JULIO SEVILLA, JIAO ZHANG, and BARBARA E. KAHN*

Satiation frequently occurs from repeated consumption of the same items over time. However, results from five experiments show that when people anticipate consuming something different in the future, they satiate at a slower rate in the present. The authors find the effect in both food and nonfood consumption settings using different approaches to measure satiation. This effect is cognitive; specifically, anticipating variety in future consumption generates positive thoughts about that future experience. The authors find two boundary conditions: the future consumption outcome must be (1) in a related product category and (2) at least as attractive as the present consumption outcome. The authors rule out potential alternative explanations such as mere exposure to variety, the possibility that the future experience is more attractive (rather than just different) than the current one, and perceptions of scarcity associated with the item consumed in the present.

Keywords: satiation, variety seeking, consumption

Online Supplement: http://dx.doi.org/10.1509/jmr.14.0360

Anticipation of Future Variety Reduces Satiation from Current Experiences

Repeated consumption of an item may cause satiation and a resulting desire to consume something different just to maintain a constant level of enjoyment (Brickman and Campbell 1971). Prior research has identified several factors that influence the degree of satiation people experience. Some factors are predominantly physiological in nature, such as the quantity consumed (Mook and Votaw 1992; Rolls, Van Duijvenvoorde, and Rolls 1984), the rate of consumption (e.g., Nelson and Meyvis 2008), and the actual variety the experience contains (Ratner, Kahn, and Kahneman 1999; Rolls et al. 1981). Alternatively, other factors seem to be more psychological, such as perceived variety (Kahn and Wansink 2004), memory associated with an experience (e.g., Redden and Galak 2013; Rozin et al. 1998), and how people perceive (Sevilla and Redden 2014) or categorize (Redden 2008) a stimulus. Learning more about the ways in which satiation can be delayed may help consumers enjoy their favorite products longer (Raghunathan and Irwin 2001).

Previous research has not examined how anticipation of future consumption affects satiation in the present. Consumers are frequently able to anticipate future consumption because they commonly make consumption or purchase decisions in advance. For example, people often buy vacation packages, time shares, or season tickets for extended periods of time; lease vehicles for a set number of years or months; acquire annual country club memberships; or buy yogurt in bulk at Costco. Furthermore, people often find themselves committed to a limited set of entertainment or dining options because of external or geographical constraints, such as finding lunch spots within walking distance from work. Under these circumstances, it is natural to consider future experiences while engaging in current related consumption episodes. We propose that this form of rumination influences current satiation and, consequently, the overall enjoyment people derive from a current experience.

We examine situations in which people anticipate having a varied future consumption experience (i.e., an outcome different from the one they currently consume). Although previous research has shown that consumers often make choices on the basis of how much variety they anticipate they will desire in the future (Read and Loewenstein 1995; Simonson 1990), no prior work has shown how the anticipation of variety

*Julio Sevilla is Assistant Professor of Marketing, Terry College of Business, University of Georgia (e-mail: sevilla@uga.edu). Jiao Zhang is Assistant Professor of Marketing, Lundquist College of Business, University of Oregon (e-mail: jzhang9@uoregon.edu). Barbara E. Kahn is Patty and Jay H. Baker Professor of Marketing, The Wharton School, University of Pennsylvania (e-mail: kahn@wharton.upenn.edu). Joel Huber served as guest editor, and Dilip Soman served as associate editor for this article.

ISSN: 0022-2437 (print)
1547-7193 (electronic)

Journal of Marketing Research
Vol. LIII (December 2016), 954–968
DOI: 10.1509/jmr.14.0360

in the future influences consumers' rate of satiation in a current consumption occasion. Similarly, prior research has shown that anticipating future consumption can have immediate affective impact and create anticipatory pleasure or pain (e.g., Loewenstein 1987) that can influence consumers' decisions (e.g., Loewenstein 1987; Loewenstein and Prelec 1993). However, these previous studies on the effect of anticipation have not specifically examined the effect of anticipating the consumption of variety and have not examined the potential impact of this anticipation on the rate of satiation from a current consumption episode.

Previous research has shown that people have a preference for variety (Herrnstein and Prelec 1991) and believe that consuming a variety of foods improves their consumption experiences (e.g., Ratner, Kahn, and Kahneman 1999; Read and Loewenstein 1995; Simonson 1990). Building on these findings, we propose that knowing that they will consume variety in the future will lead consumers to actively anticipate the future consumption experience—that is, to think about and (mentally) enjoy the upcoming consumption episode "ahead of time" and to generate positive anticipatory thoughts about the future consumption experience. These positive anticipatory thoughts will be incorporated into their experience of the current outcome and reduce the rate of satiation. We provide mediational evidence for our proposed mechanism and identify two boundary conditions for our basic effect: product category (whether the current and the varied future outcomes belong to the same or different categories) and the valence of future variety (whether the varied future outcome is more attractive than, as attractive as, or less attractive than the current outcome).

Our findings make contributions to both the literature on satiation and that on anticipation utility. We add a novel and relevant factor to the literature on the psychological determinants of satiation: anticipation of future variety. In addition, we show that the mechanism by which anticipating future variety works differs from that by which recalling past variety operates (Galak, Redden, and Kruger 2009). Whereas Galak, Redden, and Kruger (2009) show that thinking about variety consumed in the past allows consumers to recover more quickly from already-experienced satiation, we show that anticipating variety to be consumed in the future reduces the rate at which satiation from current consumption occurs. We also make a contribution to the anticipation utility literature (e.g., Loewenstein 1987) by showing that not only can anticipating the consumption of a better or a worse outcome have immediate affective impact, but also anticipating the consumption of a varied outcome can influence the rate at which people satiate from a current, but related, experience.

Finally, our findings have practical relevance for consumer welfare, as consumers often face situations in which they know in advance what type of consumption experiences they will be exposed to in the future. There are also situations in which marketers or policy makers can influence the type of consumption experiences consumers will have or anticipate they will have in the future. Yet little is known about how the anticipation of these events could influence consumers' current rate of satiation and, consequently, their overall consumption experience. Our findings help consumers enjoy their favorites longer.

THEORETICAL FRAMEWORK

Psychological Determinants of Satiation

Satiation refers to the phenomenon in which consumers enjoy a desirable stimulus less when it is repeatedly consumed (Coombs and Avrunin 1977). This effect has been documented among edible (e.g., Redden 2008; Rolls et al. 1981; Sevilla and Redden 2014) and nonedible (e.g., Nelson and Meyvis 2008; Ratner, Kahn, and Kahneman 1999; Redden 2008) stimuli. Physiological factors such as the quantity consumed (e.g., Mook and Votaw 1992) and the amount of variety experienced (e.g., Ratner, Kahn, and Kahneman 1999; Rolls, Van Duijvenvoorde, and Rolls 1984) naturally affect satiation. Recent research has shown that satiation can also be influenced by psychological factors such as the memories associated with an event (e.g., Galak, Redden, and Kruger 2009; Rozin et al. 1998) and the way in which a stimulus is construed (Sevilla and Redden 2014) or categorized (Raghunathan and Irwin 2001; Redden 2008). For example, Galak, Redden, and Kruger (2009) find that after people have repeatedly consumed an outcome and become satiated, asking them to recall the variety they have consumed in the past speeds up their recovery from satiation.

In the present research, we examine whether repeated consumption of an outcome will result in slower satiation if consumers expect to consume variety in the future. We propose a theory that describes how and when anticipating the consumption of a varied outcome in the future helps slow down satiation from a current consumption experience.

Anticipating Future Variety Reduces Current Satiation Rate

A central premise of our theory is that people who expect to consume variety in the future may anticipate their consumption of the future outcome—that is, mentally simulate its consumption experience—and this anticipation will influence the current satiation rate. Economists have long recognized that people anticipate the consumption of a future outcome and experience immediate affect from such anticipation (e.g., Bentham 1789; Jevons 1905). Jevons (1905) identifies the pleasure and pain people experience from their anticipation of future events as "anticipal pleasure" and "anticipal pain" and proposes that these mechanisms are important sources of utility. Loewenstein (1987) empirically demonstrates the importance of anticipation utility by showing that people deliberately seek (avoid) positive (negative) anticipation utility, which often leads them to delay the consumption of desirable outcomes (e.g., obtaining a kiss from the movie star of one's choice) and to speed up the consumption of undesirable outcomes (e.g., receiving a nonlethal electric shock). This finding contradicts a main economic theory of intertemporal preference, the discounted utility theory, which posits that temporally delayed outcomes are discounted (valued less) by consumers, and thus people usually prefer speeding up (delaying) the consumption of desirable (undesirable) outcomes (e.g., Loewenstein and Prelec 1992).

Anticipation utility has also been evoked to explain other patterns of consumer behavior, such as people's preference for increasing sequences of outcomes (i.e., with the more desirable outcomes coming later) over decreasing ones (i.e., with more desirable outcomes coming sooner) (Loewenstein and Prelec 1993) and consumers' preference for prepaying for a certain product or service before

consuming it (Prelec and Loewenstein 1998). For example, Frederick and Loewenstein (2008) propose that people prefer increasing sequences because they anticipate consuming more desirable outcomes in the future, thus generating a positive anticipatory experience. The opposite is true for decreasing sequences.

Our research extends previous findings on anticipation utility (Elster and Loewenstein 1992; Loewenstein 1987) in two respects. First, the previous research has not examined situations in which the anticipated future outcome is neither more nor less attractive but instead is simply different. Second, prior work has not examined the effect of anticipating future consumption on the rate at which repeated consumption of a current outcome satiates.

To illustrate our theory, consider two scenarios. In the baseline scenario, participants consume a given outcome repeatedly. In the future-variety scenario, participants similarly consume a given option repeatedly except that before they begin, they know that they will consume a different outcome in the future that belongs to the same product category and is similarly attractive. We subsequently show that these two assumptions are boundary conditions.

