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Too Impatient to Smell the Roses: Exposure to Fast Food Impedes Happiness

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Abstract

We tested whether exposure to the ultimate symbols of an impatience culture—fast food—undermines people's ability to experience happiness from savoring pleasurable experiences. Study 1 found that the concentration of fast-food restaurants in individuals' neighborhoods predicted their tendencies to savor. Study 2 revealed that exposure to fast-food primes impeded participants' ability to derive happiness from pictures of natural beauty. Study 3 showed that priming fast food undermined positive emotional responses to a beautiful melody by inducing greater impatience, measured by both subjective perception of time passage and self-reports of impatience experienced during the music. Together, these studies show that as pervasive symbols of impatience, fast food can inhibit savoring, producing negative consequences for how we experience pleasurable events.

Keywords

fast food, happiness, savoring, impatience

Technological innovation offering convenience and time efficiency has brought remarkable changes in how we spend time. While snail mail used to take weeks or months, simultaneous global communication is the new norm. Information processing is on a similar asymptotic trajectory approaching instantaneity: Sifting through piles of paper has largely been replaced by online search engines that deliver almost instant hits. This societal shift toward the instantaneous, and the acceleration of activities with the explicit intention of saving time, is infused into our very sustenance, from TV dinners and vending machines to fast food and drive-throughs.

These technologies have made our lives more convenient and our time usage more efficient. They represent a broader set of values that emphasize the importance of time and extols its efficient use. Presumably, working more efficiently and spending less time on chores should provide greater opportunities for leisure time and enhance subjective well-being. Yet while the United States has indeed experienced an appreciable increase in leisure time over the course of the past half-century (Aguiar & Hurst, 2007; Robinson & Godbey, 1997), there has been no concomitant improvement in aggregate happiness during the same period (Di Tella & MacCulloch, 2008; Layard, 2005). In this article, we argue that cultural symbols that tout time efficiency—fast food—influence how we experience the passage of time and events by instigating a generalized sense of impatience, which hampers peoples' ability to fully experience and enjoy pleasurable moments in life—"smelling the roses," so to speak. Specifically, we examine whether exposure to fast food, arguably the ultimate icons of time efficiency, can have the unintended consequence of impairing people's ability to savor, or enhance and fully attend to positive experiences (Bryant, 1989, 2003), by inducing a state of impatience. In three studies, we provide the first empirical explorations of the psychological processes and consequences of brands that embody time efficiency on people's experience of happiness.

Fast Food, Impatience, and Happiness

We live in a society that extols time efficiency. At least in Western society, time is conceptualized as linear, nonrecoverable, and thus a limited and valuable resource that may be spent, saved, or wasted (Graham, 1981). Consequently, our social activities have been increasingly structured around an efficiency principle: The less time consumed by a product, service, or activity, the better. Of special importance in the spread of time efficiency concerns is the proliferation of fast food. Traditionally, eating involves food preparation and communal dinning, making it a collective, ritualistic event where communities bond rather than merely intake nutrition. The introduction and popularization of fast food, however, shifted our habits toward eating efficiently—filling the stomach as quickly as possible in order to move on to other, "more important" matters (Schlosser, 2001).

First introduced with hotdog and hamburger stands in the early 1900s, fast food has arguably become the ultimate symbol

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of time efficiency, and its influence extends far beyond restaurants and eating habits. In *The McDonalization of Society*, Ritzer (1993) details the widespread influence that the fast-food industry's efficiency principle—to deliver services or products as quickly as possible—has had on the restructuring of organizations and society beyond the industry itself. For example, rather than waiting for furniture to be built, upholstered, and delivered, Ikea offers customers furniture they can take home and use that day. While in many instances a rational argument can be made for minimizing time spent, concern for time efficiency has also infused areas in which we might not normally expect it to be a predominant criterion. In journalism, for example, what is often called ''McNugget news,'' sound bites that are only seconds long and paragraph-length articles in newspapers such as *The USA Today*, makes contextualizing a story impossible. Or consider minute-long bedtime stories that ''help'' parents shorten quality time with their children (Honoré, 2004). It seems as though our modern society embraces time efficiency as a value in and of itself: People seek efficiency even when it is counterproductive. Wanting to get from point A to B as quickly as possible might be efficient if you're late for a meeting, but it's impatient when you're strolling in the park. Thus, there is a fine line between being time efficient and being impatient, and fast food may contribute to a generalized sense of impatience.

