. To examine whether participants who embodied cleansing made more indulgent choices, responses to the choice task were examined. An ANOVA was conducted with Coffee Drink Choice as the dependent variable, and Product and Condition as independent variables. Results revealed a significant Product X Condition interaction ($F(1, 154) = 6.20, p < .05$). Following a similar pattern to the findings from Study 1, planned follow-up contrasts showed that participants who embodied Purell selected a more indulgent item than those who embodied the lotion ($M_{\text{PurellEmb}} = 5.08$ versus $M_{\text{LotionEmb}} = 4.27$; $F(1, 154) = 4.89, p < .05$). Additionally, although not significant, a directional effect was found, suggesting that participants who embodied Purell chose a more indulgent item than those who were merely primed with Purell ($M_{\text{PurellEmb}} = 5.08$ versus $M_{\text{PurellPrime}} = 4.46$; $F(1, 154) = 2.52, p = .11$). Figure 2b illustrates these results.

FIGURE 2B: The Effect of Product and Condition on Indulgent Choice



Discussion

The results of Study 2 suggest that embodying cleansing fulfills one's cleansing-related goals, thus providing a clean slate with which to indulge. When individuals are merely primed with cleansing, however, they experience an activation of cleansing-related goals, and as a result, are less likely to indulge. Importantly, the utilization of a sample of lotion as the neutral product provides further evidence to suggest that this effect occurs only when individuals actually, physically cleanse themselves with a cleansing product. By providing participants with a very similar, albeit neutral, product the potential alternative explanation regarding greater effort through the embodiment of a product can be ruled out. Additionally, Study 2 provides further evidence to support the idea that embodying cleansing leads individuals to be more likely to indulge.

While the findings thus far have demonstrated that the embodiment of cleansing can lead individuals to indulge, the next step was to determine whether there are other factors that can be embodied that might result in the opposite effect, namely less indulgence. It was reasoned that since individuals indulged more after embodying cleansing (i.e., due to the clean slate effect), there might be other product traits that may lead individuals to be less likely to indulge because of a satiation-like effect. One type of product trait posited is something hedonic in nature, and conveys the idea of indulging. If consumers embody this type of product by simply interacting with it, indulgence is expected to be lower.

Several hedonic and non-hedonic products were pretested for their suitability as stimuli for the next experiment. A group of 69 participants were asked to rate how hedonic they felt the items were, rated on a 7-point scale (1 = not at all, 7 = very much). Results demonstrated that

Gourmet magazine was considered to be the most hedonic by participants, while a book entitled *Clean* was considered to be the least hedonic ($M_{\text{Gourmet}} = 4.51$ versus $M_{\text{Clean}} = 3.07$; $t(68) = 5.70$, $p < .001$). Therefore, these two products were used as stimuli in the next experiment.

STUDY 3

Method

One hundred ninety eight participants were recruited to participate in this study, which was conducted through an online website. This particular survey website recruits participants to perform short online survey tasks. Researchers post electronic surveys onto the website, and participant workers complete them in return for a small fee. Thus, this website was chosen as the means of data collection for the third study.

Participants were randomly assigned to one of two product types (*Clean* book versus *Gourmet* Magazine; see Appendix 3 for Products Used). In addition, and due to the computerized nature of this study, Study 3 relied on a visualization task in order to get half of the participants to embody the products (Zhong, Strejcek, and Sivanathan 2010). Therefore, participants were either primed with general information about the product only, or were provided with a detailed description of a hypothetical instance during which they had “used” the product. Thus, the design for this study was a 2 (Product: Cleansing versus Hedonic) X 2 (Condition: Prime versus Embodiment) between-subjects design.

Participants were first given a brief description of the tasks involved in the research, and asked whether they consented. Those who indicated that they consented were directed to another web page on which they were provided with a link to the survey. Once in the survey, participants were first shown a product on the screen and asked to take a few moments to examine it. Participants in the Cleansing product condition saw an image of the *Clean* book, while those in the Hedonic product condition saw one for *Gourmet* magazine. Additionally, all participants were given a short paragraph about the product to read. For half of the participants, this

paragraph was a simple description about the stimuli (Prime; i.e., “This magazine contains articles with useful information.”), while for the other half it consisted of several detailed sentences that captured a hypothetical experience during which participants experienced the product (Embodiment; i.e., “I pick up the magazine and touch its glossy pages.”). To ensure that participants were fully cognizant of the priming manipulation, they were asked to retype the paragraph they had just read into a textbox, under the allegation that the researchers were interested in participants’ transcription abilities. Finally, participants were asked to indicate how cleansed they felt, and were then given the same hypothetical shopping scenario as in the first study. Participants were presented with the same drink choice scenario, as well as snack selection with the exception that participants were told to imagine that they would be receiving the snack (rather than actually being able to receive it).

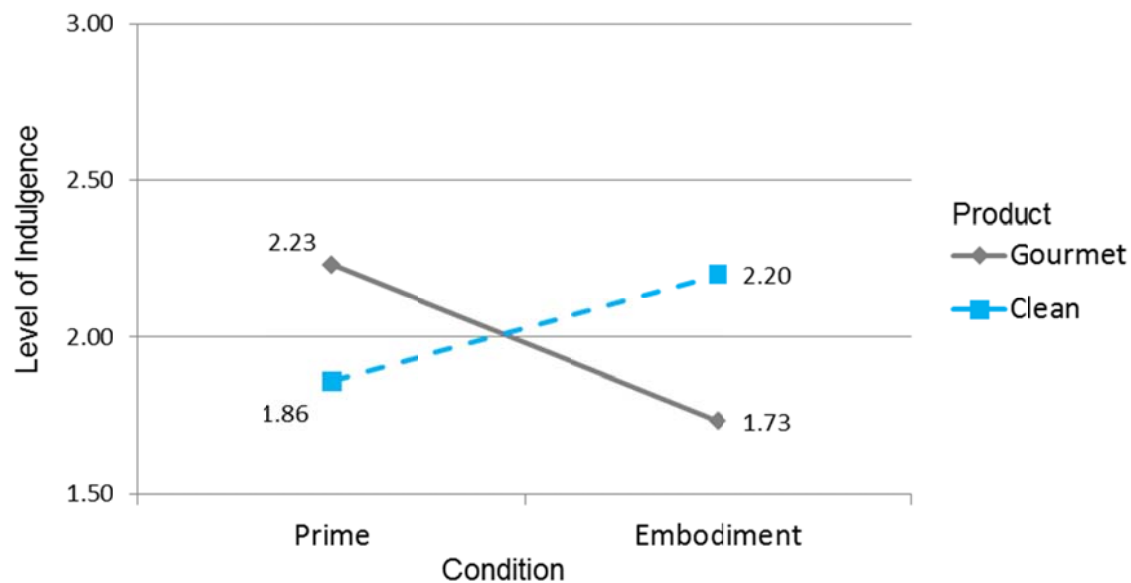
Results

Check on Cognitive Associations. An ANOVA was conducted with Product to assess whether the manipulation was successful. Although results are insignificant, there is a directional pattern of means to suggest that those in the *Clean* book condition were more likely to feel cleansed than those who were in the *Gourmet* magazine condition ($M_{\text{Clean}} = 4.44$, $M_{\text{Gourmet}} = 4.22$, $F < 1$).

Drink Selected. An ANOVA was conducted with Drink Selected as a dependent variable, and Product and Condition as independent variables. Results revealed a significant Product X Condition interaction ($F(1, 194) = 13.09$, $p < .001$). Planned follow-up contrasts showed that participants who embodied *Clean* selected a more indulgent drink than those who embodied

Gourmet ($M_{\text{CleanEmb}} = 2.20$ versus $M_{\text{GourmetEmb}} = 1.73$; $F(1, 194) = 7.73$, $p < .01$). Additionally, participants primed with *Gourmet* selected a more indulgent drink option than those primed with *Clean* ($M_{\text{GourmetPrime}} = 2.23$ versus $M_{\text{CleanPrime}} = 1.86$; $F(1, 194) = 5.40$, $p < .05$). Within the *Gourmet* condition, those who were primed chose a more indulgent drink option than those who embodied the magazine ($M_{\text{GourmetPrime}} = 2.23$ versus $M_{\text{GourmetEmb}} = 1.73$; $F(1, 194) = 7.94$, $p < .01$). Finally, results suggested a significant contrast within the *Clean* condition, as those who embodied the book chose a more indulgent drink option than those who were only primed with it ($M_{\text{CleanEmb}} = 2.20$ versus $M_{\text{CleanPrime}} = 1.86$; $F(1, 194) = 5.16$, $p < .05$). Figure 3a illustrates these results.

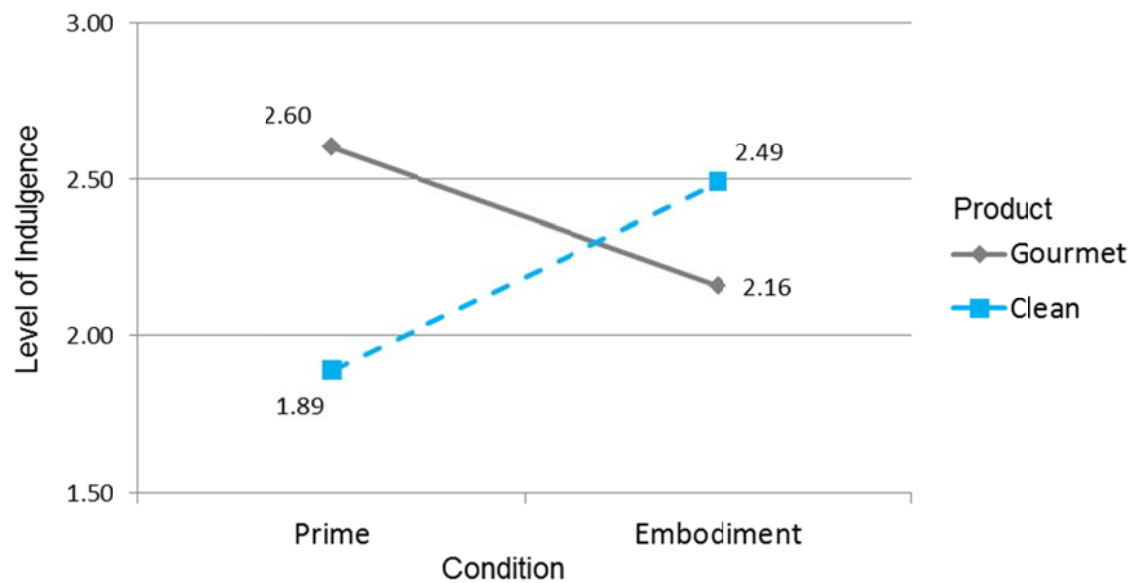
FIGURE 3A: The Effect of Product and Condition on Indulgent Drink Choice