Consider the future-variety scenario. First, building on previous research showing that people have favorable attitudes toward variety (e.g., Ratner, Kahn, and Kahneman 1999; Read and Loewenstein 1995; Simonson 1990), we propose that as people repeatedly consume the current outcome, they will start anticipating the consumption of the varied future outcome and generate positive thoughts about that future experience. Second, we propose that consumers' enjoyment from consuming the current outcome is a combination of their direct consumption experience and their anticipatory experience at the moment. Thus, anticipating future variety provides a boost to consumers' momentary enjoyment of the current outcome. Third, people are likely to engage in anticipating the consumption of the future varied outcome increasingly as they repeatedly consume the current outcome: at first, the current outcome is fresh, but this freshness diminishes as people consume more of it. In addition, as Elster and Loewenstein (1992) suggest, anticipation intensifies as people get closer to the future consumption outcome. It is also possible for anticipatory thoughts about the future consumption of a varied outcome to be more positive with repeated consumption of the current outcome. Therefore, the boost that anticipating the consumption of future variety provides to the current consumption experience will become larger with repeated consumption of the current outcome. Consequently, the difference in momentary experience during the current consumption episode between the baseline and future-variety scenarios will diverge as the current episode progresses, allowing satiation to be slower in the future-variety scenario.

What if people know that, in the future, they will continue to consume the outcome they are currently consuming (the future-same scenario)? Because the future outcome is identical to the current one, we propose that consumers will not actively engage in anticipation of the future consumption experience. Thus, the current satiation rate in the future-same scenario will be faster than that in the future-variety condition and similar to that in the baseline condition.

Boundary Conditions for the Anticipating-Future-Variety Effect

We examine two boundary conditions for the proposed effect of anticipation of future variety on satiation. First, we suggest that if the current and varied future outcomes belong to different product categories (e.g., a food item now and a nonfood item in the future), then anticipation of consuming the varied outcome in the future will not decrease the rate of satiation from the current outcome. Although the future outcome constitutes variety, that variety is irrelevant to the current consumption and thus will not provoke active anticipation. This is consistent with research by Galak, Redden, and Kruger (2009), who posit and show that recalling past variety does not speed up recovery from satiation if this variety belongs to a different product category.

Second, the comparative attractiveness of the future outcome should also affect the current outcome. If the future option is more attractive, participants should generate positive thoughts about this future consumption experience, causing a decrease in current satiation. However, if the future option is less attractive, even if it is different, this should generate negative anticipatory thoughts. In this case, anticipating variety is likely to be ineffective at slowing down satiation and may even increase the current satiation rate if the future outcome is considerably less attractive than the current outcome. Consequently, we predict that the effect will be weaker in the less-attractive-variety condition than in either the equally-attractive-variety or the more-attractive-variety conditions.

In our analysis, we maintain that anticipation has a direct effect, what Elster and Loewenstein (1992) call the "consumption" effect—namely, anticipating the consumption of a better (worse) future outcome increases (decreases) one's current enjoyment. However, as Elster and Loewenstein suggest, the future outcome could instead serve as a reference point and influence one's enjoyment of a current outcome through a "contrast effect," such that anticipating the consumption of a better (worse) future outcome decreases (increases) the perceived attractiveness of the current outcome by comparison. Elster and Loewenstein have discussed the implications of anticipation depending on whether the consumption effect or the contrast effect is stronger. However, little research has examined factors that influence the relative strength of the two effects.

Following Frederick and Loewenstein (2008), we believe that in our contexts we will predominately observe a "consumption effect." As mentioned previously, the anticipation utility account for the preference for increasing sequences (Frederick and Loewenstein 2008) posits that anticipating a more (less) attractive outcome in the future has a net positive (negative) effect, which implicitly assumes that the consumption effect of anticipation is stronger than the contrast effect. Alternatively, there is another contrast effect explanation that may support our hypothesis. Again justifying the preference for increasing sequences, Frederick and Loewenstein (2008) and Loewenstein and Prelec (1993) suggest a contrast effect process by proposing that people compare each outcome in a sequence with the outcome they have previously consumed; thus, an increasing (decreasing) sequence entails consuming a series of gains (losses). Taken together, the two

explanations support our theory that anticipating the consumption of a better (worse) future outcome increases (decreases) one's current enjoyment and thus mitigates current satiation.

Anticipation of Future Variety Versus Recalling Past Variety

Our research differs from Galak, Redden, and Kruger (2009) in two important ways. First, they study situations in which people have already become satiated from repeatedly consuming an outcome and show that asking them to recall their past experiences of variety increases their enjoyment of this outcome. In contrast, we study situations in which consumers are about to begin consuming an outcome repeatedly and show that its consumption will result in slower satiation if they know they will consume variety in the future. We empirically demonstrate that although anticipating future variety may reduce current satiation, recalling past variety does not seem to exert this type of effect.

Second, the psychological mechanisms underlying the two effects are different. Galak, Redden, and Kruger (2009) propose that recalling past variety speeds up recovery from satiation by overcoming a "focalism" bias—namely, consumers tend to overestimate the number of times they have consumed the same or similar outcomes and underestimate the amount of variety they have consumed in the past. In contrast, for our effect, positive anticipatory thoughts about the experience of consuming variety in the future play a critical role. To illustrate the difference between the two psychological mechanisms, consider the role of the relative attractiveness of the variety at hand. Galak, Redden, and Kruger posit and empirically show that recalling past variety speeds up recovery from satiation regardless of whether the recalled variety (i.e., the different outcomes) was more or less attractive than the current outcome. In contrast, we propose and demonstrate that the relative attractiveness of the future variety matters. Anticipating future variety is effective at reducing present satiation if the varied future outcome is more attractive or at least as attractive as the current outcome but is ineffective if it is considerably less attractive than the current outcome; in the latter case, anticipating future variety may even increase current satiation.

Overview of Studies

We test our theory across five studies in which participants rate their enjoyment of experiences as they consume edible and nonedible stimuli. In the first four studies, we held the product category of the current consumption outcome, jelly beans, constant to ensure that any variations in the results across the studies were due to differences in theoretically relevant factors and not to differences in the consumption outcome involved. In our final study, we employed a different product category, music, to demonstrate the generalizability of the phenomenon and our proposed psychological mechanism.

Study 1 provides initial evidence that being able to anticipate the consumption of variety in the future decreases the current satiation rate. Study 2 replicates this finding using multiple dependent variables and a different experimental design and provides mediational evidence for our proposed psychological process. This study also demonstrates a boundary condition for the effect—that is, anticipating the consumption of future variety does not reduce the current rate of satiation if the future outcome belongs to a different product category. Study 3 rules out two alternative explanations for the effect: mere exposure to variety and perceived scarcity of the current outcome. Study 4 provides further mediational evidence for our proposed mechanism and illustrates another boundary condition for the effect—that is, when the varied future outcome is considerably less attractive than the current outcome, anticipating future variety does not decrease, and instead increases, current satiation. This study also shows that although anticipating future variety reduces current satiation, recalling past variety does not. Study 5 replicates the effect in a nonedible consumption domain, music, and provides further direct support for our proposed underlying mechanism through moderation; we show that when participants are led to generate either positive or negative thoughts associated with the future consumption outcome, the anticipating-future-variety effect disappears.

STUDY 1

Study 1 tests the core prediction that people satiate more slowly from a current experience when they anticipate consuming variety in the future. In line with previous research in this area (e.g., Ratner, Kahn, and Kahneman 1999; Redden 2008), we measure satiation by examining how much ongoing enjoyment ratings decay over time.

Method

One hundred eighty-five students at a large U.S. university participated in this experiment in exchange for course credit. After arriving at the lab, participants were told that they would be taking part in a taste test in which they would each eat a total of 20 French vanilla jelly beans. We manipulated future consumption (same vs. variety) between subjects. Before starting the consumption task, participants read a passage informing them that they would be eating French vanilla jelly beans and providing evaluations about the experience. They were also told that when the session ended, they would be receiving a bag of jelly beans either with eight flavors (future-variety condition) or with the same French vanilla flavor (future-same condition) for them to take and eat at home. After reading this, participants ate five servings of jelly beans, four units per serving. Following each serving, they rated their enjoyment ("How much are you enjoying this candy so far?" 1 = "not at all," and 100 = "very much"). Thus, Study 1 was a 2 (future consumption: variety vs. same) between-subjects × 5 (enjoyment ratings: five servings) within-subject mixed design.

Results

We hypothesized that participants in the future-variety condition would satiate at a slower rate than those in the future-same condition. To test this prediction, we ran a 2 (future consumption) × 5 (enjoyment ratings) mixed analysis of variance (ANOVA), with the second factor as a repeated measure. Our findings show that the rates of satiation (i.e., slope) between the two future consumption conditions were significantly different ($F(1, 182) = 10.73$, $p < .001$); enjoyment ratings declined at a slower pace in the future-variety condition than in the future-same condition. This was corroborated by simple t-tests showing that while participants' first enjoyment rating did not differ between the future-variety and future-same conditions ($M_{\text{future-variety}} = 48.97$ vs. $M_{\text{future-same}} = 51.74$; $t(183) < 1$, n.s.),

their fifth enjoyment rating was significantly higher in the future-variety condition than in the future-same group ($M_{future\text{-}variety}$ = 30.88 vs. $M_{future\text{-}same}$ = 20.98; t(183) = 2.30, p = .02). Furthermore, the percentage of reduction in enjoyment was significantly smaller in the future-variety condition ($M_{future\text{-}variety}$ = 36.94%) than in the future-same group ($M_{future\text{-}same}$ = 59.45%; z = 3.05, $p < .005$). Figure 1 illustrates the differential satiation pattern across both conditions. These results suggest that the future-consumption manipulation influenced the final enjoyment by shaping the ongoing satiation from repeated consumption rather than by an intercept effect that influenced all the enjoyment ratings by a constant amount, including participants' enjoyment of the first serving of jelly beans.

