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Six studies demonstrate that interrupting a consumption experience can make pleasant experiences more enjoyable and unpleasant experiences more irritating, even though consumers avoid breaks in pleasant experiences and choose breaks in unpleasant experiences. Across a variety of hedonic experiences (e.g., listening to noises or songs, sitting in a massage chair), the authors observe that breaks disrupt hedonic adaptation and, as a result, intensify the subsequent experience.

Keywords: adaptation, affective forecasting, well-being, consumption, hedonic experiences

Interrupted Consumption: Disrupting Adaptation to Hedonic Experiences

Imagine a patient who is about to undergo a painful physical therapy session and is given the option to take a short break in the middle of the session. Would the patient accept the offer and break up the session, or would he or she prefer to endure the entire session without interruption? Regardless of the patient's preference, would the break make the session more painful or less painful? Now, imagine a customer who is about to enjoy a relaxing massage and can choose to take a short break in the middle. Would the customer choose to break up the massage or to maintain the continuous experience, and regardless of his or her preference, would the disruption make the massage more enjoyable or less enjoyable?

As these two scenarios illustrate, consumers often have the opportunity to choose between interrupted or continuous experiences. This article investigates the consequences of taking breaks in affective experiences (i.e., when should consumers take a break?), as well as consumers' expectations for these consequences (i.e., when do consumers take a break?). For example, would consumers enjoy the latest three-hour Bollywood musical more if they watched it in a theater that offers a brief intermission or in a theater that shows it without interruption—and which theater would they choose? Alternatively, if a person's sweetheart coerces him or her into attending a Goth-metal performance, would the experience be less painful if the band takes a break in the middle of its set or performs without interruption—and which band would he or she end up choosing?

THE PRESCRIPTIVE PERSPECTIVE: HOW DO BREAKS INFLUENCE HEDONIC EXPERIENCES?

This study addresses two independent theoretical questions: How does hedonic disruption actually influence experience, and how do consumers think hedonic disruption will influence experience? Most important, we examine how breaking up an experience actually affects consumers' enjoyment of this experience. To assess this effect, we rely on two critical assumptions: (1) that consumers adapt to many experiences and (2) that breaks disrupt this adaptation process. Together, these assumptions imply that breaks will intensify affective experiences. Therefore, we propose that within certain boundaries, consumers should insert breaks in positive experiences but not in negative experiences.

To understand how breaks influence consumers' affective experiences, we first need to consider how subjective experiences change over time. Over the course of an experience, affective intensity can either increase (i.e., sensitization) or decrease (i.e., adaptation). Whereas sensitization often occurs for complex stimuli (e.g., high-quality wines), in many domains, adaptation seems to be the norm (for a review, see Frederick and Loewenstein 1999). People adapt surprisingly quickly and completely to a variety of positive and negative experiences, ranging from the buzz of a computer hard drive to extreme windfalls or calamities. Previous research has shown that people adapt to repeated consumption of their preferred ice cream (Kahneman and Snell 1990), increases in income (Easterlin 1995), failure to

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achieve tenure (Gilbert et al. 1998), solitary confinement (Suedfeld et al. 1982), and, to some extent, even extreme and life-altering events, such as winning the lottery or becoming a paraplegic after a severe car accident (Brickman, Coates, and Janoff-Bulman 1978).

In each of these situations, the subjective intensity of the experience decreases over time as a result of either basic sensory processes (e.g., sensory-specific satiety) or complex psychological mechanisms (e.g., coping). In addition to the overall intensity reduction, adaptation creates a downward trend in positive experiences and an upward trend in negative experiences, patterns that strongly influence overall subjective intensity (Ariely and Zauberman 2000, 2003). We argue that inserting a break in the experience will disrupt these adaptive processes. Because adaptation results from prolonged exposure, disrupting exposure should reduce adaptation. Furthermore, this reduction in adaptation will intensify the experience following the break (relative to an uninterrupted experience). In short, consumption experiences that are characterized by adaptation will become more intense when breaks are inserted.

Although this reasoning suggests that people should break up pleasant experiences but not unpleasant ones, this recommendation necessarily requires some caveats. For example, if an unpleasant experience is sufficiently aversive (i.e., very intense or very prolonged), the experience may need to be interrupted to provide people with the opportunity to recover. Similarly, some positive events are primarily enjoyed in the gestalt (e.g., films, sports events) and may be best experienced continuously. We further discuss these potential boundaries of our predictions in the "General Discussion" section.

