

Curiosity Can Resist Anything but Temptation: The Incidental Effects of Curiosity on Indulgent
Consumption

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ABSTRACT

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Curiosity can do more than kill a cat. The present research sheds light on an unexpected consequence of curiosity by showing that curiosity can lead to indulgent consumption. Four experiments present convergent evidence that the more curious consumers are, the more likely they are to indulge. This effect is explained by a heightened desire for anything that is rewarding. Study 1 provides initial support for the proposed model. Study 2 replicates the impact of curiosity on indulgent consumption through desire for rewards and shows that consumers who are more sensitive to rewards are particularly susceptible to that effect. Studies 3 and 4 test a boundary condition by showing that the effect of curiosity on indulgent consumption will no longer hold when consumers believe that the willpower to resist temptations is an unlimited resource. Study 4 also rules out an alternative mechanism of reward enjoyment. Together, these studies demonstrate that curiosity acts as an impetus for indulgent consumption by impairing consumers' ability to resist temptations and that implicit theories about the willpower to resist temptations moderate this effect.

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Introduction

According to Greek mythology, Pandora was adorned with many gifts from the gods, one of them being *the gift of curiosity*. As the story goes, Zeus gave Pandora a box but ordered her to never to open it. As Pandora's curiosity intensified, she began to express feelings of resentment toward Zeus for depriving her of the knowledge of what lay inside this mysterious box. Unable to resist the temptation any longer, Pandora gave into her desires and decided to open the box in order to quell the feeling of curiosity (Homer 1990).

The story of Pandora's Box illustrates the consequences that curiosity may have on the interplay between desires—in this case, to gain knowledge—and giving into temptation. Indulgent consumption in the context of succumbing to a temptation has been attributed to a breakdown in willpower caused by the depletion of executive resources (Baumeister 2002), as well as an increase in the desire for that temptation that is fueled by feelings of deprivation (Hoch and Loewenstein 1991). Defined as a feeling of knowledge deprivation (Loewenstein 1994) that is brought about by novelty or incongruity in the environment (Berlyne 1954, 1966; Noseworthy, Muro, and Murray 2014), curiosity appears to trigger a 'hot' state of intense emotion and unpleasant arousal (Loewenstein 1994). The experience of curiosity, through the anticipation of information, has recently been found to have its roots in the behavioral activation system (Kashdan, Rose, and Fincham 2004) and activates the reward centers of the brain (Jepma et al. 2012; Min Jeong et al. 2009). As such, stories such as Pandora's illustrate the consequences that curiosity can have on the desire for temptations and have been a common theme in folklore. Yet, research on curiosity has largely ignored this interplay of curiosity and temptations. Instead, research has primarily focused on curiosity's facilitative role in exploration (Berlyne 1966; Litman, Hutchins, and Russon 2005), information acquisition (Kruger and Evans 2009),

information acquisition (Kruger and Evans 2009), interest generation (Menon and Soman 2002; Steenkamp and Baumgartner 1992), and learning (Jepma et al. 2012; Min Jeong et al. 2009).

In some instances, acquiring the reward of information may not always be attainable. For example, consumers may be exposed to a teaser advertisement for a novel product that activates their curiosity but does not provide enough detail (e.g., product features, price) to resolve their curiosity. Under such circumstances, the reward circuitry may maintain its desire for rewards and extend this desire to rewards unrelated to the original object of the consumer's curiosity. If so, an unsatisfied state of curiosity may produce a generalized motivation to seek rewarding outcomes. This notion of curiosity stimulating a generalized desire for rewards has important implications for consumer research, because prior investigations have shown that being tempted can undermine the ability to resist temptations (Van Den Bergh, Dewitte, and Warlop 2008; Xiuping 2008). If this is the case, is it possible that curiosity increases indulgent consumption through an increased desire for rewards?

The present research addresses this question by suggesting that, in order to understand how curiosity may trigger indulgent consumption, one must consider not only how curiosity creates the motivation to attain knowledge but also whether that motivation translates to a desire to pursue unrelated rewards. Because curiosity has been shown to activate areas of the brain commonly associated with reward and reinforcement (Jepma et al. 2012; Min Jeong et al. 2009), the generalized nature of the reward circuitry may cause curious consumers to orient their attention toward rewards in general (Kashdan et al. 2004; Kruger and Evans 2009). Consequently, when faced with an indulgent temptation, curious consumers (compared to incurious consumers) may view that temptation as being more desirable and experience a stronger urge to consume that temptation. Thus, the experience of curiosity, even if it is

incidental to the consumption decision at hand, should serve as a visceral need state that increases preference for indulgent consumption.

This research proposes that it is not the emotional distress (Tice, Bratslavsky, and Baumeister 2001) that may arise in tandem with curiosity nor is it that curiosity may be resource depleting (Muraven, Tice, and Baumeister 1998) that makes curiosity an impetus for indulging. Rather, there may be something uniquely inherent to curiosity that makes it a precursor to indulgent consumption. By discounting the negative consequences of knowing negative information (Kruger and Evans 2009; Shani, van de Ven, and Zeelenberg 2012; van Dijk and Zeelenberg 2007), curiosity may play an integral role in motivating behaviors with potentially undesirable consequences (Maner and Gerend 2007). In support of these findings, four studies demonstrate the incidental effects of curiosity on indulgent consumption in three consumption domains (movies, luxury vacations, and food). Across these studies, this dissertation finds evidence to suggest 1) that curiosity produces a generalized desire for something that is rewarding and 2) that, when faced with an indulgent temptation, curious consumers find themselves unable to resist that temptation. This research further demonstrates that these effects of curiosity are contingent upon the consumers' level of reward sensitivity and on their beliefs about the willpower to resist temptations. Specifically, it shows that being low in reward sensitivity or believing that willpower is an unlimited resource attenuates the effects of curiosity on indulgent consumption.

This dissertation focuses attention on curiosity for three reasons. First, although it is clear that consumers' curiosity can affect the desire to know potentially harmful information, less is known about how curiosity influences the desire for other temptations. That is to say, it is possible that this intense desire for knowledge is indicative of a type of behavioral inhibition

similar to that found to underlie indulgent consumption whereby curious individuals place greater weight on the short-term reward of knowing over the longer-term regret of acquiring harmful information. Second, while much attention has been devoted to the integral role that curiosity has on behaviors, few researchers have explored the incidental effects of curiosity. For example, research has largely neglected to explore whether the incidental experience of curiosity will have the same influence on behaviors and decision-making when the source of that curiosity is unconnected to the decision at hand. Finally, if curiosity does indeed carry over into other contexts and unrelated behaviors, it is possible that curiosity provides a unique motivational drive for acquiring short-sighted rewards. Given the pervasiveness of curiosity in our everyday lives and the detrimental outcomes that preferences for short-sighted rewards can have for consumers (e.g., obesity, overspending, and impulse buying), the importance of understanding how the experience of curiosity influences indulgent consumption should be clear.

This research contributes to the consumer behavior literature by a) demonstrating the negative effect that experiencing curiosity may have on consumer behavior, and specifically indulgent consumption, and b) identifying the process through which this effect might occur. This investigation also contributes to the reward-processing literature, which has received scant attention, by demonstrating that motivational mindsets such as curiosity can have unique effects on consumer choice and that this may be particularly true for consumers who believe their ability to resist temptations is limited. Furthermore, this research contributes to the indulgent consumption literature by identifying another important factor in indulgent consumption and showing its effects across multiple contexts. Finally, it shows that curiosity may have the dual impact of both decreasing and increasing indulgent consumption, depending on individual differences in reward sensitivity and in beliefs about the ability to resist temptation. Thus, this

dissertation integrates three important streams of research to provide new insight on curiosity and its incidental effect on indulgent consumption.

Next, I review the literature that examines indulgent consumption and how the desire for rewards begets indulgent consumption. I then introduce a model for understanding how curiosity increases the desire for rewards and hence, preference for indulgent consumption (see Appendix A). Next, I summarize the findings of the four studies that demonstrate the proposed model and offer insight into the underlying processes. Finally, I end with a discussion of the theoretical and managerial implications of this dissertation.

HOT SYSTEM DOMINANCE IN INDULGENT CONSUMPTION

The choice of an indulgent temptation often reflects an interplay between the hot affective system and the cool cognitive system (Shiv and Fedorikhin 1999), whereby the hot system acts as an impetus for indulging (Loewenstein 1996; Metcalfe and Mischel 1999). Past research implicates that the ability to resist temptations is a consequence of a system of cool, emotionally neutral set of cognitions. The cool system is deliberative and guides behaviors in a goal-consistent manner. Examples of cool system cognitions that affect indulgent consumption include construal level (Fujita and Roberts 2010), time perspectives (Hoch and Loewenstein 1991; Winterich and Haws 2011), attitudes towards indulgence (Haws and Poynor 2008), and cognitions relating to the negative consequences of indulging (Mukhopadhyay, Sengupta, and Ramanathan 2008).

The hot system, in contrast, is believed to be affect-driven. It is both activated and controlled by 'hot cues' (e.g., temptations), with the primary response being to approach objects of desire. Given its ability to override the deliberative component of the cool system, the hot

system intensifies the present-focus of decision-making and neglects to consider both the short-term and long-term consequences of behaviors (Loewenstein 1996; Metcalfe and Mischel 1999). High arousal emotions (Cools, Schotte, and McNally 1992; Fedorikhin and Patrick 2010), visceral factors (Nordgren, van Harreveld, and van der Pligt 2009; Van Den Bergh et al. 2008), and reward saliency (Shiv and Fedorikhin 1999; Trudel and Murray 2013; Wadhwa, Shiv, and Nowlis 2008) play a vital role in activating the hot system and contributing to indulgent consumption. In accord, Shiv and Fedorikhin (2002) found that consumers who chose an indulgent choice option reported having more affect-based thoughts and showed greater activation of gratification-seeking goals.

HOT SYSTEM OF AROUSAL AND THE DESIRE FOR REWARDS

Metcalfe and Mischel (1999) likened the hot system to ‘feeling states’ in which certain feelings such as high levels of arousal or stress serve as both, a precursor to and a consequence of the hot system. For example, the feeling of deprivation that accompanies an unsatisfied drive state such as hunger, thirst, or cravings plays an important role in consumption decisions and yielding to temptation (Loewenstein 1996). When drive states are left unsatisfied, those in a craving state are more likely to expose themselves to temptations and are less willing to prolong consumption of their craving, even when they are offered a monetary reward for doing so (Nordgren et al. 2009). However, when the object of desire is unattainable, consumers may seek alternative rewards from exogenous sources. Specifically, enticing hunger (Xiuping 2008) or sexual arousal (Van Den Bergh et al. 2008) foster greater impatience and a steeper discounting rate for monetary rewards (Berger and Shiv 2011).