Indeed, scholars from different disciplines have observed that as people obtain more time-saving technologies they become more, rather than less, impatient (Levine, 1997; Robinson & Godbey, 1999). Furthermore, mere exposure to fast-food brands that extol temporal efficiency can make people behave impatiently, whether that exposure occurs in the laboratory or in the natural environment. Compared to controls, participants exposed to fast-food symbols exhibit accelerated reading speeds while under no time constraint and increased preferences for time-saving product features relative to other product dimensions (Zhong & DeVoe, 2010). Moreover, those people who live in environments with higher concentrations of fast-food restaurants are more financially impatient and less likely to save their money as a result (DeVoe, House, & Zhong, 2013). Thus, it appears that reminders of fast food—an icon of time efficiency—leads people to make choices that reflect greater impatience.

The current investigation expands the previous work by examining how activation of impatience inherent in fast food can undermine people's ability to derive happiness from small enjoyable experiences. Scholarly interest in these smaller pleasures has resulted from the recognition that they contribute important variance to individuals' emotional well-being (Csikszentmihalyi & Hunter, 2003; Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004) and constitute some of the most salient instances of happiness in people's lives (Aaker, Rudd, & Mogilner, 2011; Dunn, Gilbert, & Wilson, 2011; Mogilner, 2010). Importantly, to derive happiness from small pleasures people often need to stay in the moment and prolong the subjective experience of savoring (Bryant, Smart, & King, 2005; Quoidbach, 2009; Tugade & Fredrickson, 2007). Thus, factors that distract people from savoring can undermine happiness. For example, financial wealth, which enables greater access to more expensive luxuries, has been shown to undermine the likelihood of savoring these smaller pleasures (e.g., eating a piece of chocolate) because we mistakenly believe they pale in comparison (Quoidbach, Dunn, Petrides, & Mikolajczak, 2010). This is different from saying that wealth directly dampens joy by increasing negative rumination, fault-finding, and suppression of positive emotions (Nelis, Quoidbach, Hansenne, & Mikolajczak, 2011).

The impatience activated by exposure to fast food runs counter to mindfully staying in the moment to savor. Savoring requires the cessation of multitasking and full attention on the here and now (Bryant, 1989, 2003), whereas impatience is the desire to expedite activities and the arrival of the future. Therefore, we contend that the impatience which fast food induces may impede people's ability to fully appreciate pleasant events, thereby reducing the happiness that normally results. Similar to the effect of financial wealth, we do not expect that fast food will dampen positive emotions directly, only that it reduces the tendency to savor pleasant experiences, which indirectly impairs happiness. Thus, rather than examining how individual differences in wealth may decrease savoring, we explore the impact of ubiquitous cultural symbols in the socioecological environment on the propensity to savor pleasant experiences.

We report three studies that explore the consequences of exposure to fast food on people's propensity to experience happiness from pleasurable experiences. We utilize both naturally occurring variations in the prevalence of these symbols in the environment and manipulate exposure to these brands by presenting identical food and drink in ready-to-go packaging versus ceramic tableware. Together, these studies seek to establish that fast-food brands impede people's savoring of pleasurable events because of the impatience they instigate.

Study 1

As an initial test of whether fast food may impact savoring of pleasant experiences, we examined naturally occurring neighborhood variation in fast food's prevalence as a predictor of the propensity to savor. If it is the case that fast-food symbols automatically activate a sense of impatience, then chronic exposure to these symbols in our daily lives should interfere with individuals' tendencies to savor. Critically, the more concentrated these primes are within the socioecology, the greater their potential for behavioral impact due to recency and frequency effects (Oishi & Graham, 2010). Thus, to test our hypothesis that fast food interferes with savoring enjoyable experiences, we adopted the methodology of DeVoe, House, and Zhong (2013) and conducted a survey of individual differences in the propensity to savor to see whether these could be predicted by neighborhood differences in fast-food restaurant concentrations.

