What Satisfies a Curious Mind? Curiosity Prompts Novel Reward Seeking

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This research investigates the effect of curiosity on consumers’ reward-seeking behavior. We find that curiosity motivates people to seek novel rewards in unrelated domains. This occurs as a result of an open mindset and a general appetitive state, both activated by curiosity. Further, information threat moderates such reward-seeking effect.

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I’m Just Curious: Exploring the Drivers and Consequences of Curiosity

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Paper #2: Does Curiosity Kill the Cat? Incidental Curiosity Can Have Negative Consequences
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Paper #4: Guess Where I’m From: Ambiguous Accents, Curiosity and Product Evaluations
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SESSION OVERVIEW
Consumers are curious creatures, and marketers are keen to use curiosity to whet consumer appetites—a fact evidenced by movie teaser trailers, ‘find-out-how’ headlines, and mystery ads. Despite the prevalence of curiosity-evoking stimuli in daily life, little is known about either the causes or the consequences of curiosity (Loewenstein 1994; Menon and Soman 2002). This session takes steps to address both these concerns, demonstrating that, across a variety of contexts, curiosity has the power to impact consumer evaluations, preferences, and behavior.

The first two papers highlight the varied consequences of curiosity on consumer behavior. The first paper, by Wang and Zhu, examines the impact of elicited curiosity on subsequent unrelated consumer choice. They demonstrate that curiosity, once evoked, serves to motivate novel reward seeking in a later choice. The second paper, by Isikman, Ülkümen, MacInnis, and Cavanaugh, instead examines the effect of curiosity on concurrent consumer evaluations. They find that curiosity can be a fickle friend, with the power to act as a distracting force that can increase or reduce enjoyment of a simultaneous consumption experience. Taken together, these papers demonstrate that the impact of consumer curiosity is wide-ranging, affecting both simultaneous and sequential consumer behavior.

While the first two papers highlight the importance of examining consumer curiosity, the second two papers explore how marketers can effectively elicit curiosity in order to leverage these effects. These papers address the paucity of research examining the situational determinants of consumer curiosity (Menon and Soman 2002). Sevilla, Meyer, and Zhao demonstrate that visual concealment arouses curiosity, resulting in improved consumer preferences. In the final paper, Ince, Thompson, and Rabino show that, holding the amount of information provided to consumers constant, curiosity can be elicited by a feature inherent to the business context itself: a speaker’s accent. They find that ambiguous accents increase consumers’ interest in trying new products and services.

Interestingly, these two final papers both explore the moderating role of dispositional curiosity. These investigations yielded contrasting results; the effect of visual concealment was highest for those who are naturally curious (measured by the need for cognitive closure scale), while accent-elicited curiosity was lowest for the naturally curious (measured by the curiosity exploration inventory scale). These contradicting findings support the contention that curiosity is a multidimensional construct, comprised of both a motivated drive to close informational gaps as well as interest in exploring novel and surprising stimuli (Litman 2005). We believe that this is a rich topic for discussion and fertile ground for future research.

Overall, the four papers in this session shed light on the drivers and consequences of curiosity, while revealing promising avenues for future research. We expect that this research will be of interest to researchers in areas as diverse as motivation, information processing, aesthetics, and linguistics, elucidating a construct largely overlooked in the consumer behavior literature and at ACR conferences in particular.

What Satisfies A Curious Mind? Curiosity Prompts Novel Reward Seeking

EXTENDED ABSTRACT
Curiosity is defined as “a form of cognitively induced deprivation that arises from the perception of a gap in knowledge or understanding” (Loewenstein 1994). Despite its ubiquity, curiosity has received surprisingly little attention in consumer behavior research (Menon and Soman 2002). Limited research on state curiosity mostly studies its impact on people’s search for domain-specific information that closes the knowledge gap (van Dijk and Zeelenberg 2007). However, as curiosity is also an appetitive state that possesses driving forces (Blumenberg 1983; Loewenstein 1994), it is possible that curiosity could motivate reward-seeking behaviors other than information seeking.