Snack Selected. An ANOVA was conducted with *Snack Selected* as a dependent variable, and *Product* and *Condition* as independent variables. Results revealed a significant *Product X Condition* interaction ($F(1, 194) = 23.89$, $p < .001$). Planned follow-up contrasts showed several

significant contrasts. Firstly, participants who were primed with *Gourmet* selected a more indulgent snack than those primed with *Clean* ($M_{\text{GourmetPrime}} = 2.60$ versus $M_{\text{CleanPrime}} = 1.89$; $F(1, 194) = 23.91$, $p < .001$). Additionally, there was a significant effect for participants who embodied *Clean* compared to those who embodied *Gourmet* ($M_{\text{CleanEmb}} = 2.49$ versus $M_{\text{GourmetEmb}} = 2.16$; $F(1, 194) = 4.49$, $p < .05$). The results also demonstrated that participants primed with *Gourmet* chose a more indulgent option than those who embodied *Gourmet* ($M_{\text{GourmetPrime}} = 2.60$ versus $M_{\text{GourmetEmb}} = 2.16$; $F(1, 194) = 7.31$, $p < .01$), and those who embodied *Clean* choose a more indulgent item than those who were primed with *Clean* ($M_{\text{CleanEmb}} = 2.49$ versus $M_{\text{CleanPrime}} = 1.89$; $F(1, 194) = 19.11$, $p < .001$). Figure 3b illustrates these results.

FIGURE 3B: The Effect of Product and Condition on Indulgent Snack Choice



Discussion

The findings from Study 3 provide additional support for the idea that embodying cleansing, even to a more abstract extent (i.e., through a visualized simulation of interacting with a product), can lead individuals to be more likely to choose an indulgent option from a choice set. Interestingly, this effect did not occur when individuals were solely primed with a cleansing product without embodying it. In fact, results indicate that these individuals were much less likely to choose an indulgent product. Furthermore, evidence suggests that embodying specific other characteristics can lead to the opposite effect. In particular, when individuals embodied a hedonic product, they appeared to have fulfilled their indulgence, and thus were less likely to choose relatively indulgent options in subsequent choice tasks. When participants were primed with a hedonic product, however, they were more likely to choose an indulgent product, presumably because just priming them with such a product activated a desire to indulge.

Although the effects of embodiment and priming were found to reverse with a hedonic product (i.e., *Gourmet* magazine), it can be argued that the hedonic product used was too similar to the domain we under study (i.e., indulgent food choices). Thus, the goal of the final study was to examine the effects found in Study 3 with a different product. More specifically, Study 4 sought to determine whether the process of embodiment and priming can occur on a more abstract level, with a non-food product that only tangentially represents the construct under study. If the embodiment of specific characteristics is responsible for the effects observed thus far, then Study 4 should be able to replicate the effects with even more generalized products.

Importantly, another aim of the final study was to determine whether the embodiment of a cleansing product led individuals to indulge through a process of decreased guilt. Recall that it

was posited that embodying cleansing leads to the fulfillment of a cleansing goal, which thus allows individuals to perceive a clean mental slate. As such, it was reasoned that individuals who embody cleansing will also experience less guilt. It was predicted that an opposite pattern would occur for those only primed with cleansing, since this should lead to an activation of a cleansing goal, and thus a heightened vigilance about things that stand counter to the goal. As well, a natural question to ask is how guilt functions in the embodiment and priming of something hedonic. It was reasoned that there would be more guilt and a lower likelihood of choosing an indulgent option when individuals embody (versus are primed with) a hedonic product. These ideas were examined in the final study.

STUDY 4

Method

In a design similar to Study 3, one hundred and three participants were recruited for this study, which was run through an online website. After reading the initial instructions and consenting to the research, participants were navigated to the next web page, where they were randomly assigned to one of two product types (Purell Hand Sanitizer versus St. Ives Naturally Indulgent Lotion). All participants were told that they had come across the product while shopping at a local store. Half of the participants were only given a description of the product, while the other half were given a description of the product as well as instructions to vividly imagine that they were trying it out. To further enhance the vividness of the latter manipulation, participants were told to take a moment to rub their hands together as if they were actually trying the product, under the guise that research has shown that physically simulating a motion related to a product leads individuals to make better choices. Therefore, the design for this study was once again a 2 (Product: Cleansing versus Hedonic) X 2 (Condition: Prime versus Embodiment) between-subjects design.

After viewing the picture of the product and its description, participants were asked to indicate how cleansed they felt. Next, participants went on to answer several questions assessing their current guilt state. In particular, participants saw a list of 3 words, for which they were asked to indicate how they felt in relation to those words (i.e., Guilty, Dirty, Bad; 1 = not at all, 7 = very much). Lastly, participants were asked to imagine that they had come across a café drinks

menu, and had to choose a maximum of two drinks (see Appendix 4 for Café Drinks Menu). They were asked to indicate the exact type and size of the items they would buy.

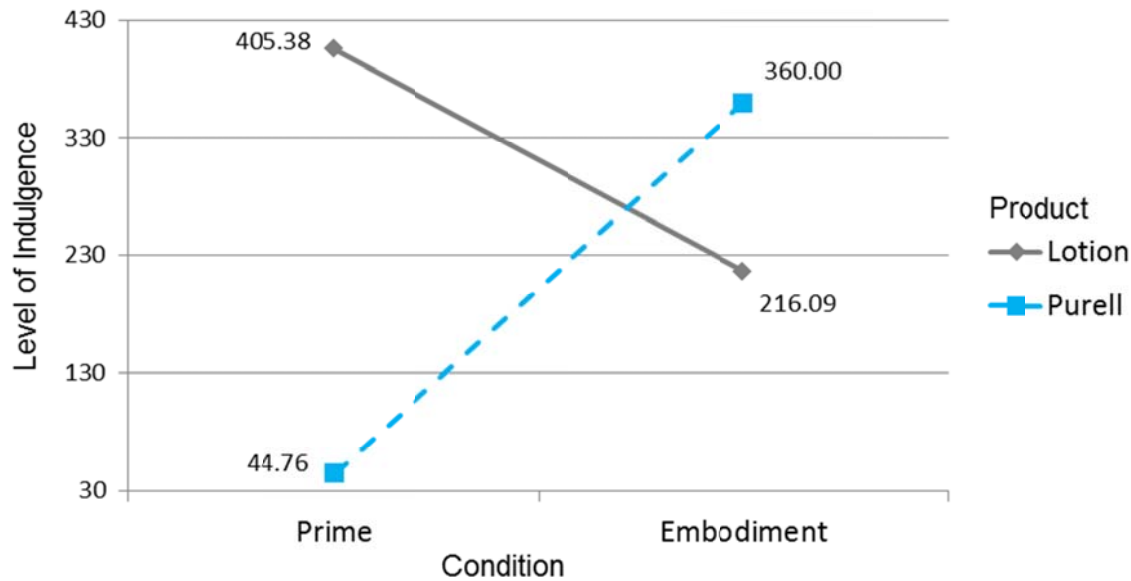
Results

Check on Cognitive Associations. The product manipulation was successful, as indicated by an ANOVA on how cleansed participants felt. Results revealed that those who were in the Cleansing product condition were more likely to feel cleansed than those who were in the Hedonic product condition ($M_{\text{Purell}} = 5.62$, $M_{\text{Lotion}} = 4.69$; $F(1, 84) = 8.62$, $p < .01$).

Café Drinks Selected. The total calories for the drink items that participants selected from the café menu were calculated. After obtaining these calculations, an ANOVA for this dependent variable based on Product and Condition was conducted. Results indicated a Product X Condition interaction effect similar to the previous study ($F(1, 84) = 16.79$, $p < .001$), thus lending further support for H3. Planned follow-up analyses showed several significant contrasts. Firstly, results demonstrated that those who embodied the Purell chose more indulgent café drink items than those merely primed with Purell ($M_{\text{PurellEmb}} = 360.00$ versus $M_{\text{PurellPrime}} = 44.76$; $F(1, 84) = 11.76$, $p < .01$). Furthermore, the opposite pattern of results was seen within the Lotion condition. Namely, those who embodied the Lotion chose less indulgent café drink items than those only primed with Lotion ($M_{\text{LotionEmb}} = 216.09$ versus $M_{\text{LotionPrime}} = 405.39$; $F(1, 84) = 5.34$, $p < .05$). In addition, although not significant, means were directional and thus support the hypothesis within the Embodiment condition, such that those who embodied the Purell chose more indulgent café drink items than those who embodied the Lotion ($M_{\text{PurellEmb}} = 360.00$ versus $M_{\text{LotionEmb}} = 216.09$; $F(1, 84) = 2.55$, $p = .11$). Finally, within the Prime condition, those primed

with the Lotion chose significantly more indulgent drink items than those primed with Purell ($M_{\text{LotionPrime}} = 405.39$ versus $M_{\text{PurellPrime}} = 44.76$; $F(1, 84) = 18.44$, $p < .001$). Figure 4a demonstrates these results.