Discussion

The findings of our first study provide initial evidence in support of our proposition that anticipating variety mitigates satiation from a current experience. In this study, we told participants that in the future they would be eating a jelly bean assortment that contained either a variety of flavors or the same flavor they currently had. We measured satiation through online periodic measures of enjoyment of the experience, whereby the decline in enjoyment indicated the different satiation rates across conditions. This approach to measuring satiation is rigorous. However, one potential concern associated with it is that asking people to rate their enjoyment multiple times may be intrusive. As our following studies show, our effect is robust and persists across different types of designs and measures.

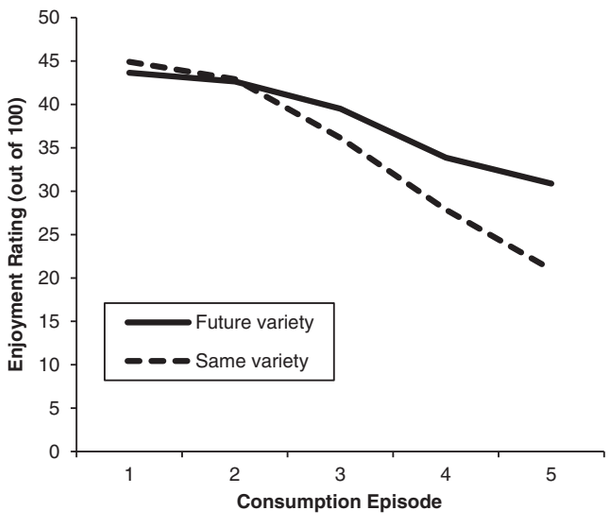
STUDY 2

Study 2 has three objectives. The first is to replicate our finding from Study 1 using a different design. In Study 2 we include a control condition in which participants are not informed of any future consumption episode. This enables us to examine whether anticipating the consumption of future variety reduces ongoing satiation, anticipating the consumption of the same outcome in the future increases ongoing satiation, or both. We use a new manipulation of future variety and include additional measures of satiation. To ensure that the current outcome and future outcome in the future-variety condition were equally attractive, we pretest the attractiveness of the consumption outcomes. Participants are not asked to provide multiple enjoyment ratings throughout the consumption episode; rather, they are asked to report only one enjoyment rating at the end. In addition being less intrusive, this design allows us to include another, commonly used behavioral intention measure of satiation: "How much would you like to eat another jelly bean?" (e.g., Redden 2008; Rolls et al. 1981). We also measure participants' willingness to pay for another serving of the same jelly beans they had been eating.

The second objective is to examine our hypothesized boundary condition that anticipating variety will not reduce satiation if the varied future outcome belongs to a different product category. Here, we include a future-consumption condition in which the future outcome is from a different domain (music).

The third objective is to provide evidence in favor of the psychological mechanism by which the anticipating-future-variety effect occurs. We propose that when people know that they will consume variety from the same product category in the future, they actively engage in anticipating/thinking about the future consumption experience, and the positive anticipatory thoughts generated help slow down current satiation. In contrast, when people know that they will consume the same outcome or consume a varied outcome from a different product category in the future, they will not actively engage in anticipating the future consumption experience; as a result, their current satiation rate will be similar to that when they do not expect to have a future consumption episode (i.e., the control condition). Accordingly, in Study 2 we measure the extent to which participants thought about the future consumption outcome while consuming the current one and predict that this measure will mediate the effect of the future-consumption manipulation on current satiation.

Figure 1
RATE OF SATIATION ACROSS VARIETY CONDITIONS (STUDY 1)



Method

Three hundred twenty-two students from a large U.S. university participated in this study in exchange for course credit. Participants were given 20 jelly beans of the same flavor to consume in the lab, either French vanilla or cherry, and this was randomly assigned. The two flavors were pretested to be similarly attractive. In the pretest, a group of people (N = 72) from the same population who did not participate in the study ate either of the two flavors of jelly beans and indicated how much they liked the jelly bean on a nine-point scale. A t-test showed that the two flavors of jelly beans were similarly liked (M_{cherry} = 5.94 vs. $M_{French\ vanilla}$ = 5.62; t(70) < 1, n.s.).

After receiving their jelly beans, participants were randomly assigned to one of four conditions: control, future–same flavor, future–different flavor, and future–iTunes song. The result of another pretest showed that participants liked receiving an iTunes song of their choice more than they did receiving either flavor of jelly beans (M_{iTunes} = 7.14 vs. $M_{jelly\ beans\ combined}$ = 5.78; t(105) = 3.15, $p < .005$). Participants in the three future-consumption conditions were told that they would return to the

lab in two weeks for their future-consumption episode. Participants in the control group were not given any information about an upcoming consumption episode.

After reading the instructions, participants ate the 20 jelly beans they had received and answered the following two questions: "How much did you enjoy the jelly bean you just ate?" and "How much would you like to eat another jelly bean?" (1 = "not at all," and 100 = "very much so"). To examine the underlying mechanism, we asked the participants, "As you were eating the jelly beans, how much were you thinking about the taste of the jelly beans [the sound of the song] you will have the next time you come to the lab?" (0 = "not at all," and 7 = "very much"). Then, participants were asked how much they would be willing to pay for a serving of the jelly bean flavor they had just eaten. Finally, participants (except those in the control condition) were asked, "To what extent does the product you will consume on your next visit to the lab belong to the same category as the jelly beans you just ate?" (0 = "it does not belong to the same category at all," and 7 = "it belongs to the exact same category"). This served as a manipulation check to examine whether participants indeed perceived the two flavors as different and whether participants perceived the song and the jelly beans as belonging to different product categories.

Results

Manipulation checks. Although there was a significant difference in the "category" measure between the future–same flavor and the future–different flavor conditions ($M_{\text{future–same flavor}} = 5.68$ vs. $M_{\text{future–different flavor}} = 3.32$; $t(160) = 4.21$, $p < .0001$), the difference between the future–same flavor and the future–iTunes song conditions was significantly larger ($M_{\text{future–same flavor}} = 5.68$ vs. $M_{\text{future–iTunes song}} = 2.25$; $t(158) = 6.50$, $p < .0001$). There was also a significant difference between the future–different flavor and the future–iTunes song conditions ($M_{\text{future–different flavor}} = 3.32$ vs. $M_{\text{future–iTunes song}} = 2.25$; $t(160) = 2.21$, $p < .05$). These results suggested that the iTunes song consumption domain was significantly different from the jelly beans domain. These results also suggested that participants did perceive a certain degree of variety between the two different flavors of jelly beans.

Satiation. We averaged the enjoyment rating and the intention-for-another-jelly-bean rating to create an enjoyment composite ($\alpha = .88$) and submitted it to a 4 (future consumption) × 2 (present jelly bean flavor) ANOVA. The analysis found a significant effect of future consumption ($F(3, 314) = 10.45$, $p < .0001$); no other effects were significant (ps > .25). Next, we collapsed the data across the two present jelly bean flavors and ran a one-way ANOVA involving all four conditions. As we expected, contrast analyses showed that the enjoyment composite was higher in the future–different flavor condition ($M_{\text{future–different flavor}} = 42.56$) than in any of the other three conditions ($M_{\text{future–same flavor}} = 26.90$; $F(1, 318) = 12.12$, $p < .001$; $M_{\text{future–iTunes song}} = 20.66$; $F(1, 318) = 23.94$, $p < .0001$; $M_{\text{control}} = 20.75$; $F(1, 318) = 23.32$, $p < .0001$).

Willingness to pay. A one-way ANOVA on willingness to pay involving the future–same flavor, future–iTunes song, and control conditions found no significant results ($M_{\text{future–same flavor}} = \$.26$ vs. $M_{\text{future–iTunes song}} = \$.36$ vs. $M_{\text{control}} = \$.37$; $F(2, 234) < 1$, n.s.). We combined these three conditions into one and compared it with the future–different flavor group. Consistent with the pattern of results for the enjoyment composite, another one-way ANOVA showed that willingness to pay was higher in the future–different flavor condition than in the other three conditions combined ($M_{\text{future–different flavor}} = \$.52$ vs. $M_{\text{others}} = \$.33$; $F(1, 318) = 4.04$, $p < .05$).

Mediating role of thoughts about the future. We hypothesized that the effect of anticipating future variety on satiation from a current experience was driven by participants' anticipatory thoughts about the consumption experience of the future outcome. We tested this prediction in two ways. The control condition was not included in either analysis because the question regarding thoughts about the future consumption experience was not asked in this condition. In the first analysis, we compared the future–different flavor condition with the combination of the future–iTunes song and the future–same flavor conditions, as the last two conditions did not differ on the item regarding thoughts about the future consumption experience ($M_{\text{future–same flavor}} = 2.47$ vs. $M_{\text{future–iTunes song}} = 2.39$; $t(143) < 1$, n.s.).

The future-consumption independent variable (future–different flavor vs. the combination of future–same flavor and future–iTunes song conditions) influenced the mediator, thoughts about the future consumption experience ($M_{\text{future–different flavor}} = 3.86$ vs. $M_{\text{combined conditions}} = 2.46$; $t(216) = 3.14$, $p < .001$). This mediator was positively related to enjoyment ($\beta = 3.89$, $t(216) = 7.75$, $p < .0001$). A bootstrapping analysis employing Preacher and Hayes's (2008) Model 4 confirmed that the future-consumption manipulation had a significant indirect effect on enjoyment through thoughts about the future consumption experience ($\beta = 5.31$, 95% confidence interval [CI] = [1.93, 9.51]). This pattern of results indicates that anticipatory thoughts about the future experience mediated the effect of anticipating variety on satiation.