Existing behavioral and neuroscience research on reward-seeking behaviors found that intangible cognitive and social rewards and tangible physical rewards are processed similarly in the brain. Further, this shared brain network leads to a spillover reward-seeking effect (Berridge and Kringelbach 2008; Lieberman and Eisenberger 2009). That is, deprivation in one domain motivates individuals to seek rewards in unrelated domains (Berger and Shiv 2011; Briers et al. 2006). Although these findings are intriguing, previous studies have focused on deprivation and satiation in the lower physical domain. We know little about the spillover effect in the higher cognitive or social domains.

This research investigates the impact of curiosity, a cognitive deprivation, on consumers’ subsequent reward-seeking behaviors. We find that curiosity motivates people to seek rewards, particularly novel rewards, in other unrelated domains, such as physical domains (e.g., food) and social domains (e.g., social friendship, charitable donation). This effect occurs as a result of a general appetite drive and an open mindset, both activated by curiosity. We further identify a boundary condition; when people are curious about threatening information, the spillover reward-seeking tendency is mitigated.

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Study 1 tested that curiosity prompts novel reward seeking in an unrelated domain. We used a one-factor design (curious vs. incurious) and food rewards. Passengers waiting at a subway station were asked to guess what an unbranded advertisement was about. To manipulate curiosity, explanations of the advertisement were either provided (incurious condition) or not provided (curious condition). Those in the control condition were not given this task. Next, all participants were asked to choose between a familiar snack and a novel snack, which was the dependent measure. As predicted, curious participants were more likely to choose the novel food over the familiar food, compared to either incurious participants or participants in the control condition. No difference occurred between the latter two conditions.

Study 2 demonstrated that curiosity elicits an open mindset, which subsequently leads to a novel choice. We used a 2 curiosity (curious vs. incurious) x 3 word type (open-minded vs. neutral vs. non-word) mixed design. Participants first watched a two-part video. To manipulate curiosity, those in the curious condition watched only the first part without knowing the story ending, whereas those in the incurring condition watched both parts. Next, we measured participants’ semantic activation of open-mindedness through reaction times in a lexical decision task. Participants were asked to identify letter strings, including open-minded related words, neutral words, and non-words, as a word or a non-word. They then chose between a novel snack and a familiar snack, which was the dependent measure. As expected, curious participants were more likely to choose the novel food over the familiar food, compared to incurring participants. Further, we found a significant two-way interaction such that curious participants responded to the open-minded words faster than incurring participants, whereas no such difference occurred for the neutral words or the non-words. More importantly, the semantic activation of open-mindedness mediated the effect of curiosity on the food choice.

Study 3 aimed to demonstrate the general appetitive mechanism. If curiosity indeed possesses a general appetitive drive, when this appetitive drive is satiated by a reward beforehand, the subsequent spillover reward-seeking tendency should diminish. This study also extended the reward to the social domain (i.e., friendship). We used a 3 satiation (none vs. information vs. food) x 2 reward (familiar vs. novel) between-subjects design. Satiation was manipulated using the same two-part video, except that those in the food satiation condition watched only the first part and were then given a chocolate bar (Berger and Shiv 2011). Next, we measured participants’ interest in seeking friendship either at their own university (familiar condition) or at another local university (novel condition). As expected, we found a significant two-way interaction such that those with no-satiation (i.e., curious participants) were more interested in seeking novel than familiar friendship, whereas those with information satiation (i.e., incurring participants) and those with food satiation showed equal interest in novel and familiar friendship.

Study 4 identified a boundary condition for the effect. When people are curious about potentially threatening information, they might refrain from approaching behavior and engage in an avoidance orientation (Sweeney et al. 2010), which subsequently leads to a reduced reward-seeking tendency. This study also adopted another social reward, namely, charitable donation. We used a 3 information (threatening vs. non-threatening vs. control) x 2 charity (familiar vs. novel) mixed design. Participants were asked to complete a health survey, which was framed either as estimating heart disease risk (threatening condition) or as providing a personalized plan to reduce heart disease risk (non-threatening condition). To induce curiosity, participants were told that the survey results could not be provided right away. Participants in the control condition were not given this task. Next, all participants were asked to indicate their willingness to donate to a familiar charity and a novel charity. As anticipated, we found a main effect such that those curious about non-threatening (threatening) information were more (less) likely to donate than those in the control condition. Further, we found a significant two-way interaction such that those in the non-threatening condition were more likely to donate to the novel than the familiar charity, whereas those in the threatening or control condition showed comparable willingness to donate to both charities.