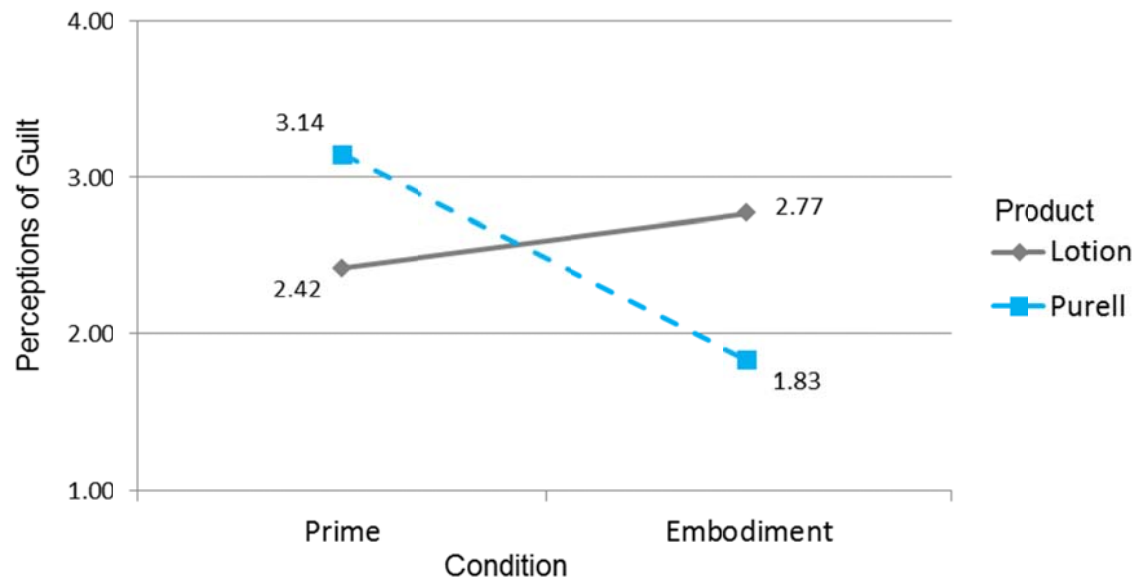
FIGURE 4A: The Effect of Product and Condition on Total Drink Calories



Perceptions of Guilt. To examine the role of guilt in the process of the embodiment and priming of cleansing and hedonic products, the extent to which individuals indicated they felt guilty after the manipulation was assessed. Therefore, an ANOVA with the variable Guilty as a dependent variable, and Product and Condition as independent variables was run. Results revealed a significant Product X Condition interaction ($F(1, 84) = 4.05$, $p < .05$). Planned follow-up contrasts showed that participants who embodied the Purell felt less guilty than participants who were primed with Purell ($M_{\text{PurellEmb}} = 1.83$ versus $M_{\text{PurellPrime}} = 3.14$; $F(1, 84) = 4.58$, $p < .01$). Additionally, although not significant, means were directionally supportive within the embodiment condition, such that participants who embodied the Purell indicated less guilt than

those who embodied the lotion ($M_{\text{PurellEmb}} = 1.83$ versus $M_{\text{LotionEmb}} = 2.77$; $F(1, 84) = 2.41$, $p = .13$). Figure 4b illustrates these results.

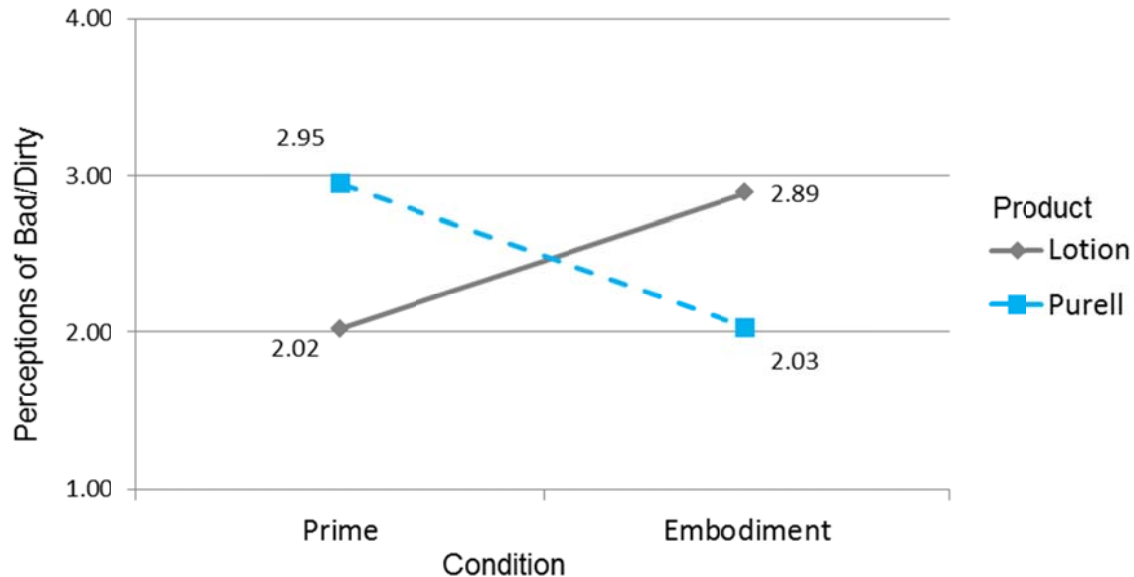
FIGURE 4B: The Effect of Product and Condition on Perceptions of Guilt



Perceptions of Bad/Dirty. As a second step in assessing participants' perception of guilt after the manipulations, two other, related variables, namely Bad and Dirty, were examined. An ANOVA was conducted with the composite measure Bad/Dirty ($\alpha = .82$) as a dependent variable, and Product and Condition as independent variables. Similar to the Guilty dependent variable, results revealed a significant Product X Condition interaction ($F(1, 84) = 6.53$, $p < .05$). More specifically, planned follow-up contrasts demonstrated an insignificant, yet directionally supportive, pattern of results, such that participants who embodied the Purell felt less bad and dirty than participants who were primed with Purell ($M_{\text{PurellEmb}} = 2.03$ versus $M_{\text{PurellPrime}} = 2.95$; $F(1, 84) = 3.10$, $p = .08$). Within the Embodiment condition, those who embodied the Purell felt less bad and dirty than those who embodied the lotion ($M_{\text{PurellEmb}} = 2.03$ versus $M_{\text{LotionEmb}} = 2.89$;

$F(1, 84) = 2.82, p = .10$). In addition, participants who embodied the lotion expressed feeling bad and dirty to a greater extent than those who were primed with the lotion ($M_{\text{LotionEmb}} = 2.89$ versus $M_{\text{LotionPrime}} = 2.02; F(1, 84) = 3.47, p = .07$). Lastly, within the Prime condition, those who were primed with Purell felt more bad and dirty than those primed with the lotion ($M_{\text{PurellPrime}} = 2.95$ versus $M_{\text{LotionPrime}} = 2.02; F(1, 84) = 3.79, p = .06$). Figure 4c illustrates these results.

FIGURE 4C: The Effect of Product and Condition on Perceptions of Bad/Dirty



Mediating Role of Perceptions of Guilt and Bad/Dirty on Café Drinks Selected. To examine the relationship between the manipulations and the guilt-related variables, a mediation analysis was run. The analysis that was conducted using the model 6 of the macro PROCESS developed by Hayes (2012) indicates mediation (Zhao, Lynch, and Chen 2010), supporting H4. Specifically, the interaction between Product and Condition as the predictor and Total Drinks Calories as the dependent variable were included. The two mediators, namely Guilty and

Bad/Dirty, were included in sequence with Guilty as the most proximal mediator, followed by Bad/Dirty. Also included were the main effects of Product and Condition as covariates in the model to maintain the structure of the multiple regression equation. As predicted, the mediation effect was significant with 1,000 bootstraps and a 95% confidence interval for the indirect effect excluding zero ($\beta = 47.08$, $CI = [2.56 \text{ to } 157.59]$).

Discussion

The results of Study 4 provide further support for the effects of embodiment and priming for cleansing and hedonic products. Replicating the results from previous studies, findings suggest that when individuals embody a cleansing product, they subsequently choose more indulgent items than when they are only primed with cleansing. However, an opposite pattern of results occurs with regards to the embodiment and priming of hedonic products, even when those products represent indulgence on a more abstract level. Furthermore, results from Study 4 provide support for the notion that the embodiment of a cleansing product leads to less feelings of guilt and a sense of being bad and dirty, while the priming of cleansing leads to elevated feelings (and the opposite pattern holds true for the hedonic product conditions). Thus, Study 4 sheds light on the underlying process of the effects of the embodiment and priming of cleansing and hedonic products, demonstrating a sequential relationship between feelings of guilt, a sense of being bad and dirty, and indulgent choice.

CHAPTER 4: GENERAL DISCUSSION

The main goal of this research was to understand how embodying certain products that hold particular representations for individuals can influence indulgence behavior. Results from four studies demonstrate that when individuals embody a cleansing product, they are more likely to choose an indulgent item from a choice set that contains several items ranging in indulgence. Additionally, the research provides support to indicate that different behavior can result from embodying versus priming cleansing stimuli. In fact, findings suggest that priming the concept of cleansing actually leads to an opposite effect, as individuals who are only primed with cleansing tend to be less likely to choose an indulgent option. Furthermore, results also suggest that when individuals embody products that are associated with other concepts such as hedonic stimuli, they may be less likely to choose an indulgent option, but be more likely to choose an indulgent option when they are only primed with such concepts.

Based on the findings, a goal-based explanation to account for the results was proposed. Generally, it was posited that when individuals embody a product related to cleansing, it gives them a clean slate from which they subsequently indulge. In a similar fashion, it was proposed that when individuals embody a hedonic product, they may feel that embodying it is a form of (symbolically) consuming it. On the contrary, however, merely priming individuals with such objects may elicit typical, known priming effects. For example, only priming individuals with a cleansing product might activate constructs associated with cleansing, such as cleanliness, purity, and chastity, which can translate into acting prudently with one's choices and hence not choosing an indulgent option. When hedonic products are only primed, on the other hand, an activation of

the desire for indulgence is expected, and thus, more indulgent and “satisfying” options are chosen.

As a result of this mechanism of goal activation and fulfillment, this work was also able to determine the important role of guilt in the process. Findings suggest that the embodiment and priming of cleansing and hedonic products lead to differential effects in terms of guilt and how bad and dirty one feels. Consequently, findings demonstrate a relationship between embodiment and priming and the guilt variables, which in turn influences the indulgent choices one makes. Thus, these findings lend support to the theory of embodied and primed cleansing effects in consumer behavior.