The desire and decision to indulge are strongly influenced by visceral drive states of hunger, thirst, and cravings that are controlled by the hot system (Alba and Williams 2013; Loewenstein 1996); however, not all drive states are based on physiological need. Consumers seek to maintain an optimal level of psychological arousal and engage in arousal-regulating consumption (Muro and Murray 2012). However, high levels of arousal may impair cognitive functioning (Fedorikhin and Patrick 2010) which may in turn disengage the cool system from the decision process and lead to suboptimal choices that are driven entirely by the hot system (Metcalf and Mischel 1999). As arousal becomes more aversive, it may function more like a visceral factor that leads to a preference for indulgence (Loewenstein 1996). Further, the intense feeling of arousal may reverse consumers' natural tendencies to resist impulsive purchases (Kacen and Lee 2002), override their dietary goals (Cools et al. 1992), and interfere with the facilitative effect that being in a positive mood can have on the ability to resist temptations (Fedorikhin and Patrick 2010). Thus, it stands to reason that other sources of arousal such as curiosity may similarly contribute to indulging.

CURIOSITY AS A FEELING OF DEPRIVATION

A curious mindset is characterized by elevated levels of (intense) arousal and emotion in response to stimuli or situations that are high in uncertainty or lacking in information (Berlyne 1954; Jepma et al. 2012; Loewenstein 1994). Loewenstein (1994) proposed that curiosity, in its hot visceral drive state, manifests as a feeling of cognitive deprivation that is brought about by the realization of an 'information gap' between one's current knowledge structure and their desired knowledge. This gap produces a strong desire for information (Litman 2005; Loewenstein 1996) that plays an integral role in facilitating exploration, acquiring information,

generating interest, and motivating learning (see Jirout and Klahr 2012 for review). For example, prior research has shown that curiosity generated greater interest for new products (Menon and Soman 2002) and elicited greater cognitive elaboration of advertisements (Steenkamp and Baumgartner 1992).

Neurologically, curiosity is similar to other visceral drive states such as hunger, thirst, sexual desire, and cravings (Jepma et al. 2012). If left unsatisfied, curiosity intensifies over time (Lee and Qiu 2009) and may lead to ruminative thinking over missing information (Shani, Igou, and Zeelenberg 2009; Shani et al. 2012). As a result, curious individuals have been shown to seek out information that is potentially negative (Kruger and Evans 2009; van Dijk and Zeelenberg 2007) in order to reduce the feelings of discomfort from not knowing (Litman and Lunsford 2010; Shani et al. 2012). For example, people preferred to know whether or not their significant other was cheating on them rather than remain curious and this effect was replicated across a variety of potentially harming informational outcomes (Kruger and Evans 2009). Moreover, as with other drive states, the cognitive elaboration and ruminative thinking that result from curiosity may deplete cognitive resources as curious individuals will spend time and resources to obtain answers to more curiosity-provoking questions (Min Jeong et al. 2009) and show a greater allocation of attention to curiosity inducing stimuli (Jepma et al. 2012; Menon and Soman 2002; Wilson et al. 2005).

Perhaps the most relevant aspect of curiosity for indulgent consumption is the effects of curiosity on reward sensitivity and the liking of rewards. Previous research has suggested that having a heightened level of reward sensitivity has a negative effect on indulgent consumption in the form of temptation enactment (Dholakia et al. 2006) and that for consumers whose reward

responsiveness is high, so too is their desire for hedonic products (Wadhwa et al. 2008) and immediate monetary rewards (Van Den Bergh et al. 2008).

Curiosity is suggested to produce a hedonic response to the acquisition of knowledge, which may in and of itself be considered rewarding. For example, in a qualitative review on curiosity, participants equated satisfying their curiosity to a feeling of intense and pleasurable gratification (Levitt et al. 2009). This heightened sensitivity to rewards from curiosity is attributable to the effects that curiosity has on the incentive–reward systems of the brain (Jepma et al. 2012; Min Jeong et al. 2009). Specifically, fMRI studies have shown that when a state of knowledge deprivation activates a curious mindset, curiosity stimulates the reward centers of the brain both, during its arousal (Min Jeong et al. 2009) and its reduction (Jepma et al. 2012).

Further, even in the absence of a knowledge gap, individuals with higher disposition for being curious show an information processing bias when judging events in that they tend to focus on the positive consequences rather than the potentially negative outcomes and perceive positive events as being more likely to occur. That is, curious individuals evaluated risky behaviors as being more desirable in terms of providing emotional, social, and physical rewards (Maner and Gerend 2007). This occurs because individuals with a naturally high level of curiosity report higher scores on the reward responsiveness subscale of the Behavioral Approach System (BAS) (Kashdan et al. 2004), which indicates that curiosity may lead to a greater sensitivity towards reward cues and a heightened hedonic response to rewards (Carver and White 1994) and increased desire for rewards (Dholakia et al. 2006; Van Den Bergh et al. 2008; Wadhwa et al. 2008). Thus it appears that curiosity fosters a greater sensitivity to rewards that is not exclusive to the reward of knowledge. Building on this notion, the current research examines whether curiosity has an effect on the desire for rewards (i.e., motivational wanting), an

oftentimes co-occurring aspect of the incentive–reward system that is both psychologically (Carver and White 1994) and neurologically (Berridge, Robinson, and Aldridge 2009) distinguishable from reward enjoyment (i.e., hedonic liking).

DESIRE FOR REWARDS IN INDULGENT CONSUMPTION

The desire for rewards reflects the wanting system that motivates the pursuit of pleasurable experiences (Carver and White 1994; Hoch and Loewenstein 1991). Such desire is associated with the recurrence of maladaptive behaviors despite awareness of the negative consequences that these behaviors engender (Kavanagh, Andrade, and May 2005). This in turn makes the desire for rewards a precursor to succumbing to temptation (Dholakia et al. 2006; Ramanathan and Menon 2006; Van Den Bergh et al. 2008; Wadhwa et al. 2008). Research has suggested that the desire for rewards is epiphenomenal in that it is both a cause and a consequence of neurological changes (activation of reward pathways) and individual differences in sensitivity to reward cues (Carver and White 1994; Gray 1987, 1990).

Neurological Underpinnings in the Desire for Rewards

Succumbing to indulgent temptations is certainly a factor of the strength of the desire (Hofmann et al. 2012). Desires have a strong affective component that is associated with either the anticipation of pleasure or with the relief of discomfort (Kavanagh et al. 2005). Desire for an object excites reward circuits in the limbic system and this activation increases the amount of attention given to the rewarding properties of a temptation (McClure et al. 2004). The mere thought or presence of a temptation is enough to create an intense desire for indulgent rewards and an approach motivation towards satisfying those desires (Kavanagh et al. 2005; Shiv and Fedorikhin 1999; Wadhwa et al. 2008; Wilcox et al. 2009; Xiuping 2008). Some research has

even suggested that such exposure generates some of the same neurochemical processes and physiological sensations that are related to the actual consumption of the desired temptation (Kavanagh et al. 2005).

Extant research has shown that because most rewards are processed similarly in the brain (McClure et al. 2004), exciting this circuitry through exposure to a temptation cue fosters a greater impatience for unrelated (monetary) rewards (Van Den Bergh et al. 2008; Xiuping 2008). This may be because a temptation for which consumption is inhibited fosters a feeling of deprivation that leads to a greater desire to consume any rewarding product (Geyskens et al. 2008). Although, states of deprivation are best satiated by the desired object (Loewenstein 1996; Nordgren et al. 2009), the generalized nature of reward-seeking leads consumers to crave anything (i.e., domain-independent) that is more favorable on an immediate affective dimension even if it is less favorable in terms of the long-term consequences (Berger and Shiv 2011; Van Den Bergh et al. 2008; Xiuping 2008). As such, providing any reward may be sufficient in satiating a desire for rewards. For example, tasting something sweet increased the desire to overindulge; but, providing consumers with a monetary reward attenuated this effect (Wadhwa et al. 2008). Similarly, Berger and Shiv (2011) demonstrated the reciprocal nature of the reward system. Their research found that distinctiveness, which is perceived as rewarding, increased the desire for other rewards, and furthermore, other rewards increased the desire for distinctiveness.

Given that curiosity increases individuals' sensitivity towards rewards when such cues are encountered (Kashdan et al. 2004; Kruger and Evans 2009) and excites reward-centers of the brain (Jepma et al. 2012; Min Jeong et al. 2009), it is possible that when curiosity cannot be satisfied with the reward of knowledge, curiosity may lead to a generalized desire for rewards

including a desire for indulgent temptations. Thus, I predict that curiosity will increase indulgent consumption by increasing the desire for rewards.

H₁: Consumers in a state of high curiosity will engage in more indulgent consumption than consumers in a low state of curiosity.

H₂: Desire for rewards will mediate the increase in indulgent consumption related to priming curiosity.

Individual Differences in Reward Sensitivity

Noting that some individuals show a greater sensitivity towards rewards when such cues are encountered, Gray (1987, 1990) suggest that some individuals have a more sensitive Behavioral Activation System (BAS) and exhibit a stronger appetitive motive to approach rewards and engage in reward-seeking behaviors (Carver and White 1994). The level of reward sensitivity (as indicated by the BAS) has a negative effect on indulgent consumption in the form of temptation enactment (Dholakia et al. 2006). For example, those high on reward responsiveness (e.g., high on BAS) showed a stronger desire for hedonic products such as chocolate cake or a vacation in Bora Bora than did those who were more sensitive to punishment (Wadhwa et al. 2008). Similarly, the BAS has been shown to moderate the effect of sexual arousal on the desire for monetary rewards such that sexual arousal increases the preference for a smaller-sooner reward, but only for those high on reward sensitivity (Van Den Bergh et al. 2008).

In line with this body of research, I predict that individual differences in reward sensitivity will moderate the effect of curiosity on indulgent consumption in that curiosity will

increase indulgent consumption amongst those high in reward sensitivity, but will not for individuals low on reward sensitivity.

H₃: Being in a state of high curiosity versus a state of low curiosity results in more indulgent consumption when consumers are high on BAS, but will not increase indulgent consumption when consumers are low on BAS.

IMPLICIT THEORIES ABOUT WILLPOWER

The ability to resist temptations is often construed as an interactive process consisting of both external and internal factors with beliefs about one's ability to regulate behavior helping to determine one's susceptibility to indulging (Fujita 2011). Thus, it may be possible that some individuals will be more prone to indulgent consumption when in a curious mindset, but that others may be immune to its influence.

Beliefs such as whether or not one tends to act on impulse (i.e., trait impulsiveness) or that one is good at resisting temptations (i.e., trait level self-control) are strong predictors as to whether or not a consumer is likely to indulge. For example, Ramanathan and Menon (2006) showed how priming a sweetness goal increases the desire for cookies after initial exposure to this temptation and that for those with high impulsive tendencies, this desire persisted until it was satisfied. Furthermore, restrictive goals were found to be more chronically accessible to those high on trait level self-control and therefore guided preferences even when indulgent goals were made salient (Poynor and Haws 2009; Wilcox et al. 2009).