Procedure and Materials

Two hundred eighty native English speakers (166 female) who reported residing in Internet-protocol-validated U.S. ZIP codes

Table 1. Means, Standard Deviations, and Intercorrelations in Study 1.

Variables	*M*	*SD*	1	2	3	4	5	6
Fast-food restaurant ratio	1.35	.98						
Individual income	2.75	1.76	.10					
Age	36.56	14.02	−.01	.15*				
ZIP code population	31203	18099	.07	.11	−.01			
ZIP code median income	57083	22706	−.14*	.18**	.09	−.03		
Savoring tendency	11.61	6.24	−.14*	−.18**	.00	−.03	−.01	
Dampening tendency	3.88	3.75	.01	.05	−.16**	.02	−.02	−.06

Note. *SD* = standard deviation.
*$p < .05$. **$p < .01$.

were recruited from Amazon.com's Mechanical Turk (MTurk) to complete an online survey in exchange for US$1. Participants completed the positive emotion portion of the Emotion Regulation Profile-Revised, a validated instrument with subscales measuring individuals' tendencies to savor ($\alpha = .86$) and dampen ($\alpha = .77$) emotional responses to enjoyable experiences generally (Nelis et al., 2011). Participants also indicated their income on an 8-point scale (1 = *under US$15,000*; 8 = *over US$150,000*), basic demographic information, and the ZIP code where they resided. Participants' ZIP codes were then used to match each participant with neighborhood-level data provided by the U.S. Census Bureau. Specifically, the concentration of fast-food restaurants relative to full-service restaurants in each ZIP code was calculated using the most recently available data from the *Economic Census* (2007) by dividing the number of establishments listed under the North American Industry Classification System code for fast-food restaurants (722211) by the number of full-service restaurants (722110).[1] This ratio measure of fast-food restaurants relative to full-service restaurants is consistent with prior socioecological research on the impact of fast-food concentrations on obesity (e.g., Mehta & Chang, 2008) and financial impatience (DeVoe et al., 2013) and also helps to isolate the unique component of fast food from other food service–related stimuli in the environment, which is important because appetitive stimuli in general tend to induce impatience (Li, 2008). In addition, the population of each ZIP code was obtained from the 2010 Census, and an estimate of the median income in each ZIP code was taken from the 2007–2011 American Community Survey estimate period in order to control for aspects of the neighborhood that might be related to both fast-food restaurant prevalence and the subjective emotional experience of its inhabitants, such as urbanicity and wealth. Age was also controlled for because of its association with impatience (Green, Myerson, & Ostaszewski, 1999) and changes in savoring across the life span (Bryant & Veroff, 2006).

Results and Discussion

Table 1 displays the means, standard deviations (*SD*s), and intercorrelations of the variables in Study 1. Consistent with the findings of Quoidbach, Dunn, Petrides, and Mikolajczak (2010), greater income was negatively correlated with savoring but unrelated to dampening tendencies. Critical for our hypothesis, greater fast-food concentration in one's neighborhood exhibited a parallel relationship. To test the robustness of these associations, we conducted regression analyses in which the log of both predictor variables were entered in Step 1, and variables controlling for participants' age and neighborhood population and median income were entered in Step 2.[2] In this analysis, both neighborhood fast-food restaurant concentration, $\beta = -.14$, $t(262) = -2.25$, $p = .025$, and participants' income, $\beta = -.15$, $t(262) = -2.41$, $p = .017$, emerged as significant predictors that remained significant in the presence of control variables, $\beta = -.14$, $t(259) = -2.22$, $p = .027$, $\beta = -.15$, $t(259) = -2.31$, $p = .022$, respectively.