Mediation analysis for the two future jelly beans conditions. The second mediation analysis compared the future–same flavor and the future–different flavor conditions and also found mediation support for our proposed mechanism. The future-consumption independent variable influenced the mediator, thoughts about the future consumption experience ($M_{\text{future–different flavor}} = 3.86$ vs. $M_{\text{future–same flavor}} = 2.47$; $t(146) = 2.64$, $p < .01$). The mediator was positively related to the enjoyment composite ($\beta = 3.71$, $t(146) = 5.22$, $p < .0001$). A bootstrapping analysis employing Model 4 (Preacher and Hayes 2008) confirmed that the future-consumption manipulation had a significant indirect effect on the enjoyment composite through the mediator ($\beta = 4.81$, 95% CI = [1.63, 9.87]). These results again indicate that thoughts about the future experience mediated the effect of anticipating variety on satiation from a current experience.

Discussion

The findings of this study provide additional evidence for the anticipating-future-variety effect on current satiation and extend the effect to additional measures of enjoyment and satiation, including behavioral intention and willingness to pay. By measuring enjoyment in a nonintrusive, nonrepetitive way, we rule out alternative explanations that posit that the future-consumption manipulation might have

influenced the degree of boredom triggered by repetitive measures of enjoyment during the current consumption episode. By pretesting jelly beans flavors and holding the attractiveness of the jelly beans used in the study constant, we control for any confounding effect of anticipating a more attractive future outcome and isolate the effect of anticipating future variety on current satiation. By including a control condition, we show that the basic finding documented in two studies occurred not because anticipating the consumption of the same outcome in the future increases current satiation but because anticipating the consumption of future variety decreases it.

The findings of Study 2 also demonstrate a boundary condition for the anticipating-future-variety effect on current satiation: anticipating the consumption of future variety in a different product category is ineffective in reducing current satiation. Consistent with this finding, we observe that anticipating the future consumption of a different flavor of jelly beans reduces the current satiation rate, whereas anticipating the consumption of an iTunes song does not influence the current satiation rate, even though the iTunes song was pretested to be more attractive than the jelly beans. One may argue that the enjoyment in the future–iTunes song condition was lower than that in the future–different flavor condition because anticipating the consumption of a favorite iTunes song, which was highly desirable and attractive, triggered a contrast effect that lowered participants' enjoyment of the jelly beans they were currently consuming. However, our data did not support this interpretation. The contrast effect account would also predict enjoyment to be lower in the future–iTunes song condition than in the control and the future–same flavor condition; we did not find any significant difference between these conditions.

Furthermore, we provided initial mediational support for our proposition that knowing that one will consume variety in the future reduces current satiation. This occurs because people are led to think about and mentally preconsume the future variety, which consequently triggers positive anticipatory thoughts. We find that participants in the future–different flavor condition think more about their future consumption outcome than do either those in the future–same flavor condition or those in the future–iTunes song condition, and that this difference leads to the difference in satiation between these conditions. This mediational evidence further suggests that anticipating the consumption of a favorite iTunes song failed to reduce current satiation not because a contrast effect but because participants did not anticipate (i.e., think about) the future consumption experience of the song.

Some potential alternative explanations remain. For example, one may argue that participants in the future-variety condition showed less satiation than did participants in the other conditions because they were merely exposed to variety (reminded of the existence of or given information about variety). It is also possible that participants in the future-variety condition perceived the current outcome as scarce or limited in availability because they would be unable to consume it in the future episode, and perceived scarcity has been shown to reduce satiation (Sevilla and Redden 2014). Note that this scarcity account cannot explain why satiation was slower in the future–different flavor condition than in the future–iTunes song condition, as in both cases participants were unable to consume their current flavor of jelly beans the next time they returned to the lab. We directly address the two alternative explanations in Studies 3–5.

STUDY 3

Study 3 addresses two alternative explanations for our basic finding. First, to rule out the mere-exposure-to-variety alternative explanation, we create a mere-exposure-to-variety condition in which participants are shown pictures of different flavors of jelly beans but are not told that they will be consuming them in the future. We predict that satiation in this condition will be similar to that in the future-same condition and faster than that in the future-variety condition. Second, to rule out the perception-of-scarcity alternative explanation, we measure perceived scarcity/limited availability of the current consumption outcome, and more importantly, we modify the future-variety condition so that participants can choose between consuming the same flavor or a different flavor of jelly bean in the future. This should prevent the participants from inferring that the current flavor of jelly beans may not be available in the future. We predict, as before, that satiation will be slower in this new future-variety condition than in the future-same condition.

In Study 3, we administered the measures of enjoyment twice: once after participants consumed the first jelly bean and once at the end of the consumption episode. The measures were less intrusive than those in Study 1, but they still enable us to examine whether the future-consumption manipulation influenced participants' initial enjoyment.

Method

One hundred forty-eight students from a large U.S. university participated in this experiment in exchange for course credit. We used two different flavors of jelly beans for the present consumption experience: blue raspberry and red apple. We selected the two flavors on the basis of the result of a pretest involving 67 participants. The participants were asked to look at the names and images of five flavors of jelly beans and to report how much they liked each of them. A repeated-measures ANOVA found no significant differences in liking ($F(4, 62) = 1.19$, $p > .25$; $M_{\text{blue raspberry}} = 5.79$, $M_{\text{red apple}} = 5.67$, $M_{\text{strawberry}} = 5.98$, $M_{\text{orange}} = 5.51$, $M_{\text{grape}} = 5.96$). We picked blue raspberry and red apple, the ratings for which were in the middle.

Participants were randomly assigned to one of four conditions: control, future-same, future-variety, and exposure to variety. All participants received one serving of 20 jelly beans of either the blue raspberry flavor or the red apple flavor, counterbalanced. Afterward, participants in both the future-same and the future-variety conditions were told that at the end of the experiment they had to take one bag of jelly beans to eat at home that same day. In the future-same condition, participants were told that the flavor of the jelly beans in that bag was identical to that they were currently consuming; in the future-variety condition, participants were told that they would choose either a bag of blue raspberry jelly beans or a bag of red apple jelly beans. In the mere-exposure-to-variety condition, participants only saw the images of four of the five flavors of jelly beans from the pretest (the image of the flavor they currently consumed was excluded) displayed on their screens. Using these images from the pretest ensured that the attractiveness of these jelly beans

was equivalent to that of the jelly beans the participants in the future-variety condition would consume at home that same day. In the control condition, participants did not receive any special instruction.

All participants were first asked to eat one jelly bean and answer the following two questions: "How much did you enjoy the jelly bean you just ate?" and "How much would you like to eat another jelly bean?" (1 = "not at all," and 100 = "very much so"). Participants were then asked to eat the rest of their jelly beans. When they were done eating, they were asked those same two questions again. Finally, participants rated, on a nine-point scale, how scarce/limited in availability the jelly beans they had just eaten were (1 = "not at all," 9 = "very much so").

Results

Satiation. We predicted that we would observe less satiation in the future-variety condition than in the future-same, mere-exposure-to-variety, and control conditions. We first ran a 4 (future consumption) × 2 (current flavor) ANOVA on the enjoyment composite ($\alpha = .87$) for the first jelly bean eaten and found no significant effect of future consumption ($M_{future\text{-}variety} = 69.98$, $M_{future\text{-}same} = 68.22$, $M_{mere\text{-}exposure\text{-}to\text{-}variety} = 69.46$, $M_{control} = 71.85$; $F(3, 140) < 1$, n.s.), current flavor ($F(1, 140) < 1$, n.s.), or two-way interaction ($F(3, 140) < 1$, n.s.). Thus, we subsequently collapsed the data across flavors. To test our prediction, we ran an ANOVA with the four future consumption conditions as independent variables and the enjoyment composite score for the last jelly bean consumed as the dependent factor. We used the composite score for the first jelly bean consumed as a covariate. Our analysis showed a significant effect of future consumption ($F(3, 144) = 3.62$, $p < .02$). As we predicted, contrast analyses showed that enjoyment of the last jelly bean was higher (i.e., satiation was lower) in the future-variety condition ($M = 55.91$) than in the future-same ($M = 39.54$; $F(1, 144) = 4.67$, $p = .03$), mere-exposure-to-variety ($M = 37.92$; $F(1, 144) = 5.64$, $p < .02$), and control ($M = 40.27$; $F(1, 144) = 4.26$, $p < .05$) conditions.

Perceptions of scarcity/limited availability. A similar 4 × 2 ANOVA on the scarcity perception rating produced no effect of future consumption ($F(3, 140) < 1$, n.s.) or current flavor ($F(1, 140) < 1$, n.s.) and no interaction between the two factors ($F(3, 140) < 1$, n.s.). Contrast analyses showed that scarcity perceptions did not differ between the future-variety condition ($M = 3.62$) and any of the other three conditions (future-same: $M = 3.43$; $F(1, 140) < 1$, n.s.; exposure-to-variety: $M = 3.22$; $F(1, 140) < 1$, n.s.; control: $M = 3.92$; $F(1, 140) < 1$, n.s.).

Discussion

The findings of Study 3 rule out two alternative explanations for our effect. First, we demonstrate that the phenomenon is not activated through merely exposing people to variety: we find that telling participants they would consume a different flavor of jelly beans in the future reduced current satiation, whereas merely exposing participants to variety (i.e., showing them names and pictures of different flavors of jelly beans) did not. Second, we find no evidence for the alternative explanation that attributes the effect to increased perceptions of scarcity of the current consumption outcome in the future-variety condition. We still find the basic effect even though participants in the future-variety condition had the option of consuming the same flavor of jelly bean in the future. Furthermore, we measured perceived scarcity of the current consumption outcome and did not find any significant difference across conditions.

STUDY 4

Study 4 had several objectives: (1) to broaden our understanding of when and how the effect of anticipating future variety on current satiation and the underlying mechanism operate, (2) to investigate the relationship between this effect and the effect of recalling past variety on recovery from satiation (Galak, Redden, and Kruger 2009), and (3) to study the implication of the effect for people's retrospective enjoyment of and satisfaction with a current experience. To further examine the proposed underlying mechanism, we test another boundary condition for the effect of anticipating future variety on satiation: the attractiveness of the future consumption outcome. We test the hypothesis that anticipating the consumption of future variety will decrease the current satiation rate if the varied future outcome is as attractive as or more attractive than the current outcome, but not if it is considerably less attractive than the current outcome; in the latter case, anticipating future variety may even increase the current satiation rate. We also add several new process measures to provide additional mediational evidence for our proposed mechanism and further address alternative explanations.