Contribution

The findings make several important theoretical contributions to the literature. Firstly, this research contributes to the knowledge about the difference between priming and embodiment. Throughout the research, findings suggest that the interaction with products led to very different results than just priming alone. Thus, the findings shed new light on the process of embodiment and priming, and more specifically regarding goal fulfillment. Based on findings that suggest that it is priming that increases indulgence (Shiv and Fedorikhin 2002), the research shows that embodying certain products may make individuals more (or for certain products, less) likely to do so. Finally, the results demonstrate that embodiment can perhaps be another way in which individuals feel more or less likely to indulge. By embodying an object associated with cleansing, individuals might feel licensed to choose that triple chocolate cake slice in place of a fruit salad. In addition, the findings also contribute to the general literature on embodiment.

Much like prior findings regarding the effects of embodied cleansing on other consumer behavior (Lee and Schwarz 2010a, 2010b; Zhong and Liljenquist 2006), this work suggests that embodied cleansing in the domain of food indulgence can lead to a higher likelihood of indulgence.

Implications

The results obtained thus far may have several implications. Importantly, these findings can provide insight for individuals' behavior with regard to consuming, and more particularly, eating. If cleansing can lead individuals to choose indulgent options, then individuals who are watching their consumption (i.e., dieters) might benefit from knowledge about this effect. As an additional point, perhaps interacting with a hedonic item might prevent the choice of indulgent options. Furthermore, the findings provide information for the effect of priming on indulgent behavior, which may also lend insight for such consumers (i.e., priming consumers with cleansing-related constructs to prevent indulgence).

Limitations

Although the current research provides support for the theory of the differential effects of embodied versus primed cleansing, there are several limitations worth noting. Firstly, one of the most substantial issues concerns the validity of the methodology that was utilized. Since the research was conducted in a laboratory environment, it may be argued that the results were limited. Thus, a better assessment may include a more realistic scenario (i.e., a field study).

Additionally, although this research attempted to assess the underlying mechanisms in Study 2, further examination is needed to fully explore the process. If the act of cleansing fulfills cleansing goals and provides a license for indulgence, more comprehensive evidence is necessary to establish the link. Furthermore, although support for the role of the priming and embodiment of cleansing and hedonic products is provided (i.e., Study 3 and Study 4), there were limitations with regards to the methodology used. For example, in those studies, one may argue that the products used were too suggestive, and that the results could have been driven by demand effects. Future research should attempt to address these issues by utilizing products that may be less directly linked to the constructs of cleansing and indulgence.

Future Research

Given the implications that the findings may have, it may be worthwhile to examine other domains in which embodiment may affect behavior. For example, research might explore the effects of embodied cleansing on individuals' behavior with regard to spending money, taking risks, or engaging in maladaptive behavior. If the effects can generalize, one would expect to see that individuals who cleanse, and hence provide themselves with a clean slate, might be more likely to partake in these behaviors. Additionally, another future research direction might include an examination of the effects that were observed on actual consumption quantities, with particular regard to food. If the clean slate explanation for the effects is robust, then it is likely that individuals who cleanse themselves prior to eating some indulgent food will be more likely to eat more of that food. Finally, since the research only looked at the effects of embodied cleansing before individuals made a choice, it may be interesting to determine whether the

timing of such action changes individuals' perceptions of indulgence behavior. Would the embodiment of cleansing after indulging bias perceptions of how much one consumes?




Furthermore, an additional question to ask is how long these effects last. These questions may be worthwhile to examine in future research.

APPENDIX 1: STIMULI USED IN STUDY 1



Products Used



Drink Choice Set

<p>House Blend Coffee</p> <p>Coffee brewed from a blend of Columbian coffees and filtered water. Served with milk and sweetener.</p> 	<p>Creamy Cappuccino</p> <p>Espresso brewed from a blend of Columbian coffees and filtered water. Served with steamed milk and topped with foam.</p> 	<p>Decadent Chocolate Latte</p> <p>Espresso brewed from a blend of Columbian coffees and filtered water. Served with steamed milk, blended with rich chocolate, and topped with whipped cream.</p> 
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Snack Choice Set

<p>Stick of Sugar-free Gum</p> 	<p>Pretzel</p> 	<p>Chocolate Chip Cookie</p> 
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APPENDIX 2: STIMULI USED IN STUDY 2

Products Used

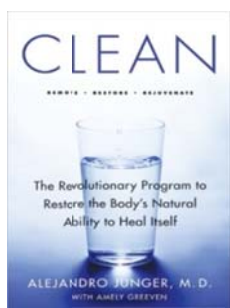


Drink Choice Set






APPENDIX 3: STIMULI USED IN STUDY 3

Products Used



Drink Choice Set

<p>House Blend Coffee</p> <p>Coffee brewed from a blend of Columbian coffees and filtered water. Served with milk and sweetener.</p> 	<p>Creamy Cappuccino</p> <p>Espresso brewed from a blend of Columbian coffees and filtered water. Served with steamed milk and topped with foam.</p> 	<p>Decadent Chocolate Latte</p> <p>Espresso brewed from a blend of Columbian coffees and filtered water. Served with steamed milk, blended with rich chocolate, and topped with whipped cream.</p> 
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Snack Choice Set

<p>Stick of Sugar-free Gum</p> 	<p>Pretzel</p> 	<p>Chocolate Chip Cookie</p> 
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APPENDIX 4: STIMULI USED IN STUDY 4

Products Used in Study



Café Menu Drinks Choice Set

Coffee / Espresso Drinks	12 OZ.	16 OZ.	20 OZ.
Hot Tea	\$2.29	\$2.69	\$3.09
Regular Coffee	\$2.29	\$2.69	\$3.09
Iced Cafe Latte	\$3.49	\$3.89	\$4.29
Cappuccino	\$3.19	\$3.59	\$3.99
Iced Chai Latte	\$3.49	\$3.89	\$4.29
Mocha Latte	\$3.49	\$3.89	\$4.29
Caramel Macchiato	\$3.49	\$3.89	\$4.29

ESSAY 2
THE PURELL EFFECT: CLEANSING THROUGH MERE TOUCH

CHAPTER 1: INTRODUCTION

Imagine that one day you are shopping at a local drugstore. On this occasion, you are looking to pick up only a few items that you need. You take one of the store's shopping baskets and proceed to finding your items. You first find the bottle of Purell Hand Sanitizer you were looking for, and place it in your basket. Next, you find some cat litter and also put it in your basket. However, because the basket is so small, you end up having to rest the cat litter on top of the bottle of Purell. Although you probably don't think of it at the time, is it possible that the cleansing product coming in contact with the cat litter can positively affect your perceptions of the litter?

Undoubtedly, there is much industry data documenting the important role of cleansing products in consumers' lives. Companies selling products like hand sanitizers, disinfectant wipes, and other products containing a sanitizing ingredient have experienced growing sales (Alazraki 2009). For example, sales surges in categories such as hand sanitizers have been documented to have grown over 200% in a single year when health threats such as H1N1 surface (Lempert 2010). These products have even been credited with reducing the spread of infection in a hospital to reducing elementary school absenteeism (Dyer, Shinder, and Shinder 2000; MacDonald et al. 2004). In fact, the emphasis on cleansing has become so popular that it has reached worldwide proportions, with October 15th being recently declared "Global Handwashing Day" (Forgione 2010).

Yet despite all the industry evidence, little research has examined how cleansing products work to affect consumers' perceptions beyond the physical domain. Given the prevalent role that

cleansing products have for consumers, an interesting and important question that arises is how these products can positively affect consumers' cognitions and behavior. Although a few attempts to examine this issue have been made within the consumer behavior literature, most research has mainly been limited to examining the effects of cleansing products within a moral domain (i.e., Lee and Schwarz 2010a; Zhong and Liljenquist 2006; but see Lee and Schwarz 2010b). The current research seeks to build on this literature by demonstrating how cleansing products can affect consumption decisions more specifically. In particular, this work examines the positive role that cleansing products have on other products through mere contact. In exploring this effect, this research draws support from the literature on cleansing and contagion to propose a theory of a "cleansing contagion" effect arising from cleansing products. Based on the argument, findings demonstrate that cleansing products can undo the influence of even very negative products they come in contact with because of the strong representations cleansing products hold. Importantly, findings also show how this effect is unique only to cleansing products. The work contributes to the literature by introducing a new mechanism through which cleansing can occur via mere touch.

In the following sections, theoretical support for the proposed effects is presented. More specifically, the literature on cleansing and contagion theory to position the argument is reviewed. Empirical evidence from three studies is provided as evidence to support the theory presented in this work. Finally, various implications and future research directions are proposed.

CHAPTER 2: THEORETICAL BACKGROUND

Cleansing

Physical cleansing has been prevalent across the world for thousands of years. Research in anthropology has shown that cleansing has been a form of purification in several of the world's most prominent religious practices, including the practice of baptism in Christianity and wudu in Islam (Zhong and Liljenquist 2006). Through physical cleansing, it is believed that individuals can literally wash away their misdeeds (e.g., baptism to remove original sin in Christianity; Brinkman 2008), or even purify their souls (Becker 1994). Moreover, the link between physical purity and morality has played an important part in cognition and language, with physical, bodily characteristics often being associated with more abstract, figurative representations (i.e., dirty mouth referring to an individual who lies; Lakoff and Johnson 2003; Lee and Schwarz 2010a).

More recent research has found that the act of physical cleansing can serve as a means of symbolic purification even in individuals' everyday lives. For example, in a paper by Zhong and Liljenquist (2006), the researchers examined how physical cleansing can "wash away" the uneasiness associated with unethical actions. Across four studies, findings indicate that people who experienced threats to their moral purity recalled more cleansing-related words in a word-completion task, had a higher desire to cleanse themselves, and chose more cleansing products. Notably, the researchers also found that the act of physical cleansing compensated for moral impurity by leading people who cleansed themselves to be less likely to volunteer. Furthermore, in a paper by researchers Lee and Schwarz (2010a), the effect of various acts of cleansing (e.g.,

hand washing, mouth washing) was shown to correlate with the particular body part implied. For example, individuals who performed an unmoral act with their mouths (i.e., telling a lie) preferred hand sanitizer more than individuals who performed an unmoral act with their hands (i.e., typing a lie in an email). Additional work by these same researchers demonstrates that the effects of physical cleansing may extend beyond the moral domain, and can have effects on other psychological processes like cognitive dissonance (Lee and Schwarz 2010b). Taken together, both Zhong and Liljenquist (2006) and Lee and Schwarz (2010a, 2010b) note that cleansing can literally lead people to feel that they have washed away their sins.