Of course, these results must be interpreted cautiously because cross-sectional surveys are vulnerable to unmeasured confounding variables and do not speak directly to causal direction. Nevertheless, these results are consistent with our theorizing and previous research, and our use of individual and neighborhood control variables is suggestive of a fairly robust association worthy of further investigation. Having found this intriguing relationship between the opportunity for chronic exposure to fast-food symbols in people's everyday lives and their tendency to savor pleasant events in general, we sought to address these limitations with experiments that pitted impatience induced by exposure to fast-food symbols against "simple pleasures [that] make some degree of savoring virtually unavoidable," such as images of a "vivid, multicolored sunset, [and] the melodious resonance of a perfectly executed sweet aria" (Bryant & Veroff, 2006, p. 54).

Study 2

The essence of fast food is not what you eat (e.g., tacos, pizza, etc.), but how you eat it. This is meaningfully conveyed by fast-food packaging, which facilitates temporal efficiency because there are no dishes to wash, no waiter to wait for, and portable containers make meals easier to eat while multitasking (i.e., in the car or at your desk). Thus, we examined whether the same food served in different packaging (i.e., ready-to-go branded packaging vs. ceramic tableware) would interfere with people's enjoyment of pleasant stimuli, thereby controlling for potential emotional effects of calorie-dense food (Macht, Gerer, & Ellgring, 2003) as well as any effect that appetitive stimuli may have

on action goals (Geyskens, Dewitte, Pandelaere, & Warlop, 2008) or impatience (Li, 2008; Van den Bergh et al., 2008), since participants in all conditions were exposed to images of the same food. To provide participants with a savorable experience, we showed them beautiful images of nature capable of evoking happiness (Hartmann & Apaolaza-Ibáñez, 2010).[3]

To determine whether fast food dampens happiness directly or by interfering with savoring of pleasant experiences, Study 2 utilized a condition in which participants reported their state of happiness after the priming stimuli without first seeing beautiful photos. This design is analogous to the survey measures of dampening and savoring. Given that we found in Study 1 that fast-food exposure was not related to tendencies to dampen positive emotions, we hypothesize that participants primed with fast-food symbols will only be less happy than controls when provided beautiful photos to savor, but that when there are no photos, the priming stimuli will not cause any differences in happiness. Therefore, Study 2 enabled us to assess whether fast food specifically interferes with savoring.

Participants and Design

Two hundred fifty-seven participants (170 female), with an average age of 34.35 ($SD = 12.01$), were recruited from a nation-wide U.S. database maintained by a leading business school in exchange for a US$5 gift certificate to an online retailer. Participants were randomly assigned in a 2 (fast food vs. control) $\times$ 2 (pictures vs. no pictures) factorial design.

Procedure and Materials

Participants were told that they were going to engage in multiple, unrelated tasks. We primed fast food by asking participants to rate pictures for their advertising suitability on a 7-point scale. Intermixed with three neutral pictures shown in all conditions were two that primed fast food: In the fast-food condition, participants saw a picture of a cup of coffee and a picture of an exposed burger and fries, both in standard McDonald's packaging; whereas those in the control condition saw pictures of the exact same exposed food and drink with ceramic tableware. McDonald's packaging was chosen because of that brand's typicality for fast food (Liu, Gijsbrechts, & Smeesters, 2009). Next, half of the participants immediately rated their happiness on a 7-point scale while the other half were presented with 10 photographs of scenic natural beauty before rating their happiness.

Results and Discussion

To determine whether exposure to fast food had a direct dampening effect on participants' state happiness, or whether this effect occurs by interfering with participants' savoring of the pleasant stimuli, we conducted a 2 (fast food vs. control) $\times$ 2 (pictures vs. no pictures) analysis of covariance on participants' self-reported state happiness.

As expected, participants randomly assigned to view the nature pictures rated themselves as happier ($M = 5.16$, $SD = 1.29$) than participants who did not view the nature pictures ($M = 4.43$, $SD = 1.57$), $F(3, 253) = 16.00$, $p < .001$, $\eta_p^2 = .059$. There was no main effect of priming manipulation, $F(3, 253) < 1$; but the predicted interaction was significant, $F(3, 253) = 7.56$, $p = .006$, $\eta_p^2 = .029$.