To demonstrate the difference between our research and prior work on the effect of recalling past variety on recovery from satiation (e.g., Galak, Redden, and Kruger 2009), for each future-variety condition in Study 4, we create a corresponding past-variety condition, in which participants are asked to recall the last time they consumed the outcome that matched the future outcome in the corresponding future-variety condition. Both the past-variety manipulation and the future-variety manipulation are administered before participants start the current consumption episode. We expect to find that although anticipating future variety decreases current satiation rate, recalling past variety does not influence current satiation.

Finally, in this study we include two measures of overall evaluations of the current consumption experience: retrospective overall enjoyment and satisfaction. We predict that slower satiation due to anticipating future variety will translate into greater overall enjoyment of and satisfaction with the current consumption experience.

Method

Two hundred ninety-two students from a large U.S. university participated in this study in exchange for course credit. This study was a 2 (time of variety: future vs. past) × 3 (valence of variety: no variety vs. better variety vs. worse variety) factorial (plus a control condition), between-subjects design. The stimuli used were five different flavors of jelly beans: strawberry, cherry, orange, green apple, and licorice. To accurately manipulate the valence of variety for each participant, at the beginning of the experiment, we asked participants to eat one jelly bean from each of

the five different flavors and rank them from 1 (their most preferred flavor) to 5 (their least preferred flavor).

After completing the ranking task, participants were told that they would be eating 18 jelly beans of their third-ranked flavor and received a cup containing 18 jelly beans of that flavor. In the future-variety conditions, participants were told that after they consumed the jelly beans in the cup, they would immediately receive another cup of 18 jelly beans to consume. Depending on the valence-of-variety condition, the flavor of the jelly beans in the second cup was their most preferred flavor (better-variety condition), their least preferred flavor (worse-variety condition), or their third-ranked flavor (no-variety condition). In the past-variety conditions, participants were not told about receiving another cup of jelly beans in the future; instead, they were asked to recall the last time they had eaten their most preferred, least preferred, or third-ranked flavor of jelly bean in the past, before participating in the study. A manipulation check collected at the end of the study confirmed that almost all the participants (96.2%) had been exposed to the recalled flavor before the day of the experiment. In the control condition, participants did not receive either the future-variety or past-variety instruction.

As in Study 3, participants answered the questions regarding enjoyment of the jelly bean and willingness to try another jelly bean twice—after they ate the first jelly bean and after they ate the last jelly bean. Then, participants were asked to report how satisfied (0 = "not at all," and 10 = "very much so") they were with the jelly beans they had just eaten as well as their overall enjoyment of the experience (0 = "not at all," and 10 = "very much so").

Participants assigned to each of the future-variety conditions also answered the following question: "As you were eating the jelly beans, how much were you thinking about the taste of the jelly beans you were told you would have in the second task?" (0 = "not at all," and 10 = "a lot"). This enabled us to further examine whether the effect of anticipating future variety on current satiation was mediated by anticipatory thoughts about the future consumption experience.

Finally, we included additional measures to address potential alternative explanations of the anticipating-future-variety effect. To address the alternative explanation that anticipating future variety decreased participants' attention to the current consumption outcome and distracted them, we measured participants' attention to the quantity consumed, attention to flavor of the current outcome, and distraction. To address the perceived-scarcity alternative explanation, we measured perceived scarcity of the current outcome. To address the alternative explanation that anticipating future variety increased the perceived variety in the current consumption, we measured the perceived variety in the current consumption. To address the alternative explanation that anticipating future variety might have triggered participants' thoughts about the variety they consumed in the past or their thoughts associated with other flavors exogenous to the experiment, we measured participants' thoughts about past variety and thoughts about other jelly bean flavors not used in the study. None of these measures were influenced by any of our manipulations; thus, we do not discuss them further (for more detail on these measures, see Table W1 in the Web Appendix).

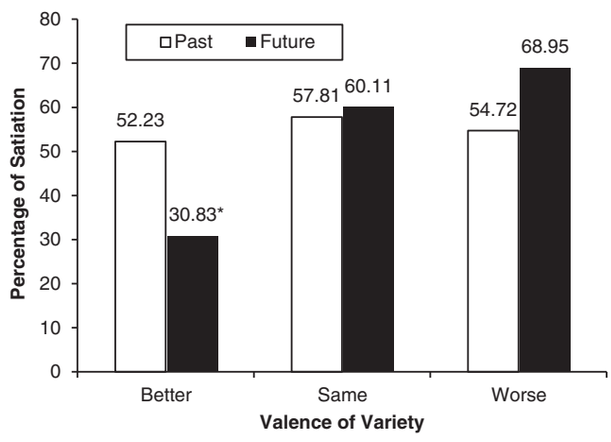
Results

Preliminary results. As in Study 3, we averaged the enjoyment-of-jelly-bean and desire-to-try-another-jelly-bean ratings to create an enjoyment composite (first jelly bean: $\alpha = .73$; last jelly bean: $\alpha = .84$). A 2 (time of variety) × 3 (valence of variety) ANOVA on the composite for the first jelly bean found no significant results (Fs < 1; $M_{future\text{-}better} = 71.49$ vs. $M_{future\text{-}same} = 74.65$ vs. $M_{future\text{-}worse} = 76.78$ vs. $M_{past\text{-}better} = 72.39$ vs. $M_{past\text{-}same} = 73.03$ vs. $M_{past\text{-}worse} = 71.29$).

Satiation. We subtracted each participant's second enjoyment composite from their first and submitted the resulting difference, a measure of satiation (i.e., the decline of enjoyment from the first jelly bean to the last jelly bean), to a 2 (time of variety) × 3 (valence of variety) ANOVA. The analysis revealed a significant effect of valence of variety ($F(2, 243) = 5.95$, $p = .003$), but no significant effect of time of variety ($F(1, 243) < 1$, n.s.). More importantly, the predicted valence of variety × time of variety interaction was significant ($F(2, 243) = 4.59$, $p = .01$). To investigate the nature of this interaction, we split the data on the basis of the time-of-variety manipulation and found that whereas anticipating the consumption of participants' most preferred flavor of jelly bean led to reduced satiation ($M_{better\text{-}future\text{-}variety} = 22.03$) than anticipating the consumption of the same flavor ($M_{future\text{-}same} = 44.88$; $F(1, 126) = 10.49$, $p = .002$) or their least preferred flavor of jelly bean ($M_{worse\text{-}future\text{-}variety} = 52.95$; $F(1, 126) = 22.74$, $p = .0001$), recalling past consumption of their most preferred flavor of jelly bean did not lead to significantly less satiation ($M_{better\text{-}past\text{-}variety} = 37.84$) than recalling past consumption of the same flavor ($M_{past\text{-}same} = 42.21$; $F(1, 117) < 1$, n.s) or the least preferred flavor of jelly bean ($M_{worse\text{-}past\text{-}variety} = 39.01$; $F(1, 117) < 1$, n.s.). Furthermore, there was no significant difference between the same-variety and the worse-variety conditions in either the future-variety condition ($F(1, 243) = 2.04$, $p > .15$) or the past-variety condition ($F(1, 243) < 1$, n.s.). Figure 2 illustrates observed satiation across the time and valence of variety conditions.

Figure 2

PERCENTAGE OF SATIATION ACROSS TIME OF VARIETY AND VALENCE OF VARIETY CONDITIONS (STUDY 4)



*Significantly different from the rest of the conditions combined at $p < .0001$.

We subsequently estimated a one-way ANOVA with all seven conditions and ran contrast analyses comparing the control group with each of the other six conditions. We found only two significant differences: the decrease in enjoyment was significantly smaller in the better-future-variety condition (M = 22.03) than in the control condition (M = 37.74; F(1, 285) = 5.48, $p = .02$) but was significantly higher in the worse-future-variety condition (M = 52.95) than in the control condition (F(1, 285) = 5.30, $p = .02$).

Overall enjoyment and satisfaction. We created an overall evaluation index by averaging the overall enjoyment and satisfaction ratings ($\alpha = .85$) and submitted it to a one-way ANOVA with all seven conditions. Contrast analyses showed that the only significant differences were that the index was significantly higher in the better-future-variety condition (M = 6.38) than in any of the other conditions (control: M = 4.85; F(1, 285) = 5.66, $p < .02$; future-same: M = 4.66; F(1, 285) = 6.86, $p < .01$; worse-future-variety: M = 4.65; F(1, 285) = 6.63, $p = .01$; better-past-variety: M = 4.89; F(1, 285) = 6.96, $p = .02$; past-same: M = 4.29; F(1, 285) = 5.18, $p = .02$; worse-past-variety: M = 37.74; F(1, 285) = 10.18, $p = .002$).

Mediation by thoughts about the future flavor. To test our hypothesis that the effect of anticipating future variety on current satiation was driven by participants' anticipatory thoughts about the future consumption experiences, we independently compared the better-future-variety condition and the worse-future-variety condition with the future-same condition (the baseline). We did not include the control and the past-variety conditions in this analysis, because no future consumption episode in the lab was mentioned in these conditions. Contrast analyses found that participants thought about the future consumption outcome less in the baseline condition (M = 4.93) than in either the better-future-variety condition (M = 6.58; t(81) = 2.14, $p < .04$) or the worse-future-variety condition (M = 6.91; t(84) = 3.02, $p = .003$).

Better-future-variety condition versus the baseline condition. We found that the mediator, thoughts about the future consumption experience, was negatively related to the amount of decrease in enjoyment (satiation) ($\beta = -3.81$, t(81) = 4.38, $p < .0001$). An analysis employing Model 4 (Preacher and Hayes 2008) confirmed that the future-variety manipulation had a significant indirect effect on satiation through thoughts about the future consumption experience ($\beta = 6.32$, 95% CI = [1.13, 14.88]).