Individuals also differ in their implicit theories about willpower and whether they consider self-control and the ability to resist temptations to be, in general, a limited or unlimited resource (Job, Dweck, and Walton 2010; Mukhopadhyay and Johar 2005; Vohs, Baumeister, and

Schmeichel 2012). Implicit theories are the deeply held beliefs that individuals have regarding whether attributes relating to the self or to the environment are fixed and uncontrollable or are changeable and thus able to be improved upon (Dweck, Chiu, and Hong 1995). Labeled entity and incremental theories, respectively, these two mindsets play an important role in forming judgments (Dweck et al. 1995; Hong et al. 1997) and determining self-regulatory outcomes (Burnette et al. 2013). For example, entity theorists are more outcome-focused (Jain, Mathur, and Maheswaran 2009) and thus show a greater tendency to dread failure (Hong et al. 1999; Nussbaum and Dweck 2008). In contrast, incremental theorists focus the process (Jain et al. 2009) and thus are more accepting of failure given their belief that their performance may change over time and be improved upon (Hong et al. 1999; Nussbaum and Dweck 2008)

Similar to entity theorists, some individuals endorse a limited theory about willpower and implicitly believe that strenuous mental activity exhausts resources. As a consequence, they believe that once a person has successfully resisted a temptation, that person is hindered in their ability to do so again. In contrast, individuals adopting an unlimited theorist perspective on resisting temptations support an incremental orientation towards willpower. They are of the belief that people have a large reserve of self-control, and therefore the ability to resist temptations is considered to be a renewable resource that is not subject to depletion (Job et al. 2010; Mukhopadhyay and Johar 2005; Vohs et al. 2012). Research on implicit theories about willpower has shown that when resources are depleted by a prior act of self-control, limited theorists performed worse on a subsequent self-control task (Job et al. 2010; Vohs et al. 2012), had a greater preference for immediate rewards (Vohs et al. 2012), and generally had a lower success rate for achieving goals than do those who perceive willpower as an unlimited resource (Job et al. 2010). Furthermore, even when limited theorists are led to believe that self-control is a

malleable trait, they still set fewer goals and have a lower success rate for achieving those goals than do their unlimited theorist counterparts (Mukhopadhyay and Johar 2005).

Taken together, these findings suggest that limited theorists who believe that willpower, or more specifically, the ability to resist temptations is subject to depletion, should be less able to regulate their behavior when in a curious state of deprived knowledge and that they should be more sensitive to reward cues. That is, when their curiosity has been aroused and has heightened their desire for rewards, they may perceive it as more difficult to resist the reward of a temptation and expect themselves to fail. As a result, those who endorse a limited theory about the willpower to resist temptations will be more likely to indulge when they are faced with an indulgent temptation when their curiosity is high as compared to when their curiosity is low.

H_{4A}: Being in a state of high curiosity versus a state of low curiosity results in more indulgent consumption when consumers endorse a limited-resource theory about the willpower to resist temptations.

In contrast, unlimited theorists who believe that the willpower to resist temptations is a renewable resource should be less susceptible to their immediate desire for rewards and be better equipped to execute restraint than will those who believe that self-control resources are limited and subject to depletion. If so, then having a curious mindset that increases their desire for rewards should be less influential on indulgent consumption for unlimited theorists because of their belief that resisting temptation is always a viable option.

H_{4B}: Being in a state of high curiosity versus a state of low curiosity will not affect indulgent consumption when consumers endorse an unlimited-resource theory about the willpower to resist temptations.

STUDY 1

Overview and Method

Study 1 intends to show that curiosity increases the desire for rewards and produces a greater preference for indulgent over virtuous consumption. Further, this study establishes discriminant validity for the curiosity manipulation by demonstrating that the manipulation does not affect something other than curiosity. Specifically, it rules out differences in task involvement or changes in mood as plausible alternative explanations for Study 1's findings.

Study 1 employed a two-level, single-factor (curiosity: high vs. low) between-subjects design with curiosity as a between-subjects independent variable and indulgent consumption as a binary dependent variable. Indulgent consumption was operationalized as the choice of a "lowbrow" (indulgent) movie as opposed to a "highbrow" (virtuous) movie, as described in more detail below. One hundred and twenty-three participants were recruited through Amazon Mechanical Turk in return for monetary compensation. Responses from all observations were included in the analyses.

The study was divided into two ostensibly unrelated parts. The first part manipulated curiosity by exposing participants to 15 blurry images and asking them to make a guess as to what the actual image was. After making their guess, participants in the low curiosity condition were shown the corresponding unblurred image, whereas participants in the high curiosity condition were not shown the unblurred image but were instead asked to indicate how curious they were to find out the answer, on a seven-point Likert-type scale (1—not at all curious; 7—very curious) (Jepma et al. 2012). Appendix A provides an illustration of the stimuli used in the two conditions.

Participants in both conditions were then asked to respond to several statements that included a manipulation check (“My curiosity is aroused”; 1—not at all; 7—very much so) and an assessment of their mood (“I feel happy” and “I feel sad”). They also completed a measure of involvement using four items anchored on 7-pt scales (1—was not at all involved; 7—was very involved; 1—did not perform the task very carefully; 7—performed the task very carefully; 1—expended very little effort; 7—expended a great deal of effort; 1—was not at all motivated; 7—was very motivated) (Zhu and Argo 2013).

The second part of the study employed a movie selection task adapted from an established indulgent consumption task by Read et al. (1999). Movies are instrumental for studying vices and virtues because most people enjoy watching movies but few tend to explicitly classify them as being either a vice or a virtue (Read et al. 1999). This tendency allows for a relatively unobtrusive investigation of indulgent consumption. Participants were asked to choose between two movies, an indulgent “lowbrow” movie (Bruce Almighty) and a virtuous “highbrow” movie (Schindler’s List). An independent pretest ($n = 51$) confirmed that participants were equally likely to watch either movie ($M_{Lowbrow} = 4.96$, $SD = 1.99$ vs. $M_{Highbrow} = 5.54$, $SD = 1.96$; $t(49) = 1.49$, NS), but that the lowbrow movie was considered to be more indulgent in terms of offering short-term benefits ($M_{Lowbrow} = 6.31$, $SD = .76$ vs. $M_{Highbrow} = 2.52$, $SD = 1.66$; $t(49) = 14.43$, $p < .001$, Cohen’s $d = 2.96$) and providing more entertainment and greater pleasure ($M_{Lowbrow} = 6.53$, $SD = .70$ vs. $M_{Highbrow} = 1.94$, $SD = 1.36$; $t(49) = 20.79$, $p < .001$, Cohen’s $d = 4.24$).

Study participants were informed that they would be shown a two-minute trailer from the movie they chose. During the decision task, participants were provided with the cover photo of both movies alongside a short description of each movie’s plot taken from the Internet Movie

Database (www.imdb.com), and a list of the starring actors and directors. Participants were then asked to indicate whether they had seen each movie and to select which one of the movies they would prefer to watch.

Finally, participants were asked to complete a measure of their desire for rewards (Tiffany and Drobes 1991) and then shown a two minute trailer from the movie they selected. Desire for rewards was measured using a modification of the ten-item scale, the Brief Questionnaire on Smoking Urges, developed by Tiffany and Drobes (1991). The two factor scale assesses desires and intentions to engage in a behavior (i.e., smoking) for a) the anticipated pleasure of doing so and b) the relief from feelings of deprivation or negative affect. This scale was selected because of its convergence with this dissertation's definition of desire. The scale was adapted to fit the study objectives by replacing the words "cigarettes" and "smoking" with "watching this movie". Sample items include "I have a desire to watch this movie right now" and "I am going to watch this movie as soon as possible" (See Appendix B for a full list of items). Items were measured on a 7-pt scale (1—strongly disagree; 7—strongly agree) and the responses were averaged to form a desire for rewards index (Cronbach's $\alpha = .94$).

Results

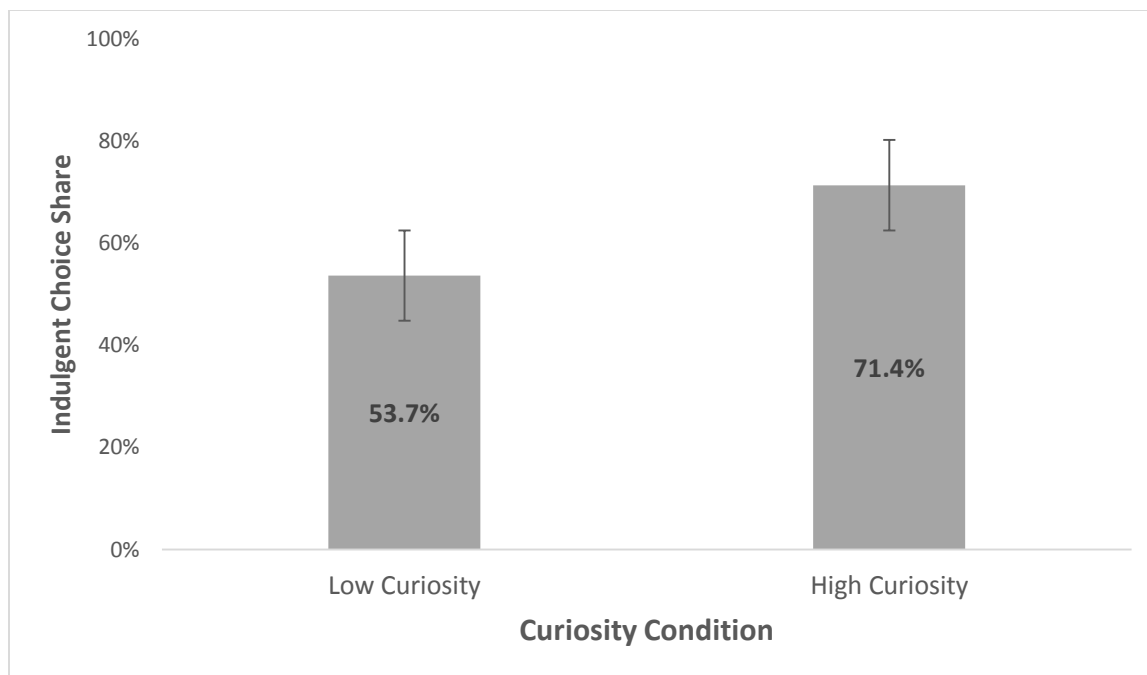
Manipulation Check. The manipulation of curiosity was successful. As expected, participants in the high curiosity condition reported a more aroused state of curiosity ($M_{High} = 5.89$, $SD = 1.28$) than did participants in the low curiosity condition ($M_{Low} = 5.31$, $SD = 1.27$), $t(119) = 2.47$, $p < .05$, Cohen's $d = .45$.

Effect of the Manipulation on Other Affective States. The four items from the involvement scale were averaged to form an involvement index (Cronbach's $\alpha = .91$). There was

no difference in involvement on the image task between the two conditions ($M_{High} = 5.79$, $SD = 1.26$; $M_{Low} = 5.81$, $SD = 1.16$; $t(121) = 0.06$, *n.s.*). Furthermore, there was no difference in self-reported happiness ($M_{High} = 5.20$, $SD = 1.39$; $M_{Low} = 4.78$, $SD = 1.32$; $t(121) = 1.71$, NS) or sadness ($M_{High} = 2.30$, $SD = 1.48$; $M_{Low} = 2.52$, $SD = 1.51$; $t(119) = 0.81$, NS.) across the two curiosity conditions. Together, these results rule out task involvement and mood as alternative explanations for my findings.