To probe the nature of the interaction, we conducted follow-up t-tests. Among participants who did not have the opportunity to view the nature pictures, those in the fast-food condition exhibited a nonsignificant trend to be slightly happier ($M = 4.64$, $SD = 1.51$) than those in the control condition ($M = 4.25$, $SD = 1.62$), $t(107) = -1.28$, $p = .20$, $\eta_p^2 = .015$. Among participants who had a chance to view the nature pictures, however, those in the fast-food condition reported a significantly lower state happiness ($M = 4.86$, $SD = 1.34$) than those in the control condition ($M = 5.45$, $SD = 1\ .18$), $t(146) = 2.83$, $p = .005$, $\eta_p^2 = .052$. This reveals that fast food does not have a direct negative effect on happiness but rather impairs individuals' savoring of pleasant stimuli.

Study 3

To explore the mechanism underlying the deleterious effect of fast food on individuals' ability to savor, we employed DeVoe and House's (2012) paradigm to capture participants' experience of impatience. Specifically, we presented participants with a harmonious opera aria and measured their emotional reaction as well as their subjective perception of the length of this clip. Given that people who are impatient are likely to feel that time passes slowly (Fleisig, Ginzburg, & Zakay, 2009), and that the subjective passage of time is a metacognitive cue which people use to judge their enjoyment of an experience (Sackett, Meyvis, Nelson, Converse, & Sackett, 2010), we expected that those primed with fast food may perceive the duration of elapsed time during pleasant experiences as subjectively longer and therefore less enjoyable. Additionally, we included a self-report measure of impatience experienced during the song (DeVoe & House, 2012). We intended to demonstrate that it is this greater impatience caused by mere exposure to fast-food symbols that mediates the causal relationship between fast food and happiness derived from pleasant experiences.

Participants and Design

A total of 122 (71 female) U.S. residents were recruited from MTurk to fill out an online survey on consumer preferences in exchange for US$1. The sample's average age was 31.38 ($SD = 10.06$). Participants were randomly assigned to the same fast-food manipulation as in the previous experiment (fast food vs. control).

Procedure and Materials

Instead of using beautiful images as in the previous experiment, Experiment 2 featured a beautiful aria. To standardize participants' experience to the greatest extent possible, instructions

were given to wear headphones, view the survey in full-screen browser mode, and put away all mechanical distracters (cell phones, MP3 players, watches, etc.). The latter two instructions were specified to surreptitiously minimize the salience of time-keeping devices, which could interfere with subjective time perception. Two participants reported that they did not comply with at least one of these instructions and were therefore excluded from the analyses. Furthermore, 10 participants who reported that they had experienced some technical problem with the music were also excluded from the analyses.

Following the same manipulation from Study 2, participants were told that the researchers wanted to wipe the slate clean between tasks in the study by playing them an enjoyable piece of music. The music that played was the first 86 s of "The Flower Duet" from the opera *Lakmé*, which was immediately followed by a series of visual analog scales (VAS).

On the first 3 VAS items, the measure of positive emotional response to the music used by DeVoe and House (2012) was administered to participants (i.e., how happy the participant was after listening to the music, how much the participant enjoyed the music, and how beautiful the participant had found it), which exhibited good reliability ($\alpha = .85$). Next, participants responded to two distinct measures of impatience. Given that all participants listened to the music for the exact same amount of time, we measured the subjective passage of time during the song by adapting a measure developed by Zauberman, Kim, Malkoc, and Bettman (2009). Participants rated "how long do you feel you spent listening to the song you just heard" on a VAS anchored between "not a very long time" and "a very long time." The rationale for this measure is based on the empirical link between impatience and the perception of time (Fleisig et al., 2009). It is thought that impatience increases attention paid to signals of time's passage and that encoding more of these signals makes an interval seem subjectively longer (Zakay & Block, 1997). Thus, to the extent that participants' experienced greater impatience during the musical episode, they should also feel as though the music lasted longer. To achieve a more precise estimate of how long the time spent listening to the music *felt*, we also asked participants' for an objective estimate of how much time had elapsed during the music so that we could analyze subjective duration relative to these estimates.