This research contributes to both the curiosity and the reward-seeking literature by investigating whether, how, and why curiosity, a cognitive deprivation, motivates spillover reward seeking in the social or physical domains.

**Does Curiosity Kill the Cat? Incidental Curiosity Can Have Negative Consequences**

**EXTENDED ABSTRACT**

Marketers aim to maximize enjoyment of a consumption experience since enjoyment predicts favorable outcomes like repeat purchase and positive word of mouth (e.g., Rust and Oliver 2000). Yet, consumers are often exposed to things that arouse their curiosity during consumption experiences, such as a ringing cell phone, an email notification, or a pop-up on a website. Despite the prevalence of such curiosity-evoking events, we know little about how they might impact enjoyment of a coincident consumption experience.

Prior consumer research on curiosity has focused on curiosity evoked by events that are integral to a focal experience. We examine how curiosity-evoking events that are unrelated to, yet coincident with, a focal consumption experience impact consumption enjoyment. We define curiosity as a state of interest caused by knowledge deprivation (Loewenstein 1994) and desire to resolve uncertainty.

There are multiple potential routes through which curiosity aroused by an incidental task might influence enjoyment. First, the state of interest evoked by curiosity may be inherently pleasurable, and may carry over to the consumption experience and increase its enjoyment. Alternatively, the knowledge deprivation and uncertainty involved in curiosity may be experienced as unpleasant, which could carry over to the experience and reduce its enjoyment.

However, we predict that curiosity impacts enjoyment because it motivates an impulsive search for resolution, directing attention towards the curiosity-evoking event, and sustaining it until the curiosity is resolved. When the source of curiosity is incidental (versus integral) to the consumption experience, this search for resolution becomes distracting, directing attention away from the experience and inhibiting consumers from absorbing the experiential aspects of consumption. Accordingly, we expect curiosity evoked by coincident events to decrease enjoyment of positive consumption experiences, but to increase enjoyment of negative consumption experiences.

Three experiments provide evidence consistent with these predictions, employing different manipulations of curiosity and using self-reported, indirectly assessed and behavioral measures of attention. We demonstrate that the effect of curiosity is robust across stimulating, relaxing, and cognitively engaging experiences.

In study 1, forty-six participants were recruited ostensibly to product-test a video game. They were randomly assigned to one of the two conditions (high or low curiosity). In the high curiosity condition, the experimenter covertly called the participants on their cell phones during the game. The call evoked curiosity because they were unable to check their phones as they had been instructed to leave their phones on a table which was located close by, but out of reach. In
the low curiosity condition, the experimenter remotely activated an iPod, which played a short excerpt from a song. The location of the devices, duration and the timing of the sounds were matched across conditions. We unobtrusively video-recorded the participants, and coded for the number of times they looked towards their phones or the iPod as a behavioral measure of attention diversion. Participants reported enjoying the video game less in the high curiosity compared to the low curiosity condition ($M_{high} = 6.81$ vs. $M_{low} = 7.62$, $F(1, 44) = 4.19$, $p < .05$). Importantly, a mediation analysis showed that curiosity caused by the incidental event reduced enjoyment because it diverted attention away from the positive consumption experience.