Worse-future-variety condition versus the baseline condition. We found that the mediator, thoughts about the future consumption experience, was positively related to the amount of decrease in enjoyment ($\beta = 3.15$, t(84) = 2.98, $p < .005$). An analysis employing Model 4 (Preacher and Hayes 2008) confirmed that future variety had a significant indirect effect on satiation through thoughts about the future consumption experience ($\beta = -6.26$, 95% CI = [−.86, −15.06]).

These results show that anticipatory thoughts about the future consumption experience mediate the effect of future variety on current satiation. When better future variety is involved, the more participants anticipate the future experience, the slower the current satiation, whereas when worse future variety is involved, the more participants anticipate the future consumption experience, the faster the current satiation.

Discussion

The findings of Study 4 provide further mediational evidence in support of our proposition that the effect of anticipating future variety on the current satiation rate is mediated by anticipatory thoughts about the future consumption experience. Furthermore, we identify another boundary condition for the anticipating-future-variety effect documented in the previous three studies: anticipating future variety does not reduce current satiation if the varied future outcome is less attractive than the current outcome.

The present findings also show that the phenomenon of anticipating future variety on current satiation differs from the effect of recalling past variety on recovery from satiation that has already happened (Galak, Redden, and Kruger 2009). We find that although informing the participants that they would experience better variety in the future decreases their rate of satiation from the current consumption, asking the participants to recall the same (better) variety they had enjoyed in the past (prior to the day of the experiment) does not influence their current satiation rate. This finding suggests that different psychological mechanisms underlie the two effects.

STUDY 5

Study 5 has two main objectives. The first goal is to generalize the anticipating-future-variety effect to a nonfood consumption domain: music. Using music clips as consumption outcomes also helped us rule out the perceived scarcity alternative explanation because, unlike food, music recordings are unlikely to be perceived as scarce, as they do not disappear after consumption.

The second goal is to provide further direct support for our proposed anticipatory thoughts mechanism through moderation. We manipulate whether participants are asked to generate and focus on positive or negative anticipatory thoughts about the future consumption experience. If, as we propose, participants in the future-variety condition are less satiated from the current consumption because they naturally anticipate the future consumption experience and generate positive anticipatory thoughts, then explicitly asking them to generate positive anticipatory thoughts about the future outcome (something they naturally do) would not influence their current satiation rate. However, asking them to generate negative anticipatory thoughts about the future outcome (something they naturally do not do) would increase their satiation rate. Similarly, asking participants in the future-same condition to generate negative anticipatory thoughts about the future outcome would not influence their current satiation rate, whereas asking them to generate positive anticipatory thoughts about the future outcome would slow their satiation. Although participants in the future-same condition do not naturally think about their future consumption, as we have shown in Studies 2 and 4, after consuming the current outcome repeatedly, they naturally generate negative thoughts about that current consumption. Because the current outcome is identical to the future outcome, explicitly asking the participants to generate negative thoughts about the future outcome would have little effect.

The preceding analysis suggests that the anticipating-future-variety effect on satiation documented in the previous four studies will naturally occur but will be weaker

when participants are instructed to generate and focus on either positive or negative anticipatory thoughts about the future outcome. We test this prediction in Study 5.

Method

Three hundred thirty students from a large U.S. university participated in this study in exchange for course credit. The stimuli used were two music clips. Each clip consisted of the full chorus of a song and lasted 26 to 27 seconds.

Stimuli. To select the appropriate music clips, we tried to select two music clips that were similarly attractive, different enough to induce perceptions of variety, and approximately the same duration. We first looked at the Top 10 songs on Spotify for the first week of February 2015. We a priori decided to exclude two songs from consideration because of their explicit lyrics. We then created music clips of the choruses of the remaining eight songs. The durations of the music clips ranged from 15 to 37 seconds. Next, we pretested the music clips among a group of 40 undergraduate students from the same population who did not participate in the main study. Participants listened to the eight music clips sequentially (order of the songs randomized) and indicated their liking for each clip on a 1 to 100 scale (for the titles, Spotify rankings, durations, and likability ratings for the music clips, see Table W2 in the Web Appendix). Drawing on our selection criteria, we chose two songs: "Uptown Funk" by Bruno Mars (Song A) and "I'm Not the Only One" by Sam Smith (Song B). These music clips received the highest likability ratings, were roughly the same duration (Song A: 27 seconds; Song B: 26 seconds), and belonged to different music genres, which was key for an effective manipulation of variety. We verified that the two songs were similarly liked ($M_{Song\ A}$ = 68.58 vs. $M_{Song\ B}$ = 72.85; F(1, 38) = 1.24, $p > .25$).

Design and procedure. Participants were told they would be evaluating music clips. Half of the participants were randomly assigned to listen to Song A, and the other half to Song B. Participants were told that they would be listening to the assigned music clip 15 times and that they would be reporting their enjoyment of the song after listening to it each time. The enjoyment measure was: "How much did you enjoy listening to the music clip you just heard?" (0 = "not at all," and 100 = "very much").

The design was a 2 (future consumption: variety or same) between-subjects × 3 (anticipatory thoughts: no induced thoughts, positive thoughts, or negative thoughts) between-subjects × 15 (consumption episodes: 1–15) within-subject mixed design. At the beginning of the study, participants were told that after listening to the assigned song 15 times, they would complete another task that involved listening to either the same song (future-same condition) or a different song (future-variety condition) 15 times. Immediately afterward, the anticipatory thoughts manipulation was administered. Participants in the positive (negative) anticipatory thoughts condition were asked to write down three things that they really liked (did not like) about the song they would be listening to in the second task. Some examples of things they wrote were, "It's upbeat" and "It's catchy" for the "like" manipulation, or "No good lyrics" and "Makes me sleepy" for the "dislike" intervention. Each time before participants listened to the assigned current song, they were asked to recall the three things they had written down at the beginning of the task. Participants in the no-induced-anticipatory-thoughts condition were not given any special instructions.

After listening to the assigned song 15 times, participants answered several postconsumption questions. Specifically, they were asked to indicate whether they were familiar with each of the two songs prior to participating in the study and how scarce they perceived the assigned song to be. We included this measure with the intention of further ruling out the alternative explanation that the effect was driven by scarcity perceptions (Sevilla and Redden 2014). Finally, participants answered several demographics questions including gender; none of these played any role in the results and are not discussed further.

Results

Preliminary results. We confirmed that whether the song in the current consumption task was Song A or Song B had no significant effects (Fs < 1); thus, we collapsed the data for this factor across conditions. Because we ran the study among a homogeneous undergraduate population and the song clips used were derived from popular songs from Spotify, we expected the vast majority of the participants to be familiar with these songs. As we expected, almost all of the participants indicated they were familiar with both songs (Song A: 92.4%, Song B: 91.2%). There was no significant difference between the two proportions (z < 1, n.s.), indicating that both songs were similarly well known.

We ran a 2 (future consumption) × 3 (anticipatory thoughts) ANOVA on the scarcity perception rating. Consistent with our prediction, we found no significant effect of future consumption (F(1, 324) < 1, n.s.), anticipatory thoughts (F(2, 324) < 1, n.s.), or the interaction between the two factors (F(2, 324) < 1, n.s.).

Satiation. We ran a 2 (future consumption) × 3 (anticipatory thoughts) × 15 (consumption episodes) ANOVA on participants' enjoyment ratings, with consumption episodes as a repeated measure. We found a main effect of consumption episode (F(2, 323) = 99.36, $p < .0001$), such that participants enjoyed the music clip more after listening to it the 1st time (M_{1st} = 72.32) than after the 15th time (M_{15th} = 47.24). There were also main effects of future consumption (F(1, 323) = 11.23, $p < .001$) and induced anticipatory thoughts (F(2, 323) = 7.41, $p < .001$). Furthermore, the slope of satiation was different across the future-variety and future-same conditions (F(1, 323) = 7.29, $p < .01$): participants in both conditions enjoyed the song similarly after listening to it the 1st time ($M_{variety}$ = 73.38 vs. M_{same} = 71.19; F(1, 328) < 1, n.s.); however, after the 15th time, participants in the future-variety condition enjoyed the song significantly more ($M_{variety}$ = 53.38) than did those in the future-same condition (M_{same} = 40.71; F(1, 328) = 13.41, $p < .001$). There was also a significant interaction between consumption episode and induced anticipatory thoughts (F(2, 323) = 5.83, $p < .005$): the anticipatory-thoughts manipulation did not significantly influence participants' initial enjoyment of the song ($M_{positive}$ = 73.04 vs. $M_{negative}$ = 69.80 vs. $M_{neutral}$ = 74.05; F(2, 323) = 1.20, $p > .30$); however, after listening to it the 15th time, participants in the positive-anticipatory-thoughts condition enjoyed it more ($M_{positive}$ = 55.53) than did those in the

negative-anticipatory-thoughts group ($M_{negative}$ = 37.01; $F(2, 327) = 20.02$, $p < .0001$), with the no-induced-anticipatory-thoughts condition ($M_{neutral}$ = 48.29) somewhere in between.

More importantly, the predicted three-way interaction was significant ($F(2, 323) = 4.74$, $p < .01$). In Figure 3, Panels A–C, we show the nature of this interaction. We explored the pattern of the three-way interaction by examining the moderating effect of future consumption on the satiation rate in each anticipatory-thoughts condition separately. As in Study 4, and for clarity, we estimated the amount of satiation by calculating the decrease in enjoyment from the first to the last enjoyment rating. We expected to find a different amount of satiation as a function of future consumption condition in the no-induced-anticipatory-thoughts group but not in either the positive-anticipatory-thoughts or the negative-anticipatory-thoughts conditions. Our findings were consistent with this prediction.