Despite the fact that cleansing has been a central tenet of much of the world for hundreds of years, its function in behavior outside of the moral domain has not been examined in great detail. Moreover, with the exception of the recent research in consumer behavior, little attention has been paid to the more concrete level on which cleansing can operate in everyday life outside of the moral domain. The current research examines how cleansing products can positively affect consumers' perceptions and behavior through their mere contact with other products. By exploring how cleansing products can affect other products via contact, therefore, this work contributes to the literature on cleansing, demonstrating another manner in which cleansing products can influence consumers.

In particular, this research examines the implications cleansing products can have during individuals' shopping experiences. Given the powerful representation and associations that these products have, it is argued that the cleansing effect that results from cleansing products can extend to the consumption domain. Like the recent cleansing literature in consumer behavior, this work demonstrates that cleansing products can lead to more symbolic effects that extend beyond physical cleansing. However, the mechanism proposed in this research is based on a

more literal, contact-based model with no direct physical cleansing actually taking place. As a result of this cleansing process by mere touch, it is expected that evaluations for a “cleansed” product will be higher than those of a product that did not come in contact with a cleansing product. It is also posited that the physical, contact-based nature of this proposed cleansing effect can be best explained by the literature on contagion. In the next section, support from the literature on contagion is used to develop a theory of symbolic cleansing through mere touch.

Contagion

Anthropologists have long studied the basic principles of thinking that exist across cultures (Nemeroff and Rozin 1994). In particular, researchers have found that some beliefs are widespread and universal (Malinowski 1992), and have resulted from primitive belief systems and rituals in traditional cultures (Rozin, Millman, and Nemeroff 1986). Nevertheless, recent research has found that some of these beliefs and practices still influence people to the present day (Nemeroff and Rozin 1994; Rozin, Millman and Nemeroff 1986). One particular set of beliefs that continues to play a part in the daily life of Western culture consists of a series of laws of sympathetic magic (Rozin, Millman, and Nemeroff 1986). Included in these laws of sympathetic magic is the law of contagion. According to this law, a source influences a recipient through either direct or indirect contact (Rozin and Nemeroff 1990) via the transfer of the source's essence onto the recipient (Nemeroff and Rozin 1994). Importantly, the contamination is thought to remain well after contact between the two objects has been made (i.e., "once in contact always in contact"; Rozin and Nemeroff 1990), and has been found to be very difficult (if not impossible) to remove (see Rozin and Nemeroff 1990).

While there are many views regarding the origins of the law of contagion, researchers have often cited its adaptive value in light of a biological view (Nemeroff and Rozin 1994). Findings indicate that contagion beliefs serve as a defense against threats from physical contaminants that might threaten the body (Nemeroff and Rozin 1994; Rozin, Markwith, and McCauley 1994). Nevertheless, numerous research has suggested that contagion beliefs extend beyond their adaptive and evolutionary purpose (Rozin and Fallon 1987). More specifically,

people believe that once a negative object has come in contact with a recipient object, the recipient will forever be tainted by the negative object's properties (Rozin and Fallon 1987).

Thus, although numerous studies have found that such properties can be either positive or negative in nature, negative contamination appears to have a more prominent influence (Nemeroff and Rozin 1994; Rozin and Fallon 1987; Rozin, Millman, and Nemeroff 1986). Prior literature has argued that a bias for negative instances of contagion is due to the general human tendency to give negative events more saliency (Rozin and Fallon 1987). With specific regard to contagion, therefore, a bias toward the negative may exist because of the potential for bodily harm that is possible. Indeed, this asymmetry between negative and positive contamination effects has been best represented by the statement that "a teaspoon of sewage will spoil a barrel of wine, but a teaspoon of wine will do nothing for a barrel of sewage" (Rozin and Fallon 1987, p. 32). Relatedly, researchers have noted that the emphasis people place on negative contamination is associated with reactions of disgust (Rozin and Fallon 1987).

Within the marketing domain, consumer behavior researchers have been able to demonstrate that people can have similar aversions when products that are considered disgusting come in contact with other products. For example, in a study by Morales and Fitzsimons (2007), disgusting products were found to elicit much of the same reactions as other disgusting objects found in the psychological literature. Across a series of studies, the authors find that disgust operates in a consumer context, and that products that are considered even moderately disgusting can influence consumers' evaluations of other (i.e., neutral) products that they come in contact with. In a related vein, researchers Argo, Dahl, and Morales (2006) find that another manner in which disgust can operate within the consumer context is via the contact of a product by numerous others. In their theory, the researchers posit that specific "contamination cues" in the

shopping environment are enough to suggest that contact has occurred, and can negatively affect consumers' product evaluations.

While most literature on contagion effects has demonstrated that the contact of disgusting products leads to negative consequences for consumers, very little research has explored any positive role of contagion. One exception is a paper by Argo, Dahl, and Morales (2006), which documents positive contagion effects in a retail context. In their paper, the researchers find that attractive others can positively influence products they come in contact with. Specifically, across three studies, the researchers find that consumers perceive a product that has been touched by an attractive person (particularly of the opposite sex) more positively. The authors concluded that their research is among the first to document a positive contagion effect in the literature.

CHAPTER 3: THE CURRENT RESEARCH

Building on the findings of the literature on cleansing and contagion, the goal of the current research is to further explore the mechanism in which a positive contagion effect can occur. Much like the contamination arising from disgusting products, the current research seeks to show that cleansing products work to produce a cleansing effect by transferring their essence onto other products via mere touch. Therefore, it is posited that the cleansing properties inherent in these products can overcome the negative properties of recipient products, including those that are considered disgusting. As a result, it is argued that consumers can react less negatively to such disgusting products after they have been metaphorically “cleansed” by cleansing products by merely coming in contact with them.

Thus, it is argued that consumers will perceive another product to be more effective after it has come in contact with a cleansing product. It is predicted that this increase in efficacy will result from the belief that contact with the cleansing product has “cleansed” the recipient product. To assess these proposed effects, a disgusting product (i.e., antidiarrheal medicine; Morales and Fitzsimons 2007) was used to see if a cleansing product can influence even very negative products. Importantly, although the effects of contagion have been shown on universal level for individuals, there is evidence to suggest that there may be differences in terms of individuals’ contagion beliefs. Thus, the extent to which individuals are affected by product contagion and disgust can be a reflection of their personality. Since a disgusting product is used in the research, the extent to which individuals are vulnerable to the effects of disgust is measured using the Disgust Scale-Revised (Haidt, McCauley, and Rozin 1994, modified by Olatunji et al. 2007). In this research, these proposed effects are expected to be especially evident

for individuals who are vulnerable to contagion and disgust effects (i.e., those scoring high on disgust vulnerability). Therefore, the following hypothesis is proposed:

H1: For individuals vulnerable to disgust, perceptions of a disgusting product will be more positive if it has come in contact with a cleansing (versus neutral) product.

Additionally, this work seeks to examine how cleansing products can positively influence consumers' perceptions with regard to increasing how much they are willing to pay for a product. In particular, it is posited that a cleansing product can influence individuals to pay a higher price for a product with which it has come in contact. Literature examining individuals' willingness to pay (WTP) suggests that the amount is correlated with their attitudes about the product (Ajzen and Driver 1992). Additionally, research has shown that WTP is comparable to behavioral intentions. Therefore, WTP is used as a test for the robustness of the effects in Study 2.

H2: For individuals vulnerable to disgust, willingness to pay for a product will be higher if it has come in contact with a cleansing (versus neutral) product.

Finally, the last step in this research was to examine the effect that cleansing products can have more directly on the self. Therefore, in Study 3, the effects of cleansing products are observed when cleansing products come in direct contact with an individual. If the effects proposed in the previous studies would generalize to the self, then it would be expected that merely touching a cleansing (versus neutral) product would make individuals feel cleansed and pure. As such, this effect is predicted to be stronger for individuals to be more sensitive to disgusting (i.e., threatening) products. This thinking is in line with the recent findings in the literature that have demonstrated cleansing effects on individuals' perceptions of themselves. In a recent paper by Zhong, Strejcek, and Sivinathan (2010), physical cleanliness was found to

purify individuals, such that it can protect them from the dangers of contagion (Zhong, Strejcek, and Sivanathan 2010). By embodying physical cleanliness, individuals felt more morally pure, and thus were more sensitive to anything that threatened their moral purity (Zhong, Strejcek, and Sivanathan 2010). Thus, the following hypothesis is proposed in the current research:

H3: For individuals vulnerable to disgust, willingness to pay for a product will be lower if an individual has come in contact with a cleansing (versus neutral) product.

STUDY 1

Method

Thirty-seven undergraduate participants from a large, northeastern urban university participated in this study for course credit. Participants entered the lab and were given a pen-and-paper survey. The survey first included a hypothetical shopping scenario in which participants were told that they were shopping for a few items at a local store. Half of the participants were told that one of the items they were shopping for was a cleansing product (i.e., a bottle of Purell Hand Sanitizer), while the other half were told it was a neutral product (i.e., a pack of Bic Rollerball pens). All participants were shown a picture of the product. They were told that once they found this item at the store, they placed it into their shopping basket. Additionally, all participants were told that they were shopping for some Imodium Anti-diarrheal medicine (considered to be a disgusting product; Morales and Fitzsimons 2007), and were also shown a picture of the medicine. Participants were then told that the shopping basket at this store was extremely small and limited, and that they had to rest the products on top of one another, such that the Imodium on was leaning on the first product. To ensure that participants had an accurate visualization of the products, a picture of them in contact with each other was provided (see Appendix 1 for Sample Survey).