If curiosity reduces consumption enjoyment because it draws attention away from the focal experience, then we would expect this effect to manifest when curiosity is sustained for an extended amount of time, but to disappear when it is resolved promptly. We test this prediction in Study 2. 78 university students were randomly assigned to one of two between-subjects conditions: curiosity-sustained vs. curiosity-resolved. The consumption experience was reading a commencement speech. Midway through the reading, the participants were instructed to pull out a gift box from a bag adjacent to their computer. They were told to keep the gift box in front of them but to not open it until the end of the study. In the curiosity-sustained condition, the gift box was opaque, which did not allow the participants to see its contents. In the curiosity resolved condition, the gift box was transparent, which allowed the participants to see that it contained a pen. After the reading task, participants indicated their reading enjoyment, and responded to questions about rumination and attentional conflict. Results showed that sustained (versus resolved) curiosity reduced consumption enjoyment ($M_{sustained} = 7.34$ vs. $M_{resolved} = 7.97$, $F(1, 76) = 4.09$, $p < .05$). Moreover, the negative effect of sustained curiosity on enjoyment was mediated by rumination and attentional conflict.

Study 3 aims to test the impact of curiosity-evoking events on enjoyment of negative experiences. 105 participants took part in this study with a 2 valence (positive vs. negative) X 2 curiosity (sustained vs. resolved) between-subjects design. The consumption experience involved watching a YouTube video of a song. In the positive valence condition, we used the professionally recorded video clip of the song. In the negative valence condition, we used a non-professional recording of a live performance of the same song, performed by the same artist, which had bad sound and picture quality. The same gift manipulation in Study 2 was used to manipulate curiosity. After viewing the clip, participants indicated their enjoyment of it. Results showed that compared to resolved curiosity, sustained curiosity reduces enjoyment of a positive experience ($M_{sustained} = 5.46$ vs. $M_{resolved} = 6.82$, $F(1, 53) = 6.37$, $p < .05$), but increases enjoyment of a negative experience ($M_{sustained} = 5.81$ vs. $M_{resolved} = 4.51$, $F(1, 48) = 5.00$, $p < .05$).

Unlike past research, we focus on how curiosity from a coincident event influences enjoyment of a main consumption experience. We show that curiosity evoked by an incidental event can either increase or decrease enjoyment, depending on the valence of the consumption experience. This research adds to our theoretical understanding of attention’s role behind curiosity. Our findings contribute to the literature by revealing a more complete picture of the link between curiosity-evoking events and consumption enjoyment. Practically, our findings suggest that it is possible to strategically promote or prevent curiosity during consumption to enhance consumers’ enjoyment.

Leaving Something for the Imagination: The Effect of Visual Concealment on Product Preference

EXTENDED ABSTRACT

Marketers resort to different tactics in order to attract consumer interest. One of the most popular is the “peak-a-boo” ploy, which consists of deliberately withholding from view some of the key aspects or attributes of a product. The idea underneath this practice is that consumer curiosity would be sparked when faced with an undetermined novel stimulus, something which would increase interest and search of information about the product (Menon and Somani 2002). Consistent with past literature in marketing, this search and acquisition of new information will have positive results, as consumers suffer from a phenomenon called “uncertainty aversion”, which consists on heavily discounting products for which only limited information is available. This effect causes known, average options to be preferred over those with missing attribute values (e.g., Meyer 1981; Huber and McCann 1982; Johnson and Levin 1985; Jaccard and Wood 1988; Simmons and Lynch 1991; Sanbonmatsu et al., 1992).

In this research, we demonstrate that, in the case of aesthetic stimuli, the mere unavailability or concealment of key aspects or fragments may lead to higher preference. This effect will hold in cases where the attractiveness of the revealed and the concealed fragments is kept constant and where the search for new information is unavailable. We propose that this occurs because visual concealment can trigger two interrelated psychological forces that drive the effectiveness of a product fragment: a curiosity effect (see Loewenstein 1994) that draws consumers towards objects that are incompletely portrayed, and an inference effect that conditions the level of curiosity on projections about the likely value of the completed whole based on observed fragments. This indicates that consumer assessments of partially-concealed product images often—but not always—act as an inverted-U shaped function of the percentage of the object that has been revealed. Moreover, we demonstrate that the relationship between the size of a product fragment and consumer preference for the whole product is moderated by the valence of the whole stimulus, such that the inverted-U shaped relationship exists only when the whole product is positively as opposed to negatively evaluated.