We found a significant effect of future consumption on satiation in the no-induced-anticipatory-thoughts condition ($F(1, 108) = 13.96$, $p < .0001$), but not in either the positive-anticipatory-thoughts condition ($F(1, 108) = 1.52$, $p = .22$) or the negative-anticipatory-thoughts condition ($F(1, 108) < 1$, n.s.). Only in the no-induced-anticipatory-thoughts condition was satiation lower in the future-variety condition ($M_{variety}$ = 15.92) than in the future-same condition (M_{same} = 35.61). Satiation was similar regardless of future consumption in either the positive-anticipatory-thoughts condition ($M_{variety}$ = 13.86 vs. M_{same} = 21.15) or the negative-anticipatory-thoughts condition ($M_{variety}$ = 30.94 vs. M_{same} = 34.64).

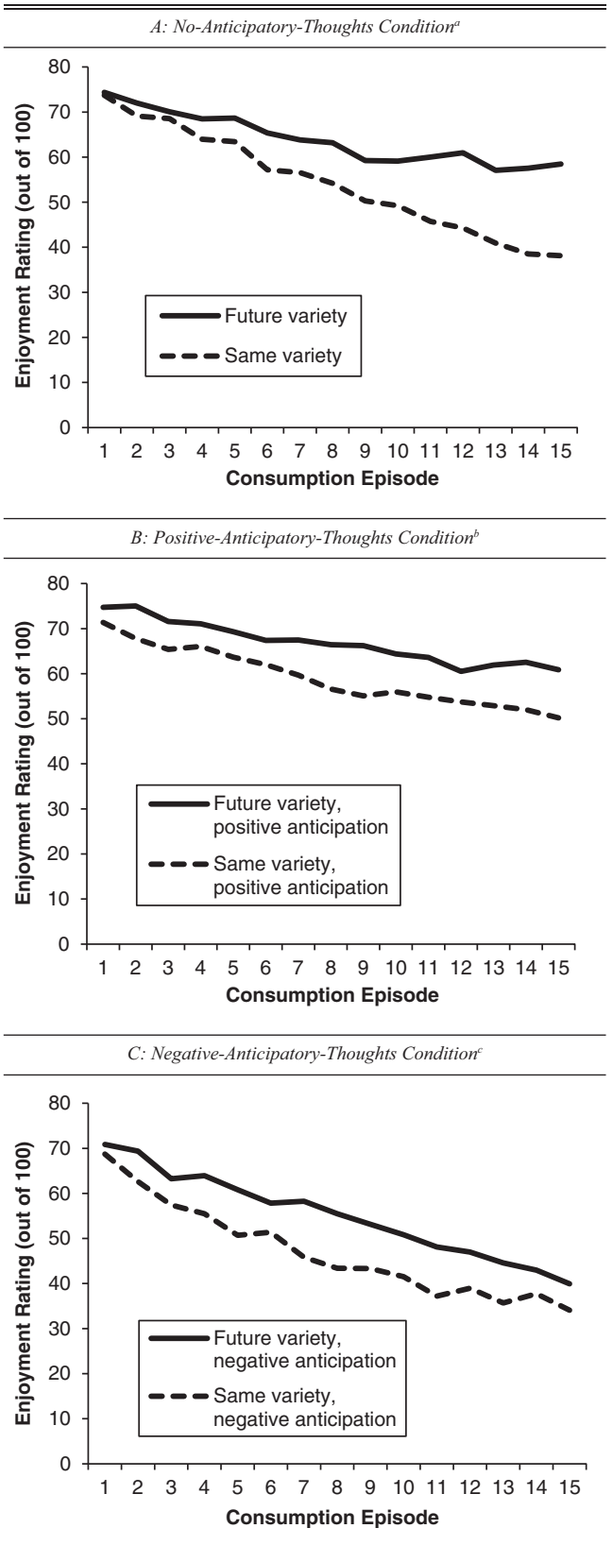
Follow-up contrast analyses comparing the satiation rate across conditions found that, in the future-variety condition, satiation was similar between the positive-anticipatory-thoughts and no-induced-anticipatory-thoughts conditions ($t(167) < 1$, n.s.), and that in the future-same condition, satiation was similar between the negative-anticipatory-thoughts and no-induced-anticipatory-thoughts conditions ($t(159) < 1$, n.s.). In addition, satiation was similar between the positive-anticipatory-thoughts/future-same and no-induced-anticipatory-thoughts/future-variety conditions ($t(167) < 1$, n.s.) as well as between the negative-anticipatory-thoughts/future-variety condition and no-induced-anticipatory-thoughts/future-same conditions ($t(159) < 1$, n.s.).

Discussion

The findings of Study 5 show that the anticipating-future-variety effect is not limited to food consumption settings but can be generalized to nonfood settings. These results also help rule out the alternative explanation positing that future variety decreases satiation rate by increasing the perceived scarcity of the current consumption outcome.

The findings of Study 5 provide more direct support for our proposed mechanism that anticipating variety in future consumption naturally triggers positive and pleasant thoughts about the future consumption experience, which in turn helps alleviate satiation of the current consumption experience. The basic effect of future variety on current satiation is replicated when participants are not explicitly asked to generate anticipatory thoughts about their future consumption outcome but disappear when they are asked to generate and focus on either positive or negative anticipatory thoughts about the future consumption outcome. Asking participants to generate

Figure 3
RATE OF SATIATION ACROSS CONDITIONS (STUDY 5)



[a]Significantly different at $p < .0001$.
[b]Not significantly different ($p > .65$).
[c]Not significantly different ($p > .60$).

positive anticipatory thoughts leads to a larger decrease in satiation rate in the future-same condition than in the future-variety condition, thus weakening the basic effect of future variety. Similarly, asking participants to generate negative anticipatory thoughts leads to a larger increase in satiation in the future-variety condition than in the future-same condition, thus weakening the basic effect of future variety. These findings are consistent with our assumption that participants in the future-variety condition naturally engage in anticipation of the future consumption experience and generate positive anticipatory thoughts. Although participants in the future-same condition do not naturally anticipate their future consumption, as we showed in Studies 2 and 4, they are likely to naturally generate negative thoughts about the current consumption outcome after consuming it repeatedly. Because, for these participants, the future outcome is identical to the current one, asking them to generate negative thoughts about the future outcome has little effect on their current satiation rate.

GENERAL DISCUSSION

Satiation is often an impediment to people's enjoyment of their favorite products (Coombs and Avrunin 1977). Finding ways to reduce it can therefore be beneficial for people's well-being (see, e.g., Raghunathan and Irwin 2001; Redden 2008). In this article, we introduce a new way to mitigate the occurrence of satiation. Five studies demonstrate that anticipating a varied consumption experience in the future can reduce satiation from a current related episode. That is, we show that variety not only can reduce satiation when physically incorporated into a present experience (Ratner, Kahn, and Kahneman 1999; Rolls et al. 1981) but also may delay the occurrence of satiation when people anticipate consuming it in the future. This suggests that anticipating variety slows down people's psychological "satiation clock," which helps them enjoy a present experience more.

We test our proposition through five experiments involving different designs, dependent measures, and product classes. The results of the experiments rigorously establish that anticipating future variety reduces satiation from current experiences and that the effect is a general phenomenon because it holds across several product categories. We find the effect in both food consumption contexts (jelly beans; Studies 1–4) and nonfood settings (music; Study 5). The effect is robust to different ways of measuring satiation: (1) periodic measures of enjoyment during the consumption episode (Studies 1 and 5); (2) a single enjoyment rating at the end of a consumption experience (Study 2); (3) two enjoyment ratings, one at the beginning and one at the end of the consumption episode (Studies 3 and 4); (4) retrospective overall evaluations of enjoyment and satisfaction (Study 4); and (5) behavioral intension measures such as desire for more (Redden 2008; Rolls et al. 1981) and willingness to pay (Study 2). We find the effect even when we carefully pretest the consumption outcomes to ensure that the current and the varied future outcome in the future-variety condition do not differ in attractiveness (Studies 2 and 5).

Across the five experiments, we examine the mechanism underlying the phenomenon by identifying the boundary conditions, ruling out alternative accounts, and providing direct evidence for our proposed mechanism. We identify two boundary conditions: we find that anticipating the consumption of a varied future outcome does not reduce current satiation (1) if the current and the future outcomes belong to different product categories (Study 2) and (2) when the future outcome is considerably less attractive than the current outcome (Study 4).

We also rule out multiple potential alternative explanations. One alternative explanation posits that mere exposure to variety would be sufficient to reduce current satiation, and that the action of anticipating future variety is not necessary. We rule this out in Study 2 by including a condition in which participants are merely exposed to variety but not told that they would be consuming it in the future. We show that the satiation rate in the "mere exposure" condition is similar to that in the future-same group but significantly faster than that in the future-variety condition. This general mere-exposure-to-variety account also suggests that the mechanism underlying our effect is identical to that underlying the previous finding that recalling past variety helps recovery from satiation (e.g., Galak, Redden, and Kruger 2009). We rule out this explanation for our results in Study 4 by creating a corresponding past-variety condition for each of the future-variety groups and showing that although anticipating future variety reduces current satiation, recalling past variety does not. This finding by no means suggests that the recalling-past-variety effect is not robust; rather, it highlights the notion that there are different mechanisms underlying the anticipating-future-variety effect and the recalling-past-variety effect. We believe that the two effects apply to different situations: recalling past variety speeds up recovery from satiation that has already occurred, whereas anticipating future variety slows down present satiation.

Another alternative explanation for our results would suggest that anticipating consuming a varied outcome in the future reduces current satiation because participants would not be able to consume the current outcome in the future. In other words, the effect occurs because of increases in perceived scarcity of the current outcome. We rule out this alternative explanation in several ways: (1) by measuring perceived scarcity of the current outcome and showing that it does not differ across conditions (Studies 3–5); (2) by replicating the basic effect when the future-variety condition gives participants the option to continue to consume in the future the item they are currently consuming (Study 2); and (3) by replicating the basic effect when the consumption outcome (music) is not one that disappears after consumption.