The second measure of impatience consisted of six questions, designed to tap the experience of impatience while listening to the auditory stimuli, developed by DeVoe and House (2012). Specifically, participants responded to 6 VAS items that measured the degree to which they felt impatient while listening to the music (e.g., I was impatient for the music to end so I could finish the survey), which exhibited good reliability ($\alpha = .89$). Finally, demographics were collected and participants indicated whether they experienced technical difficulties hearing the music.

Results and Discussion

Consistent with the previous experiment, participants in the fast-food condition reported marginally significant decreased positive emotional responses to the music ($M = 68.24$, $SD = 24.71$) compared to those in the control condition ($M = 76.15$, $SD = 21.30$), $\beta = -.17$, $t(108) = -1.80$, $p = .075$, $\eta_p^2 = .029$. As well, fast-food primes caused participants to report that the music felt as though it had lasted for a longer time ($M = 41.00$, $SD = 22.32$), relative to control primes ($M = 32.31$, $SD = 22.32$), holding constant participants' estimate of the music's objective duration, $\beta = .19$, $t(102) = 1.99$, $p = .049$, $\eta_p^2 = .038$.[4] This suggests that participants primed with fast food experienced the same period of time as passing more slowly than did controls. The prediction that being primed with fast food increases impatience was also supported by the self-report measure of impatience. Participants reported significantly greater impatience in the fast-food condition ($M = 33.82$, $SD = 24.71$) compared to controls ($M = 24.90$, $SD = 21.30$), $\beta = .19$, $t(108) = 2.02$, $p = .046$, $\eta_p^2 = .036$. The correlation between the self-report measure of impatience and the subjective time passage measure was highly significant, $r(102) = .42$, $p < .001$, and comparable in size to the relationship found previously between impatience and time perception (Fleisig et al., 2009), supporting its construct validity.

To test whether impatience had a mediating role in explaining the effect of fast food on positive emotional responses to the music, we conducted two bootstrapped indirect effect tests as per Preacher and Hayes (2008), one for each indicator of impatience. Based on bootstrapped samples of 10,000, the bias corrected 95% confidence interval for the indirect effect of fast-food primes on positive emotional response through subjective passage of time did not cross zero [−6.33, −0.01], indicating significant mediation. Consistent with this, the same test revealed a significant indirect effect through self-reported impatience [−14.09, −0.44], although when both mediators were entered into the same model only self-reported impatience remained significant. Together with the fairly high correlation between the two mediators, this suggests that the subjective passage of time and self-reported impatience are distinct measures of the same underlying construct of impatience. These findings provide compelling evidence that being exposed to symbols of the culture of impatience can impair people's ability to derive happiness from encounters with pleasurable things in life because they become too impatient to "smell the roses."

General Discussion

The ability to enjoy pleasurable moments, however small they may seem, is critical to people's well-being. Although people predict that major life circumstances are what will make them happy (Gilbert, 2006), in reality they explain little of the variance in happiness (Lyubomirsky, Sheldon, & Schkade, 2005). Income, for instance, appears to have a surprisingly modest impact on happiness (Aknin, Norton, & Dunn, 2009), likely because it undermines the likelihood of savoring the smaller pleasures in life (Quoidbach et al., 2010). Frequent small pleasures appear to be a more reliable path to happiness because they are less susceptible to adaptation and diminishing marginal utility (Dunn et al., 2011), and the tendency to savor

such positive experiences is positively related to overall happiness (Bryant, 2003; Quoidbach et al., 2010). Thus, undermining people's ability to derive pleasure from everyday joys could exert a significant long-term negative effect on people's experienced happiness. It is ironic that technologies designed to improve well-being by minimizing time spent on mundane chores may ultimately undermine the surplus leisure time they permit. By instigating a sense of impatience, these technologies may prevent people from savoring the enjoyable moments life offers serendipitously.