We found support for our hypotheses across four laboratory experiments using different product stimuli and procedures. Experiment 1 tested the hypothesized inverted U-shape relationship between the degree of visual concealment and preference for a whole by using aesthetically driven marketing stimuli such as futuristic car images. This study showed that participants had a higher preference towards a moderate size visual revelation as opposed to a large one, which demonstrates that “more is not always better”. Experiment 2 demonstrated the generalizability of the results by replicating the findings using computer generated ideally attractive male and female human faces. Given that the first study employed a within-subjects design, Experiment 2 used a between-subjects setup to rule out alternative explanations for the results of the previous experiment such as boredom, satiation and demand effects. Moreover, this study further demonstrated the effect of curiosity in preference and choice by using varied dependent measures and ruled out an alternative explanation associated with differential attractiveness between the revealed and the concealed fragments, as, in this case, each piece was representative of a prototypical, attractive human face. This demonstrates that the level of concealment participants were exposed to in this study only affected the quantity of the visual information provided and not its attractiveness. Furthermore, this study provided media-
tion evidence in favor of evoked curiosity as the determinant of the observed enhanced preference. Experiment 3 employed attractive and unattractive human faces in a between-subject setting to demonstrate that the hypothesized inverted U-shape relationship between fragment size and preference will not exist in the case of unattractive stimuli. Finally, Experiment 4 duplicated the design employed in Experiment 1 to demonstrate that the effect is moderated by Need for Cognitive Closure (NFCC). Specifically, this study showed that participants who scored lower in this construct, and who tend to be less curious, were less sensitive to the effect, due to their lower tendency to experience curiosity.

A paradoxical consequence of our findings is that the products or visual images that benefit the most from concealment are those that have the least to hide; the more attractive the completed whole, the more it may pay to leave something for the consumer’s imagination. Moreover, lab results suggest the existence of an unexpected empirical regularity in the “ideal” level of revelation of an image: across a variety of stimulus domains, we find that curiosity in seeing more of objects is maximized when about one half to two-thirds of the object has been revealed—a percent large enough for the bulk of the object to be identified, yet small enough for uncertainty to still exist about the appearance of the completed image. This research informs marketers about the sensitive role that fragment size may play in consumer preference for aesthetic products in cases where these are partially revealed as part of a marketing campaign.

**Guess Where I’m From: Ambiguous Accents, Curiosity and Product Evaluations**

**EXTENDED ABSTRACT**

Though curiosity has been identified as an intense but transient motivational force, limited research has addressed the power of curiosity to engage consumers (Loewenstein 1994). In marketing contexts, previous research has demonstrated that curiosity results in stronger brand associations, greater learning of product information, and better product evaluations (Menon and Soman 2002). Despite these compelling examples, curiosity research is sparse. Little is known about the situational drivers of curiosity (Loewenstein 1994). We examine a potential new driver of curiosity: accented speech. Increasingly ubiquitous with the rise of globalization (Gluszek and Dovidio 2010), ambiguous accented speech (i.e., of indeterminate origin) may trigger consumers’ curiosity about the speaker, influencing product and service evaluations.

A large body of research has examined the impact of specific foreign or regional accents (Mai and Hoffman 2014). However, ambiguous accents, or accents providing insufficient cues of geographical background and defying adequate categorization (Budner 1962), remain unexplored. Upon hearing accents, consumers spontaneously seek to classify the speakers into ethnic, national, or religious groups (Mai and Hoffman 2014). However, despite this attempt at categorization, consumers are often unable to identify foreign accents (Lindemann 2003). We argue that ambiguous accents trigger curiosity, which extends to associated products and services, thereby increasing their perceived valuation.

In three studies, we examine the impact of ambiguous accents (direct and incidental) on consumer curiosity and product evaluations. We find that ambiguous accents significantly increase consumers’ interest in a target activity, agent, and product. Because curiosity is both situationally and dispositionally driven (Loewenstein 1994), we explore how individual differences such as ambiguity intolerance, ethnocentrism, and trait curiosity moderate the curiosity effects generated by ambiguous accents.