Effect of Curiosity on Indulgent Consumption. Results showed that a significantly greater proportion of participants chose the lowbrow (indulgent) choice option in the high curiosity condition (71.4%) than in the low curiosity condition (53.7%; Wald's $\chi^2 = 3.99$; $p < .05$). Figure 2 illustrates this finding.

Figure 2: Study 1: Main Effect of Curiosity on Choice Share Selecting the Indulgent Movie



Mediational Tests of Desire for Rewards. Next, to test whether the desire for rewards mediates the increase in indulgent consumption when curiosity is high, the data were subjected to both the classic approach (Baron and Kenny 1986) and the more recent PROCESS approach

(Hayes 2013) to test for mediation. Because the data included a binary dependent variable (i.e., movie choice), binary logistic regressions were employed (Mackinnon and Dwyer 1993).

The first binary logistic regression with curiosity as the predictor and choice as the dependent variable confirmed that a state of high of curiosity increased the likelihood that participants would select the indulgent movie ($B = .77$, $SE = .38$, Wald's $\chi^2 = 3.99$; $p < .05$). A second binary logistic regression with desire for rewards as the predictor and choice as the dependent variable was also significant ($B = .34$, $SE = .15$, Wald's $\chi^2 = 5.27$; $p < .05$), as was a linear regression with curiosity as the predictor and desire for rewards as the dependent variable ($B = .60$, $SE = .24$, $t = 2.52$, $p < .05$). However, when both curiosity and desire for rewards were included as predictors of choice in another binary logistic regression, only desire for rewards remained a significant predictor of choice ($B = .30$, $SE = .15$, Wald's $\chi^2 = 3.85$; $p < .05$), whereas curiosity was a nonsignificant predictor ($B = .62$, $SE = .40$, Wald's $\chi^2 = 2.45$; NS), indicating full mediation (Sobel's $z = 1.69$, $p < .05$).

To test further for mediation, I employed the PROCESS macro from Hayes (2013) and subjected the data to a simple mediation analysis (model 4) with 1,000 bootstrapped samples. Results showed that as the desire for rewards mediated the effect of curiosity on choice of the indulgent movie (the estimated coefficient of the indirect effect was .18, with a 95% confidence interval [CI] exclusive of 0 [.01, .58]). Based on these findings, I conclude that these results provide initial support for my model, as they indicate that priming a state of high curiosity increases indulgent consumption through a heightened desire for rewards.

Discussion

The results of Study 1 support hypotheses 1 and 2. As predicted, a state of high curiosity led to greater indulgence and this greater likelihood of indulging was driven by an increased desire for rewards. Furthermore, this study showed the generalized nature of this desire as those in the high curiosity condition expressed a greater desire for the reward of watching an indulgent movie, which was unrelated to the object of their curiosity. Furthermore, the manipulation of curiosity did not affect the level of involvement or mood.

Study 2 test these effects of curiosity on the desire for rewards by examining the behavioral activation system (BAS), a trait related to the sensitivity toward rewarding stimuli. The BAS has been used in recent consumer research to as a moderator to investigate the desire for rewards (Van Den Bergh et al. 2008; Wadhwa et al. 2008). Thus, to further support the proposition that curiosity produces a desire for rewards, Study 2 tests whether the effect of curiosity on indulgent consumption is more prevalent among consumers who exhibit reward-seeking tendencies than among those who do not exhibit such a tendency.

STUDY 2

Overview and Method

Study 2 intends to provide additional support for the proposed mechanism of desire for rewards. Research has shown that if a desire for rewards underlies the effects on consumption behavior, then the effect of curiosity on indulgent consumption should be considerably more pronounced in consumers with a higher disposition to desire rewards than in those with a lower disposition to desire rewards (Van Den Bergh et al. 2008; Wadhwa et al. 2008). Research on the BAS has shown that consumers vary in their sensitivity to appetitive cues, such that consumers

who report a high BAS exhibit a stronger motivation to seek out rewards (Carver and White 1994; Gray 1990). In the present context, these findings suggest that high BAS consumers should be more sensitive to the effects of curiosity on the desire for rewards and, therefore, should show a greater propensity to indulge when their curiosity is aroused. Thus, it is predicted that consumers high on the BAS will be more likely to indulge when their curiosity is high as opposed to low, whereas consumers low on the BAS will show no difference in their indulgent behavior.

Study 2 employed a two-factor between-subjects design with curiosity (high vs. control) as a between-subjects independent variable, BAS measured as a continuous independent variable, and indulgent consumption measured as a continuous dependent variable. Indulgent consumption was operationalized as the amount participants were willing to pay for a luxury vacation. One hundred and seventy-three participants were recruited from the undergraduate subject pools at two large public universities for course credit compensation. All observations were included in the analyses.

Study 2 was divided into three sections in order to conceal the true objectives from the participants. The first section consisted of a curiosity induction task adapted from Lerner and Keltner (2001), who demonstrated that writing about an affective state can intensify the experience of that state. Participants in the high curiosity condition read the following definition of curiosity: “Curiosity is often described as an unpleasant feeling of not knowing that is accompanied by a strong desire to find out the missing information” (Loewenstein 1994). These participants were then asked to list two or three experiences that had made them feel highly curious in which their curiosity has not been satisfied (i.e., they had never acquired the missing information). Participants in the control condition did not read the definition of curiosity and

were asked to list two or three experiences that they had the day before. Participants in both conditions were then instructed to select one of the experiences that they had listed and to write a paragraph describing the experience in detail and as vividly as possible. Immediately following this procedure, participants completed a six-item measure of affective states in which they were asked to rate the extent to which they were experiencing each affective state (curious, alert, attentive, happy, sad, anxious) on a seven-point Likert-type scale (1—not at all; 7—very much).

In the second section, participants were asked to imagine that they were planning to go on an all-inclusive three-day vacation to the Bahamas for which they had saved \$1,000. However, the price of the trip ranged from \$1,200 to \$2,200, depending on how luxurious they wanted the trip to be. Participants were then asked how much more they would be willing to spend in addition to their savings on a scale ranging from \$200 to \$1,200 by using a credit card (Wadhwa et al. 2008).

In the third section of the study, participants completed Carver and White's (1994) 16-item BAS measure on seven-point Likert-type scales (1—strongly disagree; 7—strongly agree). Sample items included “When I want something, I usually go all out to get it” and “When I see an opportunity for something I like, I get excited right away” (Cronbach's $\alpha = .81$).

Results

Manipulation Check. The manipulation of curiosity was judged successful. As expected, participants in the high curiosity condition reported being more curious post-task ($M_{High} = 4.29$, $SD = 1.62$) than did participants in the control condition ($M_{Control} = 3.87$, $SD = 1.76$), $t(171) = 2.70$, $p < .01$, Cohen's $d = .41$.

Effect of the Manipulation on Other Affective States. There were no significant differences in alertness ($M_{High} = 4.29$ $M_{Control} = 4.03$; $t(170) = 1.01$, NS), attentiveness ($M_{High} = 4.56$; $M_{Control} = 4.33$; $t(171) = 1.00$, NS), happiness ($M_{High} = 4.81$; $M_{Control} = 4.46$; $t(171) = 1.78$, NS), sadness ($M_{High} = 2.40$; $M_{Control} = 2.46$; $t(171) = -.28$, NS), or anxiety ($M_{High} = 3.70$; $M_{Control} = 3.43$; $t(171) = .99$, NS) between the two conditions, suggesting that the curiosity manipulation did not influence other affective states.

Effect of Curiosity on Indulgent Consumption. Convergent with the findings of Study 1, participants in the high curiosity condition were willing to spend more on a luxury vacation ($M_{High} = \$473.84$, $SD = \$259.95$) than were participants in the control condition ($M_{Control} = \$390.45$, $SD = \$225.24$), $t(171) = 2.56$, $p < .05$, Cohen's $d = .34$. This finding provides further support for the proposition that curiosity increases indulgent consumption.

Moderation Effect of BAS. To test hypothesis 3 which predicts that the BAS will moderate the effect of curiosity on indulgent consumption, the data were subjected to a multiple regression with the amount participants were willing to pay as the dependent measure and curiosity, BAS (mean centered; measured as a continuous variable), and their interaction term as the predictors. Results confirmed the predicted simple effect of curiosity on indulgent consumption ($B = 80.74$, $SE = 36.74$, $t = 2.20$, $p < .05$) as well as a significant curiosity \times BAS interaction effect on indulgent consumption ($B = 76.74$, $SE = 36.86$, $t = 2.08$, $p < .05$). To facilitate the interpretation of this interaction effect, spotlight analyses were performed at 1 SD above and at 1 SD below the mean BAS score (Aiken and West 1991; Fitzsimons 2008). Simple slope analyses revealed that at 1 SD above the mean BAS score, arousing curiosity increased the amount participants were willing to pay for a luxury vacation ($B = 157.84$, $SE = 51.98$, $t = 3.03$, $p < .01$). In contrast, at 1 SD below the mean BAS score, participants showed no difference in

their willingness to pay when their curiosity was aroused versus when it was not ($B = 4.00$, $SE = 52.11$, $t = .08$, NS). These findings suggest that, for consumers whose curiosity has been stimulated, anything that is rewarding by nature (e.g., a luxury vacation) becomes more attractive to those consumers who are sensitive to reward cues (i.e., high BAS consumers) but does not become more attractive to those consumers who are less sensitive to reward cues (i.e., low BAS consumers). Figure 3 illustrates this finding.

Figure 3: Study 2: Interaction Effect of Curiosity and BAS Sensitivity on the Amount Willing to Pay for Luxury Vacation



Discussion

The results of Study 2 provide further evidence that curiosity impacts indulgent consumption and show that this effect may be due to a heightened desire for rewards. The

findings suggest that instigating a state of curiosity can make consumers more sensitive to rewarding stimuli in the environment. Specifically, the induction of curiosity led participants to express a greater desire for an indulgence that was unrelated to the object of their curiosity when compared to participants who were not induced with curiosity in that curious participants were willing to spend more on their credit card for a luxury vacation than were participants in the control condition.

More importantly, Study 2 found that curiosity had an effect on indulgent consumption for participants high on BAS sensitivity, supporting hypothesis 3. Specifically, high BAS consumers in the curiosity condition were willing to spend more on their credit card than were high BAS consumers in the control condition. However, curiosity had no effect on indulgent consumption for participants low on BAS sensitivity: low BAS consumers in the curiosity condition were willing to spend approximately the same amount on their credit card as were low BAS consumers in the control condition. As such, Study 2 implies that curiosity triggers a greater sensitivity to rewards that may fuel a desire for anything rewarding, including that of an indulgent consumption, but only for consumers who are already sensitive to reward cues.