After the manipulation, participants went on to answering a series of questions about the products. Questions included how bad/good, negative/positive, undesirable/desirable, unfavorable/favorable, disliked/liked they felt the first product (i.e., the Purell or the pens) and Imodium were, measured on 7-point semantic differential scales. Participants were asked how

likely they were to purchase the first product and the Imodium in the future, also measured on a 7-point scale (1 = not at all likely, 7 = very likely). To assess whether the product prime affected participants' shopping experience, participants were also asked to indicate how good, bad, happy, gross, revolted, content, frustrated, peaceful, pleased, mad, disgusted, unclean, and annoyed they felt during the shopping experience, measured on 7-point scales (1 = completely disagree, 7 = completely agree). Participants then answered a series of questions about the products, including how disgusting, effective, and good quality they thought both products were. To ensure that participants perceived the manipulation accurately, they were asked "How likely was it that the Purell (versus Bic pens) touched the other item in your shopping basket?" (1 = not at all, 7 = very much). Lastly, participants went on to completing the Disgust Scale-Revised, which assessed their sensitivity to disgust (Haidt, McCauley, and Rozin 1994; see Appendix 2 for Disgust Scale-Revised).

Results

Manipulation Check. To ensure that participants perceived the manipulation accurately, their responses with regards to the extent to which they indicated that the products had touched each other were examined. Results demonstrate that the manipulation was successful, as the average rating on this question was 5.62 (out of 7).

Perceptions of the Disgusting Product. It was hypothesized that consumers' ratings of the effectiveness of the anti-diarrheal medicine would be affected by the other product that appeared in participants' shopping baskets, such that evaluations of the anti-diarrheal medicine would be higher when the medicine appeared in a basket along with a cleansing product. Furthermore, it

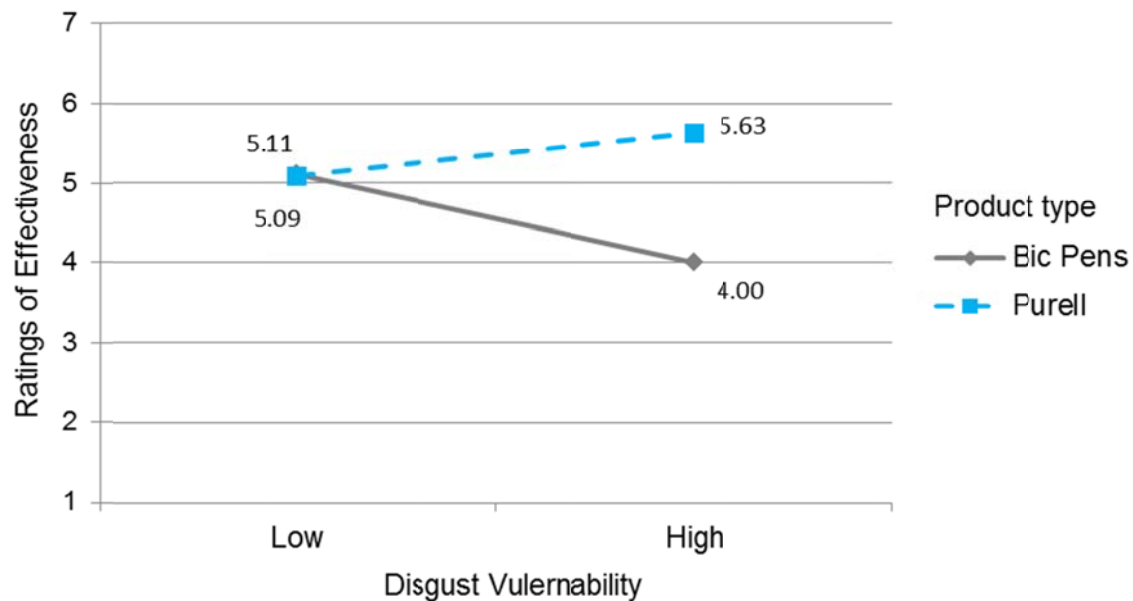
was also expected that the proposed effects would be particularly evident for individuals who were vulnerable to the effects of disgust (e.g., scoring high on the Disgust Scale-Revised), given that prior literature has shown the effects of disgust to be strongest for such individuals (Inbar et al. 2009; Merckelbach et al. 1993). Thus, it was posited that the main effect in the results should be qualified by a significant Product type X Disgust Vulnerability interaction, such that differences in evaluations would be attenuated or eliminated for participants who are not vulnerable to the effects of disgust.

A 2 (Product type: Cleansing versus Neutral) X 2 (Disgust Vulnerability: Low versus High) ANOVA analysis for the various dependent variables provided support for H1 only for the dependent variable of effectiveness. Thus, the discussion of results will focus only on this variable.

A 2 (Product type: Cleansing versus Neutral) X 2 (Disgust Vulnerability: Low versus High) ANOVA on the effectiveness of the anti-diarrheal medicine revealed a significant main effect for Product type ($F(1, 33) = 4.46, p < .05$), such that ratings of the effectiveness of the medicine were greater when participants were told that the product they placed in their basket was Purell ($M_{\text{Purell}} = 5.30$) than when it was the pack of Bic pens ($M_{\text{Pens}} = 4.50$). Importantly, results also demonstrate a significant Product type by Disgust Vulnerability interaction ($F(1,33) = 4.25, p < .05$). Specifically, participants who scored high on the Disgust Scale rated the anti-diarrheal medicine as more effective when they were told it was placed in a shopping basket with the Purell versus when it was placed in a shopping basket with the Bic pens ($M_{\text{PurellHighDisgust}} = 5.62$ versus $M_{\text{PensHighDisgust}} = 4.00; F(1,33) = 8.08, p < .05$). However, as had also been predicted, product type did not affect ratings of the medicine's effectiveness for participants' who were low

in vulnerability to disgust. No other measures demonstrated a significant effect. Figure 1 demonstrates these results.

FIGURE 1: Effect of Product Type and Disgust Vulnerability on Ratings of Effectiveness



Discussion

The first study demonstrated that a cleansing product can affect other objects by simply coming in contact with them and positively influencing consumers' perceptions. Results showed that the cleansing effect can be so strong that it can change individuals' perceptions of even a disgusting product when those individuals are especially vulnerable to contagion beliefs. For those individuals, the positive contamination effect of the cleansing product served to undo some of the negativity of the disgusting product. Thus, although there was no actual cleansing involved, the cleansing product "symbolically" cleansed the disgusting product through mere

contact. Therefore, for these individuals, the disgusting product was thought to be more positive with regard to its effectiveness.

Interestingly, although the results for the measure of effectiveness of the disgusting product support H1, there were no significant results with regard to the other measures. While it was originally thought that the effects would manifest very obviously in individuals' perceptions, the lack of effects observed here might not have been part of a fully conscious process. In other words, while the disgusting product could have indeed been positively contaminated by the cleansing product, it may have been happening below participants' conscious level of awareness. As a result, while participants did not demonstrate any differences with regards to perceptions of disgust or quality for the disgusting product, results however do reflect their attitude about the effectiveness of it (i.e., the outcome of the contagion process).

The next study sought to replicate the effects observed in Study 1. However, to better assess participants' attitudes about the product, WTP was used as the variable of focus. Prior work has shown that this variable tends to be correlated with individuals' general attitudes about a product, as well as their behavioral intentions (i.e., willingness to purchase a product). Thus, this variable was used as the main dependent variable in the next two studies.

STUDY 2

Method

Forty two participants from a large, urban university volunteered their time to participate in a consumer study in exchange for course credit. A procedure very similar to that of Study 1 was followed. Participants entered the lab and were given a pen-and-paper survey. The survey first included a hypothetical shopping scenario in which participants were told that they were shopping for a few items at a local store. Half of the participants were told that one of the items they were shopping for was a cleansing product (i.e., a bottle of Purell Hand Sanitizer), while the other half were told it was a neutral product (i.e., a pack of Bic Rollerball pens). All participants were shown a picture of the product. They were told that once they found this item at the store, they placed it into their shopping basket. Additionally, all participants were told that they were shopping for some Imodium Anti-diarrheal medicine, and were also shown a picture of the medicine. Participants were then told that the shopping basket at this store was extremely small and limited, and that they had to rest the products on top of one another, such that the anti-diarrheal medicine on was leaning on the first product. To ensure that participants had an accurate visualization of the products, a picture of them in contact with each other was provided.

After the manipulation, participants went on to answering a series of questions about their store experience as in Study 1. To assess how valuable participants thought the recipient product was after having come in contact with the cleansing product, participants were also asked to indicate how much they were willing to pay for the Imodium. Additionally, participants answered how disgusting, effective, and good quality they thought the disgusting product was.

To ensure that participants perceived the manipulation accurately, they were also asked “How likely was it that the Purell (versus Bic pens) touched the other item in your shopping basket?” (1 = not at all, 7 = very much). Lastly, participants again went on to completing the Disgust Scale-Revised, which assessed their sensitivity to disgust (Haidt, McCauley, and Rozin 1994).

Results

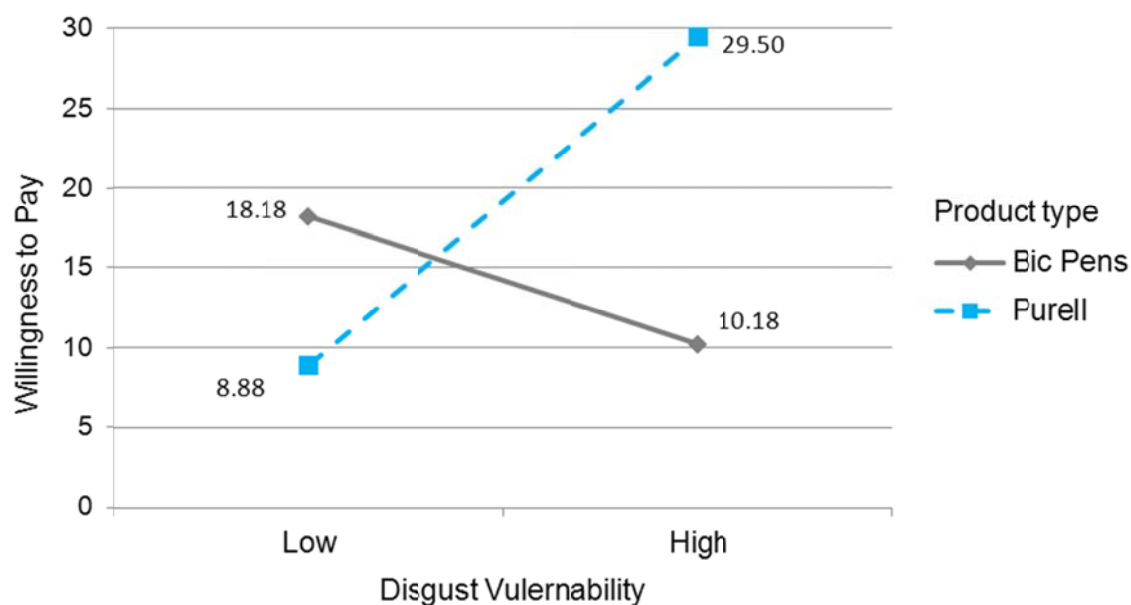
Manipulation Check. To ensure that participants perceived the manipulation accurately, their responses with regards to the extent to which they indicated that the products had touched each other were examined. Results demonstrate that the manipulation was successful, as the average rating on this question was 5.38 (out of 7).