Finally, we provide direct evidence for our proposed anticipatory-thoughts-about-future-consumption mechanism by which future variety influences current satiation. In Studies 2 and 4, we show that the extent to which participants naturally anticipate the future consumption outcome mediates the effect of future variety on current satiation. Moreover, in Study 5 we find that when participants' anticipatory thoughts associated with the future consumption outcome are manipulated, the anticipating-future-variety effect disappears. Consistent with our theory, asking participants to generate and focus on positive anticipatory thoughts about their future outcome has little effect on the satiation rate in the future-variety condition but reduces that

in the future-same group, whereas asking participants to generate and focus on negative anticipatory thoughts about their future outcome has little effect on the satiation rate in the future-same condition but increases that in the future-variety condition.

The present findings advance our understanding of the phenomenon of satiation and how to mitigate it. We identify another psychological factor that helps slow down the occurrence of satiation—namely, the variety of the outcome that people expect they will consume in the future. We provide further evidence that thinking about variety helps mitigate satiation and show that the type of variety people think about alleviates this phenomenon in different ways: whereas thinking about the previously experienced variety helps speed up the recovery from satiation after it has already occurred (Galak, Redden, and Kruger 2009), thinking about future variety proactively slows down the occurrence of satiation in the present.

Our findings also contribute to our knowledge of the effects that anticipating future experiences may have on current psychological well-being. Although previous research has suggested that, in some cases, people may prefer improving consumption sequences (e.g., Loewenstein and Prelec 1993) because these enable them to savor an upcoming, more desirable experience (e.g., Loewenstein 1987), no prior research has shown that anticipating future consumption experiences could increase people's current enjoyment and well-being by decreasing the rate at which satiation of current consumption experiences occurs. Moreover, previous studies on anticipation have focused on situations in which a future consumption outcome is either more or less desirable than the current one; in contrast, we show that even when the future outcome is as desirable as the current one, if it is different and thus provides variety, anticipating its consumption may enhance people's enjoyment of the current outcome through reduced satiation.

Future Research Directions

Across all our studies, we show that positive anticipatory thoughts associated with future consumption experiences reduce satiation in the present. We do not find any contrast effects, even when the future outcome is differentially attractive from the current one (Study 4). Because previous research on the utility from anticipation has suggested that such contrast effects could happen (e.g., Loewenstein 1987), more research is needed to examine whether and when anticipating future variety could generate contrast effects on current satiation and overall enjoyment. Although we have reasons to believe that in the situations studied herein, the consumption (direct) effect of anticipation is stronger than its contrast effect, it is possible that in other situations, the contrast effect may be stronger. For example, participants in our studies had no control over the duration of the current consumption experience or the number of current consumption outcomes they would consume; they were instructed to eat a predetermined number of the same flavor of jelly beans or listen to the same music clip for a predetermined number of times. When people have control over the duration of a current consumption experience and, consequently, over when the future consumption experience begins (e.g., consumers can choose how soon to replace their old car, children can choose how long to play with a toy before switching to a different toy), anticipating a varied or better future outcome may exert a contrast effect, speeding up satiation and decreasing their overall enjoyment from the current outcome.

Additional research is also needed to further address the question of the degree to which future variety is most effective at reducing current satiation. On the one hand, the future outcome should be sufficiently different from the current one to create a sense of variety; the greater the future variety, the more effective anticipating future variety should be at reducing current satiation. On the other hand, as we showed in Study 2, when the future consumption outcome was too different from the current consumption outcome, such that they belonged to two different product categories, anticipating consuming future variety failed to reduce current satiation. The question, then, would be where the tipping point is. For example, suppose the current outcome is jelly beans. The varied future outcome can range from jelly beans with different flavors, to other food items (e.g., M&M's, chocolate, ice cream), to nonfood items that entail different sensory experiences (e.g., music, movies, games). Further research on how different dimensions of future variety influence current satiation may yield useful insights.

Managerial Implications

Our findings should be useful for enhancing consumer well-being. We show that an easy way to help people enjoy their present experiences more and better cope with repetition is to have them anticipate varied future experiences. While it is evident that people frequently desire variety in the present (e.g., Ratner, Kahn, and Kahneman 1999; Simonson 1990), we find that merely knowing that they will enjoy future variety in a given consumption domain can help them enjoy their current (repetitive) experiences more. For example, this can be implemented when consumers plan vacations months in advance. This would cue that they will be doing something different in the future and may enable them to enjoy the routine present more.

Finally, we found that the effect of anticipating future variety on satiation extends to behavioral measures such as willingness to pay for an outcome or willingness to consume it again. This suggests that making consumers aware that they may consume variety in the future might generate higher revenue by increasing consumption of current outcomes through reduced satiation. Given that consumers' enjoyment of and satisfaction with a product or service influences the likelihood that they will purchase the product or service from the same company again, companies ought to ensure not only that they constantly introduce variety and improvement in their product offerings but also that they inform their customers in advance of the future variety they can expect to consume.

REFERENCES

Bentham, J. (1789), "A Utilitarian View," in *Animal Rights and Human Obligations*. London: Athlone, 25–26.

Brickman, Philip and Donald T. Campbell (1971), "Hedonic Relativism and Planning the Good Society," in *Adaptation-Level Theory*, Mortimer H. Appley, ed. New York: Academic Press, 287–302.

Coombs, Clyde H. and George S. Avrunin (1977), "Single-Peaked Functions and the Theory of Preference," *Psychological Review*, 84(2), 216–30.

Elster, Jon and George Loewenstein (1992), "Utility from Memory and Anticipation," in Choice over Time, George Loewenstein and Jon Elster, eds. New York: Russell Sage Foundation, 213–34.

Frederick, Shane and George Loewenstein (2008), "Conflicting Motives in Evaluations of Sequences," *Journal of Risk and Uncertainty*, 37 (2/3), 221–35.

Galak, Jeff, Joseph P. Redden, and Justin Kruger (2009), "Variety Amnesia: Recalling Past Variety Can Accelerate Recovery from Satiation," *Journal of Consumer Research*, 36 (6), 575–84.

Herrnstein, Richard J. and Drazen Prelec (1991), "Melioration: A Theory of Distributed Choice," *Journal of Economic Perspectives*, 5 (3), 139–56.

Jevons, Herbert S. (1905), *Essays on Economics*. New York: Macmillan.

Kahn, Barbara E. and Brian Wansink (2004), "The Influence of Assortment Structure on Perceived Variety and Consumption Quantities," *Journal of Consumer Research*, 30 (4), 519–33.

Loewenstein, George (1987), "Anticipation and the Valuation of Delayed Consumption," *Economic Journal*, 97 (387), 666–84.

——— and Drazen Prelec (1992), "Anomalies in Intertemporal Choice: Evidence and an Interpretation," *Quarterly Journal of Economics*, 107 (2), 573–97.

——— and ——— (1993), "Preferences for Sequences of Outcomes," *Psychological Review*, 100 (1), 91–108.

Mook, Douglas G. and Marianne C. Votaw (1992), "How Important Is Hedonism? Reasons Given by College Students for Ending a Meal," *Appetite*, 18 (1), 69–75.

Nelson, Leif D. and Tom Meyvis (2008), "Interrupted Consumption: Adaptation and the Disruption of Hedonic Experience," *Journal of Marketing Research*, 45 (December), 654–64.

Preacher, Kristopher J. and Andrew F. Hayes (2008), "Asymptotic and Resampling Strategies for Assessing and Comparing Indirect Effects in Multiple Mediator Models," *Behavior Research Methods*, 40 (3), 879–91.

Prelec, Drazen and George Loewenstein (1998), "The Red and the Black: Mental Accounting of Savings and Debt," *Marketing Science*, 17 (1), 4–28.

Raghunathan, Rajagopal and Julie R. Irwin (2001), "Walking the Hedonic Product Treadmill: Default Contrast and Mood-Based Assimilation in Judgments of Predicted Happiness with a Target Product," *Journal of Consumer Research*, 28 (3), 355–68.

Ratner, Rebecca K., Barbara E. Kahn, and Daniel Kahneman (1999), "Choosing Less-Preferred Experiences for the Sake of Variety," *Journal of Consumer Research*, 26 (1), 1–15.

Read, Daniel and George Loewenstein (1995), "Diversification Bias: Explaining the Discrepancy in Variety Seeking Between Combined and Separated Choices," *Journal of Experimental Psychology. Applied*, 1 (1), 34–49.

Redden, Joseph P. (2008), "Reducing Satiation: The Role of Categorization Level," *Journal of Consumer Research*, 34 (5), 624–34.

——— and Jeff Galak (2013), "The Subjective Sense of Feeling Satiated," *Journal of Experimental Psychology. General*, 142 (1), 209–17.

Rolls, Barbara J., E.A. Rowe, E.T. Rolls, Breda Kingston, Angela Megson, and Rachel Gunary (1981), "Variety in a Meal Enhances Food Intake in Man," *Physiology & Behavior*, 26 (2), 215–21.

———, P.M. van Duijvenvoorde, and Edmund T. Rolls (1984), "Pleasantness Changes and Food Intake in a Varied Four-Course Meal," *Appetite*, 5 (4), 337–48.

Rozin, Paul, Sara Dow, Morris Moscovitch, and Suparna Rajaram (1998), "What Causes Humans to Begin and End a Meal? A Role for Memory for What Has Been Eaten, as Evidenced by a Study of Multiple Meal Eating in Amnesic Patients," *Psychological Science*, 9 (5), 392–96.

Sevilla, Julio and Joseph P. Redden (2014), "Limited Availability Reduces the Rate of Satiation," *Journal of Marketing Research*, 51 (April), 205–17.

Simonson, Itamar (1990), "The Effect of Purchase Quantity and Timing on Variety-Seeking Behavior," *Journal of Marketing Research*, 27 (May), 150–62.