Across three studies, we find that the exposure to fast-food symbols reduced people's tendency to savor, which indirectly impaired their ability to derive happiness from pleasurable stimuli, rather than directly dampening their joy. Study 1 relied on neighborhood differences in fast-food restaurant concentrations as a measure of natural variation in chronic exposure to fast-food symbols and found that individuals residing in neighborhoods with a high concentration of fast-food restaurants were less likely to savor pleasurable experiences; fast-food concentration, however, had no impact on their tendency to dampen emotional experience in general. In Study 2, we manipulated exposure to fast-food symbols by packaging the same food in disposable fast-food containers or ceramic tableware. Afterward, participants either did or did not view a series of beautiful nature photos before reporting their happiness. We found that fast-food exposure reduced self-reported happiness only when participants had the opportunity to savor images of natural beauty. The observation that fast food did not affect happiness in the absence of these pleasurable stimuli is consistent with findings of Study 1 that fast-food symbols reduce savoring but do not dampen happiness. Finally, in Study 3, we used a beautiful melody to test the "smelling the roses" hypothesis and found that participants exposed to fast-food symbols reported lower enjoyment of the music. Further, they also reported greater impatience, and that the music clip felt longer, compared to those in the control condition; and a mediational analysis suggested that it was this experience of impatience that undermined their savoring of the song.

Nevertheless, caution in interpreting these results is warranted, given the limitations of each study. As mentioned earlier, cross-sectional survey designs are vulnerable to spurious confounds, which can almost never be completely ruled out despite best efforts to control for the most theoretically prominent alternative explanations. Moreover, such designs are incapable of establishing the causal direction of observed associations. To address these concerns, we employed experimental designs that provided enhanced control over extraneous influences on savoring behavior and hence likely explains the relatively larger effect sizes observed in Studies 2 and 3 compared to the small association observed in the field data. Neither experiment is without limitations, however. For one thing, although natural beauty and melodious music offer distinct pleasant experiences, they represent a small sampling from the universe of earthly pleasures. It is certainly true that happiness does not solely depend on savoring—there are probably whole spectrums of experience that provide instant gratification without requiring attentive, prolonged savoring, and how fast-food symbols may affect those experiences requires future research. For example, it is possible that while fast-food symbols may lessen savoring of watching a beautiful sunset, it may actually boost the enjoyment of getting a "quick high" from alcohol or drugs. Using taste as another example, while fully enjoying a piece of good chocolate requires savoring, scoffing handfuls of "junk food" probably does not. Thus, our analysis is limited to relatively small and subtle joys in life that are just like roses on the roadside—although seemingly insignificant, they offer small but frequent instances of happiness to those willing to take the time to smell them, which is important because frequency of positive affect is a stronger predictor of overall happiness than is intensity (Diener, Sandvik, & Pavot, 1991). Future research is necessary to theoretically delineate the dimensions of positive experience with which fast food is less likely to interfere as well as whether the effects on savoring extend to other naturally occurring symbols of time efficiency.

Given the prevalence of fast-food symbols in our everyday environment, it is critical to better understand their influence. As a ubiquitous symbol of an impatient culture, fast food not only impacts people's physical health but may also shape their experience of happiness in unexpected ways.

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Notes

1. Fifteen participants reported ZIP codes that were not included in the Economic Census.
2. Both main predictor variables exhibited a significant positive skew in their distributions (both skewness tests, $zs > 5$, $ps < .001$). In order to normalize this skew and reduce the effect of outliers, we log transformed both variables. Without these transformation, the effect of fast-food restaurant concentrations was marginal, $\beta = -.12$, $t(262) = -1.95$, $p = .052$, while the effect of income remained significant, $\beta = -.16$, $t(262) = -2.56$, $p = .011$. Similarly, logging other covariates in the model did substantively change these results.
3. Examples of the photos include a snow-capped mountain silhouetted by a vibrant sunset and a baobab tree framed by a rainbow. All images are available upon request from the first author.
4. The main effect without objective time estimate as a covariate was $\beta = .19$, $t(103) = 1.91$, $p = .059$, $\eta_p^2 = .019$. Pairwise exclusion of participants that left items blank was conducted for these analyses.

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