THE DESCRIPTIVE PERSPECTIVE: CONSUMERS' FORECASTS AND PREFERENCES

Another objective is to examine whether and when people prefer to break up hedonic experiences. Whether consumers choose to insert a break in an affective experience depends on their beliefs about how the break will affect their enjoyment. As prior research has shown, people are quite poor at predicting how their enjoyment of an experience will evolve over time (Loewenstein and Schkade 1999; Wilson and Gilbert 2003). In particular, people have trouble predicting hedonic adaptation. Although people show substantial variation in intuitions about adaptation or sensitization to different stimuli (Kahneman and Snell 1990), in general, they tend to underestimate adaptation (Loewenstein and Frederick 1997). Indeed, people are more likely to predict sensitization rather than adaptation for ongoing, continuous experiences (e.g., loud noises, a lasting headache), exactly the type of stimuli that we study herein (Kahneman and Snell 1990; Snell, Gibbs, and Varey 1995). Similarly, people often overestimate the lasting influence of an event on their overall happiness (i.e., the impact bias; Gilbert et al. 1998). For example, assistant professors tend to overestimate the effect of the tenure decision on their future happiness (Gilbert et al. 1998), whereas prisoners tend to underestimate adaptation to solitary confinement (Suedfeld et al. 1982).

In summary, people do not hold a uniform belief in adaptation, and some evidence indicates that people may even intuit sensitization rather than adaptation. Therefore, we predict that consumers will fail to anticipate their adaptation to many consumption experiences and thus will not expect breaks to intensify these experiences by disrupting adaptation. Instead, we propose that consumers will rely on the simple semantic intuition that a broken-up experience is a weakened experience. That is, consumers will rely on a simple decision rule: Stopping a good experience is bad, and stopping a bad experience is good.[1] As a result, they will prefer to break up negative experiences but not positive experiences. In other words, we argue that consumers' preferences will neither maximize their enjoyment nor minimize their suffering. As such, the traditional adage of the service industry, "the customer is always right," may not apply to decisions about structuring pleasant or unpleasant experiences, for which the customer may turn out to be wrong.

If these predictions hold, managers may need to structure service experiences differently depending on whether they aim to maximize actual customer enjoyment or initial consumer appeal. If the therapists in the aforementioned scenarios want to enhance their customers' enjoyment, the physical therapist should not offer the opportunity to take a break (because the customers would choose it but feel worse), whereas the massage therapist should build the break into the massage schedule (because the customers would not choose it but feel better if they did). However, if a movie theater wants to increase its appeal to moviegoers, it should screen the movie without intermission (even though the audience would enjoy the movie less).

The studies we report empirically test our conjecture that breaks tend to intensify hedonic experiences, even when consumers hold the opposite intuition. However, before examining the actual impact of breaks on hedonic experiences, we examined people's intuitions about this impact by presenting them with some hypothetical choices and vignettes. A preference for breaking up negative experiences but not positive experiences would support our assumption that people tend to regard broken-up experiences as weakened experiences.

In a first study, undergraduate students (n = 28) imagined that they would be separated from their romantic partner for a long period but could choose any two consecutive weeks during this period to be together with their partner. Participants strongly preferred weeks in the middle of the period rather than weeks in the beginning or at the end, indicating a preference for breaking up this negative experience (86%; $\chi^2 = 14.29$, $p < .001$). Furthermore, when participants were subsequently asked to forecast the experience over time, fewer than one-third showed the pattern of decreasing intensity consistent with adaptation. Thus, most participants failed to anticipate adaptation to this negative experience, and most wanted to disrupt it (for methodological details for all studies in the article, see the Web Appendix at http://www.marketingpower.com/jmrdec08).

In a second study, the opposite pattern emerged for a positive experience. Undergraduate students (n = 39) imagined a summer working in the south of France, which afforded four days of vacation in Saint-Tropez. A signifi-

[1]Note that this simple heuristic assumes some degree of myopia on the part of the decision maker. We assume that the decision maker will put greater emphasis on the start of the break (stopping the experience) than on what happens after the break (restarting the experience).

cant majority (90%; $\chi^2 = 24.64$, $p < .001$) preferred to take the four days of vacation consecutively, indicating a reluctance to break up this positive experience.