In study 1, we test the effect of an ambiguous accent on likelihood to attend a target event - a volcano exhibit - and examine the mediating role of curiosity. We also seek to rule out a disfluency account, which would predict that ambiguous accents are more unfamiliar and difficult to understand, increasing perceptions of the speaker’s uniqueness and competence (Pocheptsova, Labroo, and Dhar 2010; Thompson and Ince 2013). Participants (N=111) were randomly assigned to either an accent or no accent condition. The speaker was either an American woman or a Brazilian woman; a pretest confirmed that the Brazilian accent was ambiguous (65% of the participants could not identify the accent; when asked where the speaker was from, the mean variance was three times higher in the accent vs. no accent condition). Participants were told that they would listen to a one-minute audio clip describing a new volcano exhibit and that the speaker was the exhibit’s curator. Participants then reported their likelihood to attend the exhibit and their perceptions of both the speaker and the exhibit. As predicted, there was a significant main effect of accent on attendance likelihood. Those in the accent condition were more likely to attend the exhibit, and were more curious about both the speaker and the exhibit. Importantly, a sequential mediation analysis revealed that accent curiosity significantly mediated the effect of accent on exhibit curiosity, which in turn influenced the likelihood to attend the event. Accent familiarity as well as perceptions of speaker uniqueness and knowledge did not mediate the effect of accent on exhibit interest.

In study 2, we examine the effect of ambiguous accents on consumers’ evaluations of a service provider. We also replicate our results with different accents and male voices and explore ambiguity intolerance as a moderator. We predict that the curiosity effect derived from an ambiguous accent will be mitigated for individuals who are highly intolerant of ambiguity. Participants (N = 113) completed a one manipulated between-subjects factor (accent vs no accent). Participants were instructed that they had been tasked with finding someone to fix a broken lamp (a family heirloom) and that they would listen to an informational audio clip about lamp restoration services from a professional lamp restorer’s website. After listening to the audio clip, participants reported their willingness to pay for the service, then completed curiosity measures and a tolerance of ambiguity scale (Budner 1962). As predicted, there was a significant accent by ambiguity intolerance interaction, such that accented speech increased consumer willingness to pay, but only for those tolerant of ambiguity. A moderated mediation was also significant.

In study 3, we test the effect of ambiguous accent on willingness to try a novel product in an unrelated product choice. Recent research suggests that incidental exposure to curiosity increases likelihood of choosing a novel over a familiar reward (Wang and Zhu 2014). We replicate our results with another female accent and explore two additional boundary conditions: ethnocentrism and trait curiosity. Participants (N = 89) completed a 2 (accent vs. no accent) x 2 (novel flavor replicates: blueberry balsamic vs. ginger lavender) between subjects design. Participants were told to imagine they were at a party listening to other partygoers speak. They listened to a 30 second audio clip of a conversation in which a woman recommends a product and that the speaker was the exhibit’s curator. Participants would listen to a one-minute audio clip describing a new volcano exhibit and that the speaker was the exhibit’s curator. Participants then reported their likelihood to attend the exhibit and their perceptions of both the speaker and the exhibit. As predicted, there was a significant main effect of accent on attendance likelihood. Those in the accent condition were more likely to attend the exhibit, and were more curious about both the speaker and the exhibit. Importantly, a sequential mediation analysis revealed that accent curiosity significantly mediated the effect of accent on exhibit curiosity, which in turn influenced the likelihood to attend the event. Accent familiarity as well as perceptions of speaker uniqueness and knowledge did not mediate the effect of accent on exhibit interest.
Curiosity elicited by ambiguous accents is attenuated for both individuals who view their in-group (e.g., American) as superior as well as for naturally curious consumers who are chronically predisposed to select novel products. A moderated mediation of curiosity on interest in the novel flavor was also significant.

Taken together, these results provide evidence for a new driver of consumer curiosity which can be effectively used to increase consumers’ interest in seeking new products and services.

REFERENCES