Study 1 and Study 2 provide evidence that curiosity produces an increased desire for rewards that instigates indulgent consumption. Study 1 showed that curiosity may increase the desire for rewards and that this desire, in turn, makes the lure of temptations more difficult to resist. In Study 2, this effect was found to be true for consumers with high but not low level of reward sensitivity, as captured by the BAS. The objective of Study 3 was to further explore whether or not some types of consumers would be able to resist succumbing to the increased desire for rewards that is generated by their curiosity based on their current mindset.

Building on findings that generalized beliefs about willpower influence performance on self-control tasks (Job et al. 2010; Mukhopadhyay and Johar 2005; Vohs et al. 2012), it is predicted that one's beliefs about whether one has limited or unlimited willpower to resist temptations influences how one reacts to an indulgent cue and that these differences may moderate the effect of curiosity on indulgent consumption. Following this theorizing, Studies 3 and 4 test the predictions that consumers who believe that the willpower to resist temptations is limited and finite will become likely to indulge when their high level of curiosity has produced an increased desire for the rewarding temptation. However, because unlimited theorists are more equipped to resist temptations, it is expected that unlimited theorists will show no difference in indulgent behavior at different levels of curiosity.

The next two studies extend the previous findings in four ways. First, Studies 3 and 4 replicate the results of Studies 1 and 2 in the domain of food consumption. Second, Studies 3 and 4 show that beliefs regarding the willpower to resist temptations moderate curiosity's effect on indulgent consumption by decreasing the desire for rewards. While Study 3 uses a manipulation of implicit theories about willpower, Study 4 employs a trait measure of implicit theories about willpower. Study 4 also rules out an alternative mechanism of reward enjoyment.

STUDY 3

Overview and Method

Study 3 was intended to replicate and extend findings from Studies 1 and 2 in a different context (food choice: chocolate cake vs. fruit salad) while also manipulating the proposed moderator. Importantly, Study 3 tests whether the effect of curiosity on indulgent consumption will no longer hold when consumers are led to believe that the willpower to resist temptations is

an unlimited resource. It is predicted that even when curiosity is high, participants who are led to believe that the willpower to resist temptations is an unlimited resource will still be able to successfully resist the indulgent temptation. However, I expect that the impact of curiosity on indulgent consumption will still be present when consumers are led to believe that their ability to resist temptations is limited. As such, I expect that the belief that willpower is an unlimited resource functions as a boundary condition.

Study 3 employed a 2 (curiosity level: high vs. low) \times 2 (implicit theory about willpower: limited vs. unlimited) between-subjects design with curiosity and implicit theory about willpower as between-subjects independent variables and indulgent consumption as a binary dependent variable. Indulgent consumption was operationalized as the choice of an indulgent dessert (chocolate cake) over a healthy dessert (fruit salad). One hundred forty-five participants were recruited through Amazon Mechanical Turk in exchange for monetary compensation. All observations were included in the analyses.

To conceal the true objectives of the study, the participants were informed that they would be completing multiple tasks within the study. The first section consisted of a curiosity induction task similar to the one was used in Study 2; however, instead of having a control condition, a state of low curiosity was induced as described below. Before participants began the writing task, they completed a six-item measure of affective states in which they were asked to rate the extent to which they were experiencing each affective state (curious, alert, attentive, happy, sad, anxious) on a seven-point Likert-type scale (1—not at all; 7—very much). Next, participants read the following definition of curiosity: “Curiosity is often described as an unpleasant feeling of not knowing that is accompanied by a strong desire to find out the missing information” (Loewenstein 1994). Participants in the high curiosity condition were first asked to

list two or three experiences that made them feel the most curious and that they were still curious about because they did not know the answer. Participants in the low curiosity condition were asked to list two or three experiences that had made them feel the most curious but that they were no longer curious about because they were able to find out the answer. All participants were then instructed to select one of the listed experiences and to write a paragraph describing the experience in detail and as vividly as possible. Immediately following these two questions, participants completed the same scale of affective states that they completed prior to the curiosity induction task.

The second task involved an established implicit theory manipulation (Job et al. 2010; Vohs et al. 2012). Participants completed a biased questionnaire based on the six-item Implicit Theory about the Willpower to Resist Temptations scale (Job et al. 2010). From here on forward, the variable “implicit theories about the willpower to resist temptations” is abbreviated by referring to it as “implicit theories”. Participants in the limited theory condition rated their agreement to the three statements that measured a limited theorist orientation and were not exposed to the three statements that measured an unlimited theorist orientation. The items reflecting a *limited* implicit theory were “Resisting temptations makes you feel more vulnerable to the next temptation that comes along”; “When situations accumulate that challenge you with temptations, it gets more and more difficult to resist the temptations”; and “It is particularly difficult to resist a temptation after resisting another temptation right before.” Similarly, participants in the unlimited theorist condition were asked to rate their agreement with only the three statements that suggested that the ability to resist temptations was a renewable and unlimited resource. The items reflecting an *unlimited* implicit theory were “If you have just resisted a strong temptation, you feel strengthened and you can withstand any new temptations”;

“Resisting temptations activates your willpower and you become even better able to face new upcoming temptations”; and “Your capacity to resist temptations is not limited. Even after you have resisted a strong temptation you can control yourself right afterwards.” Responses were recorded on a seven-point Likert-type scale (1—strongly disagree; 7—strongly agree). Based on the use of this manipulations in previous research (Job et al. 2010; Vohs et al. 2012), it was anticipated that responding to the unidimensional scale would prime beliefs that the willpower to resist temptations is either a limited or an unlimited resource.

In the final task, participants were asked to imagine that they were at a restaurant that was offering a fixed-price menu with the following two dessert options: a slice of chocolate cake or a fruit salad (counter-balanced). These two options were selected based on previous research that shows that chocolate cake is considered to be more indulgent than fruit salad (Mukhopadhyay and Johar 2005; Shiv and Fedorikhin 1999). A separate pre-test ($n = 28$) confirmed that chocolate cake ($M = 6.58$, $SD = .86$) was considered to be more of an indulgence than fruit salad ($M = 3.36$, $SD = 1.54$; 1—more of a virtue; 7—more of a temptation), $t(26) = 9.12$, $p < .001$, Cohen’s $d = 2.58$).

Participants were asked to decide between having the chocolate cake and having the fruit salad. Next, participants completed a thought listing protocol in which they were asked to describe, as completely as possible, whatever thoughts went through their minds while deciding between the two desserts. The listed thoughts were coded by two trained independent judges (unaware of the hypotheses) as reflecting either a high or low level of desire and served as the measure of desire for rewards. Based on Tiffany and Drobes’ (1991) definition of desire, high levels of desire were associated with thoughts reflecting one or more of the following characteristics: (1) a desire to consume (e.g., wanting, urges, cravings); (2) anticipation of

positive outcomes from consumption (e.g., feel better, taste good, immediate benefits); (3) anticipation of relief from withdrawal-associated with negative affect (e.g., make them feel good, satisfy a craving); and (4) an intention to consume (e.g., I would eat this right now). Inconsistencies in the ratings of the two independent judges were resolved through discussion, and the interrater reliability was .92.

Results

Manipulation Check of Curiosity. The manipulation of curiosity was considered successful. As expected, participants in the high curiosity condition reported being more curious post-task ($M_{High} = 5.03$, $SD = 1.59$) than did participants in the low curiosity condition ($M_{Low} = 3.54$, $SD = 1.70$), $t(143) = 5.43$, $p < .001$, Cohen's $d = .91$. Comparing curiosity levels over time, results revealed that participants in the high curiosity condition exhibited a significant increase in curiosity from pre-task to post-task measurements ($M_{Pre} = 4.70$, $SD = 1.46$; $M_{Post} = 5.03$, $SD = 1.59$; $t(73) = 2.07$, $p < .05$, Cohen's $d = .22$), while participants in the low curiosity condition showed a decrease in their level of curiosity ($M_{Pre} = 4.51$, $SD = 1.61$; $M_{Post} = 3.54$, $SD = 1.70$; $t(69) = 4.70$, $p < .001$, Cohen's $d = .59$). A repeated-measures analysis of variance with condition as between-subjects independent variable, time as within-subjects independent variable, and self-reported curiosity as dependent variable confirmed that the interaction between condition and time on self-reported curiosity was significant, $F(1, 142) = 24.98$, $p < .001$, effect size $r = .39$.

Effect of the Manipulation on Other Affective States. There were no significant differences in alertness ($M_{High} = 5.34$; $M_{Low} = 5.01$; $t(141) = 1.26$, NS), attentiveness ($M_{High} = 5.35$; $M_{Low} = 5.19$; $t(142) = .64$, NS), happiness ($M_{High} = 4.55$; $M_{Low} = 4.76$; $t(143) = .76$, NS), or sadness ($M_{High} = 1.97$; $M_{Low} = 1.86$; $t(142) = .56$, NS) between the two curiosity conditions.

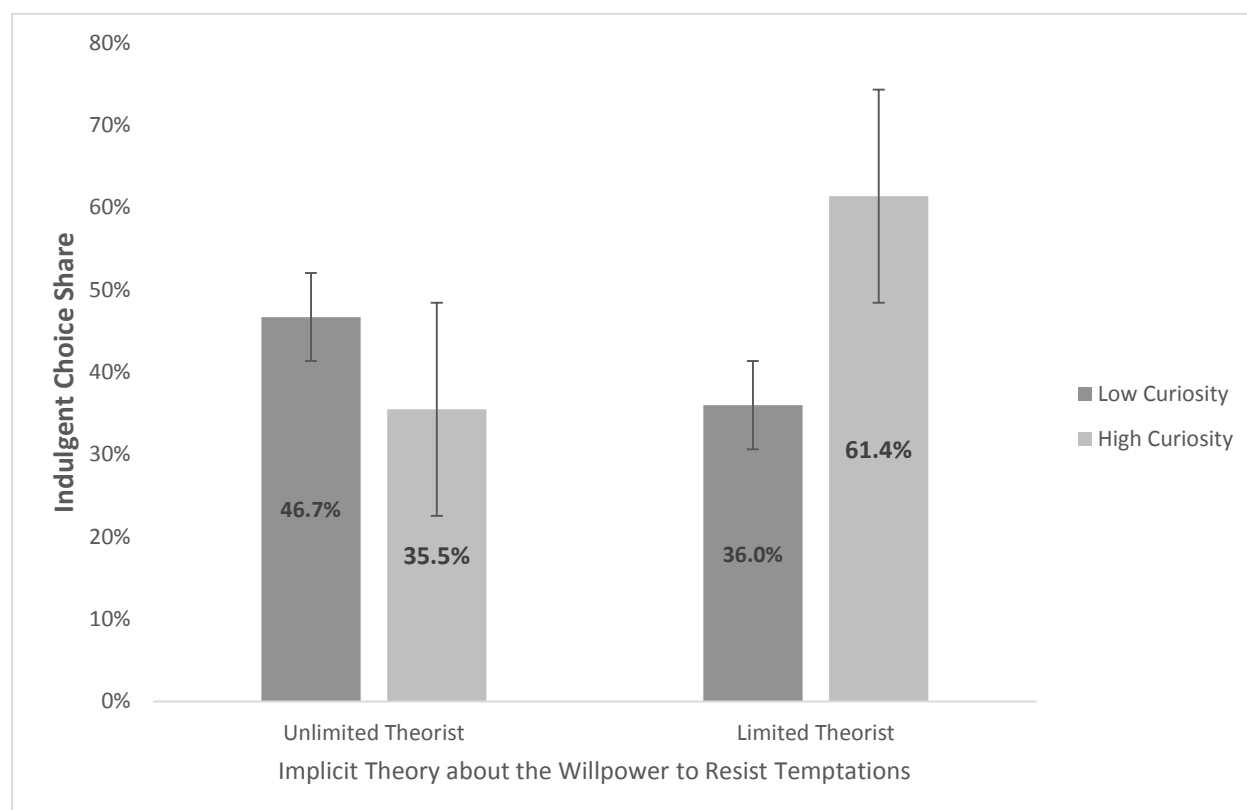
However, those in the high curiosity condition did report greater feelings of anxiety than did those in the low curiosity condition ($M_{High} = 2.80$ vs. $M_{Low} = 2.29$; $t(143) = 2.05$, $p < .05$). This is consistent with extant literature showing that curiosity caused by a feeling of not knowing the answer can create a feeling of uncertainty and tension (Litman et al. 2005).