Perceptions of the Disgusting Product. For the second study, it was hypothesized that consumers’ positive perceptions of the anti-diarrheal medicine after it had come in contact with a cleansing product would be reflected in their willingness to pay for the medicine, such that the price that participants were willing to pay for the anti-diarrheal medicine would be higher when the medicine came in contact with a cleansing product. Similar to Study 1, it was proposed that there would also be a significant Product type x Disgust Vulnerability interaction, such that differences in participants’ willingness to pay would be attenuated or eliminated for participants who were not vulnerable to the effects of disgust.

A 2 (Product type: Cleansing versus Neutral) X 2 (Disgust Vulnerability: Low versus High) ANOVA on willingness to pay revealed a significant Product type X Disgust Vulnerability interaction ($F(1,38) = 5.14, p < .05$). Planned follow-up contrasts showed a marginally significant effect for participants who scored high on the Disgust Scale, indicating a higher

willingness to pay for the anti-diarrheal medicine when they were told that it was placed in a shopping basket with the Purell hand sanitizer versus when it was placed in a shopping basket with the Bic pens ($M_{\text{PurellHighDisgust}} = 29.50$ versus $M_{\text{PensHighDisgust}} = 10.18$; $F(1,38) = 3.86$, $p = .06$). Additionally, findings suggest that among those who were told that the anti-diarrheal medicine was placed in the basket with the Purell, those high in Disgust Vulnerability were willing to pay a higher price for the medicine than those scoring low in Disgust Vulnerability ($M_{\text{PurellHighDisgust}} = 29.50$ versus $M_{\text{PurellLowDisgust}} = 8.88$; $F(1,38) = 4.04$, $p = .06$). However, product type did not affect ratings of the medicine's effectiveness for participants' who were low in vulnerability to disgust. Figure 2 highlights these results. Interestingly, no other dependent variable measures demonstrated a significant effect (including effectiveness).

FIGURE 2: Effect of Product Type and Disgust Vulnerability on Willingness to Pay



Discussion

The results of Study 2 provide further evidence for H2. Specifically, the results show that when a cleansing product comes in contact with another, disgusting product, participants are willing to pay more for that disgusting product. Thus, with these results, it is again demonstrated that a cleansing product can influence perceptions of negative and disgusting products by simply coming in contact with it. Although the findings with regard to effectiveness found in Study 1 were not replicated, (marginally) significant results were present for the WTP variable. However, this may be due simply to the order in which participants' perceptions on these measures were assessed. In other words, since participants were provided with the question of how much they were willing to pay for the disgusting product first, their responses to how effective they thought the disgusting product was might have been affected. In future research, it may be worthwhile to counterbalance the dependent measures.

In the final study, it was also posited that cleansing products can lead to more symbolic cleansing effects. In particular, it is argued that cleansing products can "cleanse" individuals and make them feel more pure, such that individuals become more sensitive to cues in the environment. With regard to the disgusting recipient product used in this research, it is expected that individuals will be more critical of its negative (i.e., disgusting) characteristic. Building off the findings from Zhong, Strejcek, and Sivanathan (2010), it is proposed that this sense of cleanliness will lead to *lower* evaluations for a disgusting product.

STUDY 3

Method

Forty two undergraduate participants from a large, northeastern urban university participated in this study for course credit. Participants entered the lab and were given a pen-and-paper survey. The survey first included a hypothetical shopping scenario in which participants were told that they were shopping for a few items at a local store. All participants were told that they were shopping for some Imodium Anti-diarrheal medicine, and were also shown a picture of the medicine. They were told that once they found this item at the store, they placed it into their shopping basket. Half of the participants were then told that the other item they were shopping for was a cleansing product (i.e., a bottle of Purell Hand Sanitizer), while the other half were told it was a neutral product (i.e., a pack of Bic Rollerball pens). All participants were shown a picture of the second product as well. Importantly, participants were told that once they found the second product they were looking for (i.e., the Purell or the Bic pens), they had to hold it in the hand opposite the shopping basket because the product wouldn't fit in the basket. Participants then proceeded to answering the same questions assessing their attitudes about the products as in the previous two studies, including a question that asked them to indicate "How likely was it that the Purell (versus Bic pens) touched your hand?" (1 = not at all, 7 = very much). Finally, participants answered the Disgust Scale-Revised.

Results

Manipulation Check. Participants were asked to indicate the extent to which they thought that the products had touched their hand. Results demonstrate that the average rating on this question was 3.93 (out of 7). Thus, given that this result is only slightly above the midpoint of the scale, it is not certain that participants perceived the manipulation correctly.

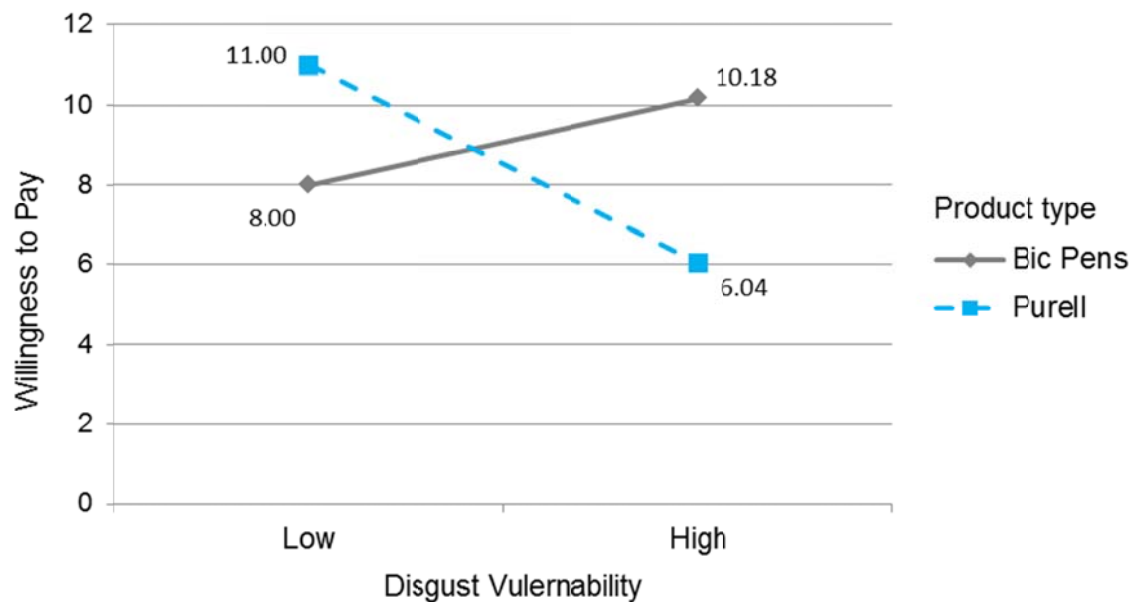
Perceptions of the Disgusting Product. It was hypothesized that consumers' positive perceptions of the anti-diarrheal medicine after it had come in contact with a cleansing product would be reversed when that product had come in contact with individuals themselves. As indicated by H3, it was reasoned that by having individuals touch a product directly, they would attain some of the essence of that product. As a result, it was proposed that having individuals touch a cleansing product would make them feel more clean and pure, and thus lead them to react more negatively to the disgusting product. As in the previous two studies, however, it was also proposed that there would be a significant Product type x Disgust Vulnerability interaction, such that a lower evaluation of a disgusting product would result only for individuals who are vulnerable to the effects of disgust.

A 2 (Product type: Cleansing versus Neutral) X 2 (Disgust Vulnerability: Low versus High) ANOVA analysis on willingness to pay and the other dependent variables only provided significant results for the WTP measure. Thus, the discussion of the results will only focus on this variable.

A 2 (Product type: Cleansing versus Neutral) X 2 (Disgust Vulnerability: Low versus High) ANOVA on WTP revealed a significant interaction effect ($F(1, 38) = 6.03$ $p < .05$). More specifically, willingness to pay for the medicine was lower for participants who were high in

Disgust Vulnerability when participants were told that they had to hold the Purell than when they were told that they had to hold a pack of pens, demonstrating a marginally significant effect ($M_{PurellHighDisgust} = 6.04$ versus $M_{PensHighDisgust} = 10.18$; $F(1,38) = 3.86$, $p = .06$). Further analyses show that for participants who were told that they were shopping for a bottle of Purell, those high in Disgust Vulnerability were willing to pay much less for the anti-diarrheal medicine than those low in vulnerability to disgust ($M_{PurellHighDisgust} = 6.04$ versus $M_{PurellLowDisgust} = 11.00$; $F(1,38) = 5.55$, $p < .05$). Figure 3 highlights these results. No other measures demonstrated a significant effect.

FIGURE 3: Effect of Product Type and Disgust Vulnerability on Willingness to Pay (Self)



Discussion

The results of Study 3 demonstrate that cleansing products can affect things they come in contact with beyond a product level. Evidence suggests that when individuals themselves touched a cleansing product, the cleansing product transferred its essence onto individuals as well. Individuals presumably felt a sense of being more cleansed and pure, and thus there was an increase in their sensitivity toward a threatening (i.e., disgusting) product. This effect was not found to exist when individuals were told that they had come in contact with a neutral product. The cleansing effect was moderated by the extent to which individuals held contagion beliefs. Similar to the first two studies, results also suggest that this effect occurs only for individuals who were more vulnerable to the effects of disgust.