Manipulation Check of Implicit Theories. The manipulation of implicit theories was successful. I followed the procedures of Job et al. (2010) to assess the validity of using a biased questionnaire to manipulate implicit theories. A one-sample t -test comparing the mean in each condition with the scale's midpoint (i.e., 3) indicated that participants agreed with the suggested theory in both the limited resource theory condition ($M = 3.58$, $SD = 1.29$; $t(68) = 3.75$, $p < .001$, Cohen's $d = .91$) and the unlimited resource theory condition ($M = 5.02$, $SD = 1.29$; $t(76) = 13.66$, $p < .001$, Cohen's $d = 3.13$).

Moderation of Implicit Theories on Indulgent Consumption. Logistic regression was used to test the predictions. Curiosity, implicit theory, and their interaction term were regressed on indulgent consumption (choice of the indulgent chocolate cake). Results revealed that there was a significant curiosity \times implicit theory interaction effect on indulgent consumption (Wald's $\chi^2 = 4.52$, $p < .05$). As depicted in Figure 4, linear contrasts revealed that limited theorists were more likely to select the chocolate cake when they were primed with a high state of curiosity (61.4%) compared to limited theorists who were primed with a low state of curiosity (36.0%; Wald's $\chi^2 = 4.00$, $p < .05$). However, there was no significant difference in indulgent choice between the high curiosity condition (35.5%) and the low curiosity condition (46.7%) for unlimited theorists (Wald's $\chi^2 = .94$, NS). These results provide initial support for the moderating role of implicit theories in that curiosity increased participants' preference for an indulgent choice option when primed to believe in a limited theory about the willpower to resist temptations but that curiosity

had no such effect when participants were primed to believe in an unlimited theory about the willpower to resist temptations.

Figure 4: Study 3: Interaction Effect of Curiosity and Implicit Theory about the Willpower to Resist Temptations on the Choice Share Selecting the Indulgent Dessert Option



Moderated-Mediation Effect of Implicit Theories. To test the hypothesis that desire for rewards mediates the effects of curiosity on indulgent consumption and that such mediation is moderated by implicit theories, the data were subjected to a series of logistic regressions based on the procedures recommended by Mackinnon and Dwyer (1993), who describe the methodology for testing dichotomous mediators. Results confirmed a significant interaction effect of curiosity \times implicit theory on choice of the indulgent chocolate cake ($B = 1.50$, $SE = .71$, Wald's $\chi = 4.52$, $p < .05$) and on the proposed mediator ($B = 1.82$, $SE = .75$, Wald's $\chi = 5.87$, $p < .05$). Furthermore, a high level of desire for rewards significantly predicted selection of

the indulgent chocolate cake ($B = 1.03$, $SE = .36$, Wald's $\chi = 8.01$, $p < .01$). However, when desire for rewards was entered into the model simultaneously with the curiosity \times implicit theory interaction term, only desire for rewards remained a significant predictor ($B = .87$, $SE = .38$, Wald's $\chi = 5.13$, $p < .05$), while the curiosity \times implicit theory interaction term was a nonsignificant predictor ($B = 1.22$, $SE = .73$, Wald's $\chi = 2.78$, NS). The result of a Sobel test confirmed that when curiosity was high, a greater desire for rewards mediated the increase in indulgent consumption for those primed with a limited theory (Sobel's $z = 1.85$, $p = .06$).

Discussion

Study 3's results offer further support for the prediction that curiosity increases indulgent consumption, but that beliefs regarding the willpower to resist temptations determine consumer's susceptibility to the influence of curiosity on indulgent consumption. Study 3 finds that curiosity does not increase indulgent consumption when consumers are led to believe that the willpower to resist temptations is an unlimited resource. However, when consumers were led to believe that the willpower to resist temptations is limited, a high state of curiosity increased the likelihood of indulging. Further, it was found that this discrepancy is attributable to differences in the desire for rewards. For limited theorists, choice was found to have been influenced more by desires when curiosity was high compared to when it was low. However, the desire for rewards was reduced when consumers were led to endorse an unlimited theory about the willpower to resist temptations. Furthermore, Study 3 shows that when beliefs are momentarily activated situationally, they have a powerful influence on the ability to resist temptations. While Studies 1 through 3 provide solid evidence on the effects surrounding curiosity, desire for rewards, and indulgent consumption, Study 4 was designed to answer a remaining question regarding the

plausibility of an alternative mechanism of reward enjoyment as a mediator of the curiosity-indulgence relationship.

STUDY 4

Overview and Method

Study 4 intends to replicate the boundary condition identified in Study 3 as well as replicate of the findings from Studies 1 through 3, which showed that curiosity reduces consumers' ability to resist the lure of temptations. Further, it evaluates the argument that curiosity increases indulgent consumption because it offers greater reward enjoyment rather than because it increases reward desire. Research has made a distinction between reward desire (i.e., “wanting”) versus reward enjoyment (i.e., “liking”) (Berridge et al. 2009) and has shown that the anticipation of enjoyment increases indulgent consumption (Ran Kivetz and Itamar Simonson 2002). Thus, the main objective of Study 4 is to rule out this possibility.

Study 4 employed a two-factor between-subjects design with curiosity (high vs. low) as between-subjects independent variable, implicit theory about willpower measured as continuous independent variable, and indulgent consumption as continuous dependent variable. Indulgent consumption was operationalized as the number of chocolate candies consumed by participants. One hundred forty participants were recruited from the undergraduate subject pool at a large public university for course credit compensation. All observations were included in the analyses.

Study 4 was divided into four parts in order to conceal the true objectives from participants. First, participants were asked to rate their current level of hunger, to report how long it had been since their last meal, and to indicate their current dieting status and liking of chocolate (as none of these factors had a significant effect on consumption, they are not

discussed further). Next, participants completed a measure of affective states in which they rated the extent to which they were experiencing six affective states (alert, attentive, curious, happy, sad, anxious) using a seven-point Likert-type scale (1—not at all; 7—very).

Second, participants responded to a curiosity induction task. The procedures and stimuli used were identical to those used in Study 1. Additionally, participants completed the same affective measure that was completed pre-task.

Third, participants were informed that they would be participating in a “taste test” of chocolate candies. Participants were instructed to raise their hand, at which time a lab assistant gave them a white plastic cup containing ten generic chocolate candies resembling M&Ms. Prior to tasting the chocolate candies, participants were asked to complete the same measure of their desire for rewards that was used in Study 1, except that instead of reporting their desire for movies, participants were asked to report their desire for chocolates. Participants were then told that they could consume as many of the chocolates as they desired but would not be allowed to take any outside the lab. Once the participants were finished, they were instructed to raise their hand again, at which point a lab assistant collected each cup and discreetly recorded the number of chocolate candies remaining in the cup. The total number of chocolate candies consumed served as a proxy for the dependent variable of interest, wherein a higher number of candies consumed indicated indulging. To rule out a possible alternative explanation that curiosity increased reward enjoyment rather than reward desire, participants’ level of reward enjoyment was measured immediately after they had consumed the chocolate candies using a five-item, seven-point Likert-type scale (1—very bad; 7—very good / 1—not at all enjoyable; 7—very enjoyable / 1—did not like at all; 7—liked a whole lot; 1—not at all tasty; 7—very tasty / 1—not

at all satisfying; 7—very satisfying). These five items were averaged to form a reward enjoyment index (Cronbach's $\alpha = .97$).

Fourth, in an ostensibly separate study, participants completed the entire six-item resisting temptations subscale that was described in Study 3 (Job et al. 2010). Participants rated their agreement with each statement (three of which were reverse coded) on a seven-point Likert-type scale (1—strongly disagree; 7—strongly agree). The items were averaged to form an implicit theory index (Cronbach's $\alpha = .61$), with higher scores representing a limited resource orientation.

Results

Manipulation Check. The manipulation of curiosity was successful. As expected, participants in the high curiosity condition reported being more curious post-task ($M_{High} = 4.63$, $SD = 1.63$) than did participants in the low curiosity condition ($M_{Low} = 4.09$, $SD = 1.55$), $t(139) = 2.02$, $p < .05$, Cohen's $d = .34$. When curiosity levels were compared over time, results revealed that participants in the high curiosity condition exhibited a significant increase in curiosity from pre-task to post-task measurements ($M_{Pre} = 4.10$, $SD = 1.42$; $M_{Post} = 4.63$, $SD = 1.63$; $t(69) = 2.89$, $p < .01$, Cohen's $d = .35$), while participants in the low curiosity condition showed no change in their level of curiosity ($M_{Pre} = 4.38$, $SD = 1.50$; $M_{Post} = 4.09$, $SD = 1.54$; $t(69) = -1.35$, NS). A repeated-measures analysis of variance with condition as a between-subjects independent variable, time as a within-subjects independent variable, and self-reported curiosity as the dependent variable confirmed that the effect of the interaction between condition and time on self-reported curiosity was significant, $F(1, 138) = 8.48$, $p < .01$, effect size $r = .24$.

Effect of the Manipulation on Other Affective States. There were no significant differences in alertness ($M_{High} = 4.13$; $M_{Low} = 4.04$; $t(138) = .34$, NS), attentiveness ($M_{High} = 4.36$; $M_{Low} = 4.37$; $t(138) = -.06$, NS), happiness ($M_{High} = 4.07$; $M_{Low} = 4.09$; $t(138) = -.07$, NS), sadness ($M_{High} = 2.17$; $M_{Low} = 2.34$; $t(138) = -.76$, NS), or anxiety ($M_{High} = 2.71$; $M_{Low} = 2.83$; $t(138) = -.41$, NS) between the two curiosity conditions, suggesting that the manipulation did not affect other affective states.

Effect of Curiosity on Indulgent Consumption. Results were consistent with those of Studies 1 through 3. Participants in the high curiosity condition consumed more chocolates ($M_{High} = 5.84$, $SD = 3.83$) than did participants in the low curiosity condition ($M_{Low} = 4.60$, $SD = 3.68$), $t(138) = 1.96$, $p < .05$, Cohen's $d = .33$). This finding provides convergent evidence that curiosity increases indulgent consumption.

Mediation Effect of Desire for Rewards. Mediation was again tested using both the classic approach (Baron and Kenny 1986) and the PROCESS approach (Hayes 2013). Linear regression analyses showed that curiosity was a significant predictor of the number of chocolate candies consumed ($B = 1.24$, $SE = .63$, $t = 1.96$, $p < .05$) and of the measure of desire for rewards ($B = .48$, $SE = .23$, $t = 2.12$, $p < .05$). Furthermore, desire for rewards significantly predicted the number of chocolate candies consumed ($B = 1.59$, $SE = .20$, $t = 8.11$, $p < .001$). However, when desire for rewards was entered into the model simultaneously with curiosity, only the desire for rewards remained a significant predictor of the number of chocolate candies consumed ($B = 1.56$, $SE = .20$, $t = 7.81$, $p < .001$), whereas curiosity was a nonsignificant predictor ($B = .50$, $SE = .54$, $t = .92$, NS). A Sobel test further confirmed that the desire for rewards mediated the effect of curiosity on indulgent consumption (Sobel's $z = 2.01$, $p < .05$).

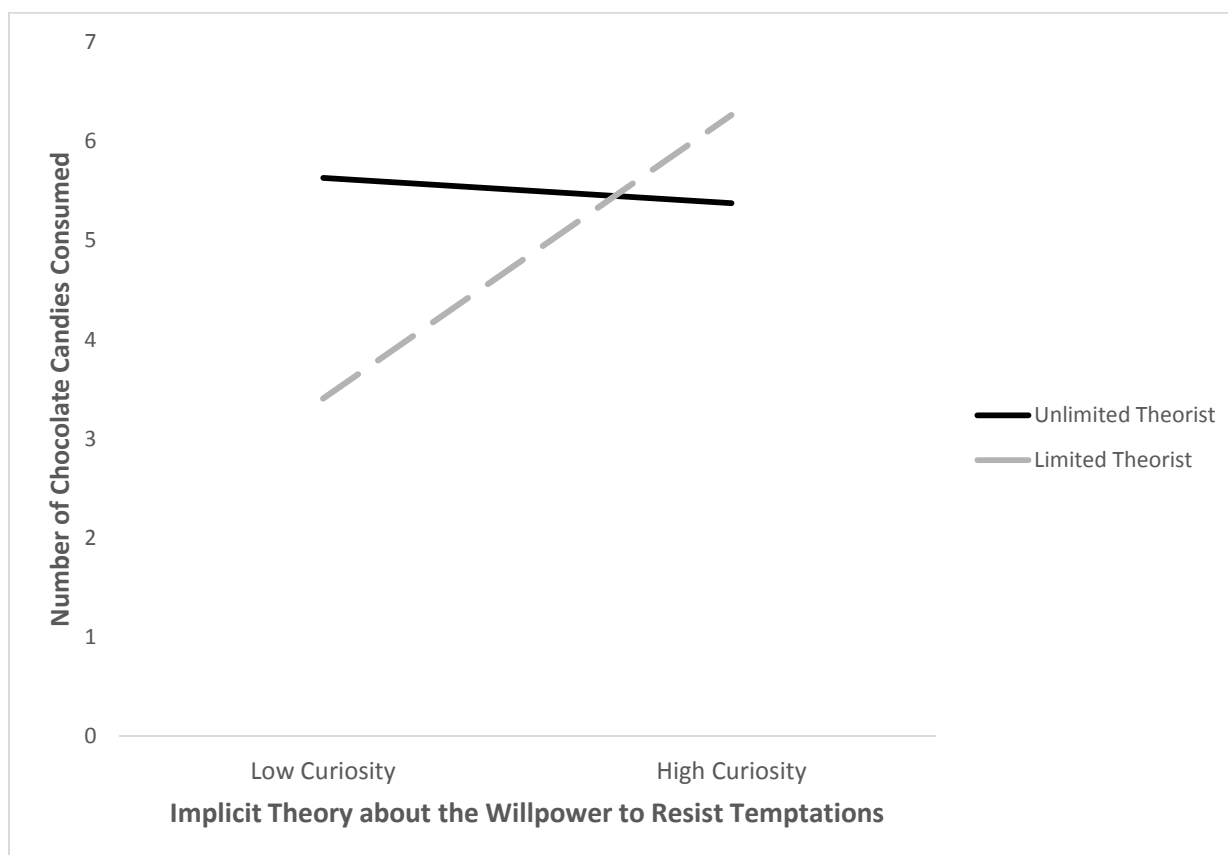
Next, using the PROCESS macro (Hayes 2013), the data were subjected to a simple mediation analysis (model 4) with 1,000 bootstrapped samples. Consistent with the previous findings, desire for rewards mediated the effect of curiosity on indulgent consumption in terms of the number of chocolate candies consumed (the estimated coefficient of the indirect effect was .51 with a 95% confidence interval [CI] exclusive of 0 [.08, .97]).

Mediation Effect of Reward Enjoyment. Curiosity had no significant effect on the enjoyment of the chocolate candies ($M_{High} = 4.89$, $SD = 1.30$; $M_{Low} = 4.63$, $SD = 1.46$; $t(138) = 1.12$, NS), thus ruling out the possibility that curiosity increases reward enjoyment.

Moderation Effect of Implicit Theories. To test whether implicit theories moderate the effect of curiosity on indulgent consumption, the data were subjected to a multiple regression analysis with the number of chocolate candies consumed as the dependent measure as well as curiosity, implicit theory (mean centered; measured as a continuous variable), and their interaction term as predictors. Results confirmed the predicted simple effect of curiosity on indulgent consumption ($B = 1.26$, $SE = .82$, $t = 2.02$, $p < .05$). There was also a simple effect of implicit theory ($B = -1.09$, $SE = .47$, $t = 2.31$, $p < .05$), suggesting that endorsing a belief that the willpower to resist temptations is an unlimited resource decreased indulgent consumption. These effects were qualified by a curiosity \times implicit theory interaction effect on indulgent consumption ($B = 1.76$, $SE = .63$, $t = 2.80$, $p < .01$). To facilitate the interpretation of this interaction, spotlight analyses were performed at 1 SD above and at 1 SD below the mean implicit theory score (Aiken and West 1991; Fitzsimons 2008). Simple slope analyses revealed that at 1 SD above the mean implicit theory score, participants who endorsed a limited theory about the willpower to resist temptations consumed more chocolates when their curiosity level was high as opposed to when it was low ($B = 3.01$, $SE = .89$, $t = 3.40$, $p < .001$). In contrast, at 1

SD below the mean implicit theory score, participants who endorsed an unlimited theory about the willpower to resist temptations showed no difference in consumption regardless of whether their curiosity was high or low ($B = -.50$, $SE = .88$, $t = -.57$, NS). Thus, it appears that only those who believe that the willpower to resist temptations is a limited resource become more susceptible to temptations as their level of curiosity increases. Figure 5 illustrates this finding.

Figure 5: Study 4: Interaction Effect of Curiosity and Implicit Theory about the Willpower to Resist Temptations on the Number of Chocolate Candies Consumed



Moderated-Mediation Effect of Implicit Theories. The next set of analyses tested whether curiosity and implicit theories jointly impact indulgent consumption through the desire for

rewards, using the procedures outlined by Muller et al. (2005) for moderated-mediation. Results of this analysis indicated that the desire for rewards was predicted by the curiosity \times implicit theory interaction term ($B = .68, SE = .22, t = 3.05, p < .01$) and that desire for rewards increased the amount of chocolate candies consumed ($B = 1.59, SE = .20, t = 8.11, p < .001$). However, when the number of chocolate candies consumed was regressed on the curiosity \times implicit theory interaction term and the desire for rewards, only the desire for rewards remained a significant predictor ($B = 1.52, SE = .21, t = 7.37, p < .001$), while the curiosity \times implicit theory interaction term was a nonsignificant predictor ($B = .73, SE = .55, t = 1.31, NS$).

To confirm this finding, I used the PROCESS macro (Hayes 2013) and subjected the data to a moderated-mediation analysis (model 8) with 1,000 bootstrapped samples. For limited theorists, the indirect effect of curiosity on indulgent consumption through the desire for rewards was significant (the estimated coefficient of the indirect effect was .67 with a 95% confidence interval [CI] exclusive of 0 [.14, 1.41]), indicating successful mediation through this path. However, the indirect effect of curiosity on the indulgent consumption through the desire for rewards was not significant for unlimited theorists (the estimated coefficient of the indirect effect was .30 with a 95% confidence interval [CI] including 0 [-.15, .87]). Together, these results show that the effect of curiosity on chocolate consumption was moderated by differences in consumers' implicit beliefs and was mediated by the desire for rewards for limited theorists, but not for unlimited theorists.

Discussion

The main conclusion from Study 4 is that reward enjoyment should be ruled out as alternative explanation for the effect of curiosity on indulgent consumption. While more curious

consumers did demonstrate greater desire for the offered reward (as compared to less curious consumers), they did not express differences in reward enjoyment. This finding is interesting, as it shows that curiosity motivates the desire to acquire a reward but does not necessarily enhance the attitude towards such a reward. In addition to this finding, Study 4 also replicates both the effect of curiosity on indulgent consumption (Studies 1-2) and the moderated-mediation relationship involving curiosity and implicit theories found in Study 3.

GENERAL DISCUSSION

This research contributes to our understanding of curiosity and how it influences indulgent consumption. Across four studies, this research provides evidence that a feeling of curiosity serves as an impetus for giving in to indulgent temptations by creating a desire for rewards that are unrelated to the object that one is curious about. Importantly, this effect was found only for those already sensitive to rewards (high BAS) and did not hold when reward sensitivity was low. Additionally, this research demonstrates how beliefs about whether the willpower to resist temptations is a limited or unlimited resource help to determine who will indulge when in a curious mindset and who will be able to resist temptations even when their curiosity has increased their desire for the reward of that temptation.

Theoretical Contribution and Managerial Implications

This research advances the understanding of curiosity as a state of knowledge deprivation and its incidental effects on consumption behavior. Previous research has primarily focused on the pleasurable experience of curiosity and demonstrated its integral role in fostering a desire for knowledge that spurs information search and exploratory behaviors (e.g., Berlyne 1966; Litman et al. 2005; Menon and Soman 2002; Noseworthy et al. 2014). The current findings demonstrate

that the experience of curiosity not only affects the desire for the reward of information directly related to the object of curiosity but also can produce a generalized desire for unrelated rewards. While previous neuroimaging research found initial evidence of a correlation between curiosity and dopaminergic regions in the brain that have long been associated with reward (Jepma et al. 2012; Min Jeong et al. 2009), this research is the first to pinpoint the psychological process of desire for rewards as an underlying mechanism of curiosity, as well as to demonstrate the behavioral consequences of this mechanism.