CHAPTER 8: GENERAL DISCUSSION

Across three studies, findings demonstrate that cleansing products have an effect on the way that consumers perceive other products in the shopping environment. More specifically, results indicate that cleansing products can positively influence the objects they come in contact with. Importantly, these effects were found to have different implications depending on what the cleansing product contacted. When a cleansing product came in direct contact with a disgusting product, the cleansing product made the disgusting product more positive in consumers' eyes, and even led them to be willing to pay a higher price for it. However, when the cleansing product came in contact with an individual, it seemed to have affected individuals directly, and resulted in more severe and negative judgment against a disgusting product.

The findings also provide theoretical contributions for the recent literature on cleansing. Results suggest that cleansing can wash away negativity, such as feelings of being unmoral, or even the uneasiness encountered during the decision process. In the present research, results provide support for this general position, and therefore demonstrate another way in which "cleansing" effects can occur in the consumption domain. Specifically, across three studies, findings indicate that literal cleansing was not necessary for cleansing effects to occur; the mere contact of a cleansing product with another object rendered individuals to perceive that cleansing had taken place. While the research demonstrates the basic effects resulting from cleansing products (i.e., perceptions of a recipient object), future research may examine how cleansing products can affect more abstract aspects of consumer behavior.

Although the research provides a first look at the important, biasing role of cleansing products on a basic level, it also provides evidence that demonstrates a very different effect when

a cleansing product comes in contact directly with the self. Instead of leading to better perceptions of the disgusting product, perceptions were actually worse. Presumably, individuals felt cleansed when they came in contact with the cleansing product, and thus became more sensitized toward the disgusting product. Given the potentially large implications from this research, future research might look at other contexts in which a cleansed self can bias consumers' perceptions. Furthermore, it may be worthwhile to see how these findings can generalize onto other, completely different domains (i.e., indulgent behavior) as well.

Implications

Importantly, the research can have several implications for the retail industry. If cleansing products can indeed positively contaminate disgusting products, retailers may benefit by purposely arranging products on shelves, such that cleansing products are in very close proximity to disgusting products. Additionally, perhaps some type of product bundling may be beneficial for specific brands (i.e., including a sample of facial cleanser with a feminine hygiene product). On the other hand, since the effects of cleansing products on the self were found to lead to the opposite effect, it is important for retailers who carry disgusting products to prevent individuals from coming in contact with cleansing products first. As an example, providing consumers with a chance to cleanse their hands upon entering the store may lead them to be more sensitive to the disgusting product and therefore make more negative judgments.

In addition to these practical, retail insights, the research can have important public policy implications as well. From the results, it can be seen that a cleansing product can greatly influence consumers' perceptions of a disgusting product by merely coming in contact with it.

This finding may have important consequences for consumers' health, since they are sometimes obligated to encounter medicines that are considered disgusting (i.e., anti-diarrheal medicine). Even though the sequence of events in the research might seem unlikely in an actual retail environment, perhaps there is some other way in which consumers can perceive these disgusting products to have been "cleansed" through contact with a cleansing product. For example, perhaps cues on the product packaging that are suggestive of cleansing (i.e., blue and white coloring) or even coupons for a cleansing product attached to the package might lead to similar effects. On the contrary, consumers' own contact with a cleansing product should be limited or even prevented, in order to avoid negatively biased perceptions of the disgusting product.

Limitations

While this research presents results that demonstrate a novel view of the process of contagion arising from disgusting products, there are several limitations worth noting. Firstly, it should be pointed out that the participant population used in this research was very limited. All three studies utilized student participants from a homogenous subject pool. Although the results obtained support the hypotheses, it may be interesting to incorporate a more diverse participant pool, especially since the effect relies on a key individual difference variable (i.e., vulnerability to contagion beliefs). Furthermore, since disgust is often tied to a cultural component, it may be interesting to assess the effects across a variety of individuals. Additionally, another limitation of this research involves the fact that hypothetical scenarios were used. It can be argued that a better assessment of the proposed effect would be a manipulation that includes real products. Moreover, the current research may be limited with regards to the choice of products used. Since

the products in the research can have different representations for different individuals, a more comprehensive assessment to ensure that the products used are interpreted similarly is warranted. Finally, the current research was also limited with regards to the dependent variable measures that were used to assess the effect. While ratings of effectiveness and willingness to pay supported the theory, additional dependent variables are needed to fully understand the proposed effect. For example, are the effects witnessed here fully conscious phenomena? Future research might look into these issues.

Future Research

Given the findings from the current research, it may be worthwhile to examine several issues in future research. Most importantly, attempts should be made to better understand the underlying process to these effects. What is so special about cleansing products that leads to these effects? Are only blatant cleansing products responsible for these effects, or can other products that represent cleansing also be capable of the same results? On the same token, it may be interesting to examine the effects with completely different types of products (i.e., other strongly-valenced but non-cleansing products). Lastly, given the results from Study 3, it may be interesting to further examine how cleansing the self prior to making decisions with regards to disgusting products can affect those decisions. Although evidence from prior research suggests that cleansing prior to making judgments can negatively bias individuals, it is interesting to consider what might happen to consumption decisions. For example, might consumers also be more sensitive towards spending money or trying new products? Due to the potentially large implications of the current research, these questions may be worthwhile to explore.

APPENDIX 1: SAMPLE SURVEY

Imagine yourself in the following scenario:

You are at a local store shopping. On this particular occasion, you are shopping for a 20 ounce bottle of **Purell Hand Sanitizer** (appearing below).



You find the product, and put it in your shopping basket.

In addition, you also decide to purchase some **Imodium AD Anti-Diarrheal medicine**.



You find the medicine and also put it in your basket. However, you notice that the shopping basket is extremely small at this store, and you have to lean the **Imodium AD Anti-Diarrheal medicine** and place it on top of the **Purell Hand Sanitizer** (as shown). You then proceed to the cashier to pay for your purchases.



APPENDIX 2: DISGUST SCALE-REVISED

Please indicate how much you agree with each of the following statements, or how true it is about you. Please write a number (0-4) to indicate your answer:

0 = Strongly disagree (very untrue about me)

1 = Mildly disagree (somewhat untrue about me)

2 = Neither agree nor disagree

3 = Mildly agree (somewhat true about me)

4 = Strongly agree (very true about me)

- ___ 1. I might be willing to try eating monkey meat, under some circumstances.
- ___ 2. It would bother me to be in a science class, and to see a human hand preserved in a jar.
- ___ 3. It bothers me to hear someone clear a throat full of mucous.
- ___ 4. I never let any part of my body touch the toilet seat in public restrooms.
- ___ 5. I would go out of my way to avoid walking through a graveyard.
- ___ 6. Seeing a cockroach in someone else's house doesn't bother me.
- ___ 7. It would bother me tremendously to touch a dead body.
- ___ 8. If I see someone vomit, it makes me sick to my stomach.
- ___ 9. I probably would not go to my favorite restaurant if I found out that the cook had a cold.
- ___ 10. It would not upset me at all to watch a person with a glass eye take the eye out of the socket.
- ___ 11. It would bother me to see a rat run across my path in a park.
- ___ 12. I would rather eat a piece of fruit than a piece of paper
- ___ 13. Even if I was hungry, I would not drink a bowl of my favorite soup if it had been stirred by a used but thoroughly washed flyswatter.
- ___ 14. It would bother me to sleep in a nice hotel room if I knew that a man had died of a heart
- ___ 15. You see maggots on a piece of meat in an outdoor garbage pail.
- ___ 16. You see a person eating an apple with a knife and fork
- ___ 17. While you are walking through a tunnel under a railroad track, you smell urine.
- ___ 18. You take a sip of soda, and then realize that you drank from the glass that an acquaintance of yours had been drinking from.
- ___ 19. Your friend's pet cat dies, and you have to pick up the dead body with your bare hands.
- ___ 20. You see someone put ketchup on vanilla ice cream, and eat it.
- ___ 21. You see a man with his intestines exposed after an accident.
- ___ 22. You discover that a friend of yours changes underwear only once a week.
- ___ 23. A friend offers you a piece of chocolate shaped like dog-doo.
- ___ 24. You accidentally touch the ashes of a person who has been cremated.
- ___ 25. You are about to drink a glass of milk when you smell that it is spoiled.
- ___ 26. As part of a sex education class, you are required to handle a new unlubricated condom.
- ___ 27. You are walking barefoot on concrete, and you step on an earthworm.

CONCLUSION

Cleansing can rid more than concrete, physical impurities from individuals. In fact, the prominent role of cleansing across history and culture has suggested that cleansing can also wash away much of the negativity that spans beyond the mere physical domain. Across two essays presented here, findings suggest that cleansing can have implications for various aspects of consumer behavior. In Essay 1, the act of physical cleansing was found to lead individuals to sense that they had a clean slate, which therefore made them more likely to choose relatively more indulgent options from a choice set. In Essay 2, cleansing products were found to positively alter individuals' perceptions of other products by merely coming in contact with them. Taken together, these findings demonstrate that cleansing can have implications for consumer behavior beyond just the obvious.

The findings presented in this research contribute to the literature by documenting new implications of cleansing on consumer behavior. In addition to the recent literature in psychology that has demonstrated symbolic cleansing effects, this work makes an additional contribution by examining the underlying processes associated with metaphorical cleansing. In particular, Essay 1 theoretically distinguishes between primed and embodied cleansing. Essay 2 shows that cleansing products affect other products they come in contact with through a contagion process. Together, these results shed new light on the recent literature on cleansing and its effects on behavior, and provide new evidence that suggests other ways that cleansing can affect consumer behavior.

Given these findings, it may be worthwhile for future research to examine cleansing effects beyond the domains presented in these two essays. For example, one question to consider

is how cleansing can affect other types of product perceptions. Additionally, future research can explore other manners in which cleansing can occur (i.e., different mechanisms that lead to the perception of cleansing). As seen in this research, the scope of cleansing can extend well beyond the physical realm, and thus it may be interesting to investigate other (i.e., non-marketing) implications of cleansing. Undoubtedly, such implications can have important consequences not just for marketing but also for areas beyond.

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