Second, the present research further expands on prior findings by showing that curiosity in and of itself can have negative consequences such as increasing indulgent consumption. This finding is interesting as curiosity is most often considered to be a positive state. In a study not included with the four studies discussed herein, 34 undergraduate students were asked to rate their perceptions of curiosity on dimensions of both valence (1—negative; 9—positive) and arousal (1—no arousal; 9—high arousal). Overall, participants assessed curiosity as a positive and arousing state ($M_{Valance} = 6.74$, $SD = 1.26$; $M_{Arousal} = 6.70$; $SD = 1.70$). By highlighting this “dark side” of what is generally considered to be a positive state, these findings contribute to research on negative consumption behaviors. This research shows that overly curious consumers may be more likely to engage in over-consumption (e.g., choosing calorie-rich foods) and over-spending (e.g., paying for luxury vacations). This insight may have far-reaching implications for research on consumer behavior and public policy. As today’s consumers are bombarded with a litany of advertising and packaging stimuli that may spur their curiosity, they are also exposed to tempting foods that are high in calories. From an evolutionary perspective, because curiosity may have originated in our hunter-gatherer ancestral past (Berlyne 1954, 1966), the combination

of marketing and consumer tendencies may explain why so many consumers today are overweight or in debt.

A third contribution of this research relates to the integration of implicit theories about the willpower to resist temptations. This work, together with other recent empirical research, clearly points to the importance of examining consumer differences in beliefs regarding whether willpower is a limited or unlimited resource. Previous work in this area suggests that limited theorists are more likely to experience depletion and, therefore, perform worse on mental self-control tasks, whereas unlimited theorists show no evidence of depletion (Job et al. 2010; Vohs et al. 2012). The present research extends these findings by identifying an underlying mechanism that may explain why limited theorists perform worse on self-control tasks that involve an indulgent temptation. Indulgent consumption was shown to be due to a greater desire for rewards amongst limited theorists (Studies 3 and 4). In contrast, consumers who endorsed an unlimited belief about the willpower to resist temptations appear to be able to suppress such desires, as shown by the finding that unlimited theorists showed no change in their desire for a temptation even when factors such as being curious may have increased such desire.

Fourth, in comparing Studies 2 and 4, it appears that limited theorists behave similarly to consumers with a greater sensitivity to rewards (i.e., high BAS consumers). This meta-analytic finding across two of the four studies is conceptually interesting, as the research on implicit theory about willpower (Job et al. 2010; Mukhopadhyay and Johar 2005; Vohs et al. 2012) has not previously been connected with research on BAS (Carver and White 1994). This research implies that limited theorists and high BAS consumers may share similar underlying motivational systems, in that curiosity shifts attention towards signs of possible reward and gratification for both types of consumers.

Fifth, this research also speaks to prior work that has distinguished between wanting (reward desire) and liking (reward enjoyment). While this distinction has received much attention in both general psychology and the neurosciences (e.g., see Berridge et al. 2009 for a review), it is relatively new to consumer research. This research shows that the concept of liking is not the driving force in the present context but that the concept of wanting is (which is referred to as desire for rewards). As such, the present investigation introduces a novel distinction to the study of consumer research, which has long focused on attitudes (e.g., liking) but could potentially benefit from an investigation of the co-occurrence of both liking and wanting.

Finally, this research has important managerial implications because marketing managers have long recognized the benefits of curiosity in increasing the amount of attention paid to a product advertisement (Menon and Soman 2002) and in generating product interest (Menon and Soman 2002; Steenkamp and Baumgartner 1992). As such, marketing managers oftentimes withhold a certain amount of information with the hopes that doing so will increase consumers' desire for the product. Although this dissertation shows that it may be true that eliciting curiosity will increase the desire for a product, it also shows that by withholding information, managers may spur behaviors that may have potentially negative consequences. If consumers are unable to obtain the desired knowledge, their unsatisfied curiosity may instigate undesirable behaviors such as impulse buying and unhealthy eating. However, this dissertation also provides a mechanism through which marketing managers can increase curiosity without increasing indulgent consumption. Specifically, managers may wish to simultaneously induce an unlimited theorist mindset that leads consumers to believe that people have the willpower to resist temptations and that such resistance is always a viable option.

Limitations and Directions for Future Research

One limitation of this research stems from the challenge of arousing low levels of curiosity. The novelty of the lab setting and the uncertainty surrounding the objectives of a research study may in and of themselves generate curiosity. However, given that these findings were replicated across studies featuring multiple settings and measures, there is little reason to believe that I was unable to successfully arouse states of both high and low curiosity.

This research also provides a foundation for exploring the incidental effects of curiosity on indulgent consumption and consumer behavior. Although the findings of this research suggest that curiosity influences consumers' preferences for short-sighted rewards, other research suggests that curiosity may motivate the pursuit of long-term goals (Maner and Gerend 2007). These paradoxical findings suggest that curiosity may facilitate goal pursuit when a future goal offers a superior reward. Future studies may wish to explore how the effects of curiosity on indulgent consumption are influenced by differences in short-term and long-term rewards.

While the focus of this research was on Loewenstein's (1994) definition of curiosity as a feeling of knowledge deprivation, curiosity may also manifest as a pleasurable experience of interest (Kashdan et al. 2004; Litman 2005). Although both forms of curiosity—that is, interest and deprivation—arise in response to a knowledge gap, they differ in that curiosity as a feeling of interest creates a “wanting” of information, whereas curiosity as a feeling of deprivation manifests as an intense “need” for information (Litman 2005). The current research does not distinguish between these two different forms of curiosity. Future research should examine whether curiosity as a feeling of interest and curiosity as a feeling of deprivation differ in their effects on consumer decision-making and indulgent consumption. In other words, in the absence of a feeling of deprivation, will curiosity still incite a need to indulge?

Finally, while a significant amount of consumer research has been devoted to the influences of trait self-control and trait-impulsivity on indulgent consumption, this research examines the related constructs of the behavioral activation system and implicit beliefs. Future research should continue to explore how other consumer difference variables facilitate or hinder indulgent consumption. For example, extraverts have been shown to have an enhanced desire for rewards (Nichols and Newman 1986), but little is known about how extraversion affects consumer behavior and indulgent consumption. Future research that continues to identify and investigate consumer differences that influence indulgent consumption would provide for a richer understanding of indulgent consumption.

In conclusion, this research provides important implications for consumer behavior by shedding new light on the relatively elusive construct of curiosity. These findings contribute theoretically to multiple streams of research and integrate curiosity into these findings. It is the hope that this will be among the first of many empirical studies that explore the effects of curiosity on consumer behavior.

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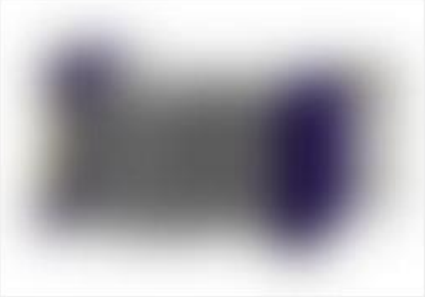
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APPENDIX A

CURIOSITY MANIPULATION USING BLURRY IMAGES FOR STUDIES 1 AND 4

High Curiosity Condition

What is your guess?


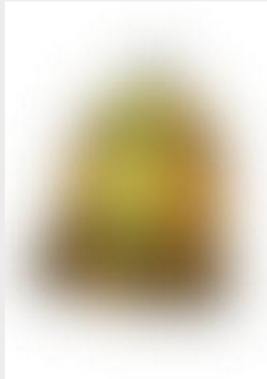
How curious are you to find out the answer?

Not curious all 2 3 4 5 6 Very Curious

How confident are in your guess?

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Low Curiosity Condition






What is your guess?

How confident are in your guess?

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

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APPENDIX B

DESIRE FOR REWARDS SCALE USED IN STUDY 1

Please rate your agreement with each of the following statements regarding the movie you selected.

- Strongly Disagree
- 2
- 3
- Neither Agree nor Disagree
- 5
- 6
- Strongly Agree

1. I have a desire to watch this movie right now
2. Nothing would be better than watching this movie right now
3. If it were possible I would probably watch this movie now
4. All I want right now is to watch this movie
5. I have an urge to watch this movie
6. Watching this movie would be good now
7. I would do almost anything in order to watch this movie now
8. Watching this movie would make me happy
9. I am going to watch this movie as soon as possible
10. I could control things better right now if I could watch this movie

APPENDIX C**CURIOSITY WRITING INDUCTION TASK FOR STUDY 3**

High Curiosity Condition:

Please read the following description of curiosity carefully before answering the next two questions.

Curiosity is often described as an unpleasant feeling of not knowing that is accompanied by a strong desire to find out the missing information.

What are 3–5 things that made you feel the most curious AND that you are still curious about because you still do not know the answer?

Please write two-three sentences about each thing that made you the most curious.

Now we'd like you to take a few minutes to think about each instance of curiosity that you described and determine the one that made you the most curious and that you would still like to find out more about.

Thinking about that one instance, please begin by writing down what you remember about the curiosity-inducing situation, and continue by writing as detailed a description of the situation(s) as is possible. If you can, please write your description so that someone reading this might experience the same curiosity you feel just from reading about the situation. What was it like to be in this situation? Why did it make you so curious?

Low Curiosity Condition:

Please read the following description of curiosity carefully before answering the next two questions.

Curiosity is often described as an unpleasant feeling of not knowing that is accompanied by a strong desire to find out the missing information.

What are 3–5 things that made you the most curious about BUT that you are no longer curious about it because you were able to find out the answer?

Please write two-three sentences about each thing that made you the most curious.

Now we'd like you to take a few minutes to think about each instance of curiosity that you described and determine the one that made you the most curious but are no longer curious about because you found out the answer.

Thinking about that one instance, please begin by writing down what you remember about the situation and what it was like to resolve that curiosity, and continue by writing as detailed a description of the situation(s) as is possible. If you can, please write your description so that someone reading this might experience the same feelings that you felt just from reading about the situation. What was it like to be in this situation? How does it feel now that you are no longer curious?

APPENDIX D

IMPLICIT THEORY ABOUT THE WILLPOWER TO RESIST TEMPTATIONS SCALE FOR
STUDIES 3 AND 4

For this next set of questions, please rate your agreement with each of the following statements.

Strongly Disagree

2

3

Neither Agree nor Disagree

5

6

Strongly Agree

1. Resisting temptations makes you feel more vulnerable to the next temptations that come along
2. When situations accumulate that challenge you with temptations, it gets more and more difficult to resist the temptations
3. If you have just resisted a strong temptation, you feel strengthened and you can withstand any new temptations (r)
4. It is particularly difficult to resist a temptation after resisting another temptation right before
5. Resisting temptations activates your willpower and you become even better able to face new upcoming temptations (r)
6. Your capacity to resist temptations is not limited. Even after you have resisted a strong temptation you can control yourself right afterwards (r)