A third investigation compared similar positive and negative experiences. Two groups of students (n = 138) considered the prospect of either a pleasant massage or a session of painful physical therapy and reported whether they would prefer a break in this experience. As we expected, whereas most participants wanted a break in the physical therapy (63%, or 42 of 67; $\chi^2 = 4.31$, $p = .038$), most avoided a break in the massage (28%, or 20 of 71; $\chi^2 = 13.54$, $p < .001$).

A final investigation asked a group of undergraduate students (n = 119) whether they would want a break in a series of positive (e.g., listening to pleasant music) and negative (e.g., smelling a nasty odor) experiences. As Table 1 shows, for all but two of the experiences, participants preferred continuous positive experiences and disrupted negative experiences. Furthermore, participants who did not expect to adapt to positive experiences showed a stronger reluctance to break up these experiences than those who did expect adaptation ($F(1, 116) = 5.15$, $p = .025$; based on an index of the seven positive events). Conversely, participants who did not expect to adapt to negative experiences showed a stronger preference for breaking up these experiences than those who did expect adaptation ($F(1, 116) = 22.21$, $p < .001$; based on an index of the eight negative events).

These scenario studies support our prediction that people want to break up negative experiences but do not want to break up positive experiences. There may be many reasons for this pattern of preferences, including the anticipated disruption of sensitization (rather than adaptation), an overestimation of the need for coping resources, or myopic preference for stopping unpleasant experiences and continuing pleasant ones. Our objective is not to distinguish between these different reasons (and we expect that there are many) but rather to document these intuitions so that they can be compared with the actual effect of disrupting hedonic experiences. This actual effect of hedonic disruption is the focus of the remainder of this article.

Table 1
PREFERENCE FOR BREAKING UP EACH OF 15 DIFFERENT EXPERIENCES

Type of Experience	*Percentage Preferring a Break*
Positive Experiences	
First-class flight	5% (6 of 119)***
Listening to great music	8% (10 of 119)***
Going on vacation	14% (17 of 119)***
Receiving a foot massage	15% (18 of 119)***
Watching a movie	16% (19 of 119)***
Eating ice cream	29% (35 of 119)***
Generally pleasant experience	14% (17 of 119)***
Negative Experiences	
Waiting in line	36% (43 of 119)**
Dentist visit	40% (47 of 119)*
Irritating noise	69% (82 of 119)***
Holding hand in cold water	74% (88 of 119)***
Introductory marketing class	75% (89 of 119)***
Smelling a nasty odor	76% (90 of 119)***
Painful headache	79% (94 of 119)***
Generally unpleasant experience	72% (86 of 119)***

*$p < .05$.
**$p < .01$.
***$p < .001$.
Notes: For each experience, we compare the observed proportions to 50%.

We propose that people adapt to a wide variety of experiences and that breaks disrupt this adaptation process and thus keep the experience at a high level of intensity. We begin by directly testing our assumption that inserting a break intensifies the subsequent experience (Studies 1 and 2). This should increase both the irritation with a negative stimulus and the enjoyment of a positive stimulus. We then attempt to rule out hedonic contrast effects as an alternative to the adaptation-disruption hypothesis (Studies 3 and 4). Finally, we track participants' ongoing experience to better understand the mechanism by which breaks affect overall enjoyment and irritation (Studies 5 and 6).

STUDY 1: DISRUPTION OF ADAPTATION TO A NEGATIVE EXPERIENCE

The scenario studies we described previously indicate that people often prefer to break up negative but not positive experiences. However, we argue that breaks disrupt people's adaptation to the experience and therefore make positive experiences more enjoyable and negative experiences more unpleasant. We first test this for a negative experience:

H_1: Inserting a short break in an unpleasant experience disrupts adaptation and makes the experience following the break more aversive, though people expect that it will become less aversive.

In three between-subjects conditions, we measured participants' irritation with a five-second fragment of a noise that was presented in isolation, at the end of a longer experience, or immediately following a break.

Method

One hundred forty undergraduate students participated in a study examining the evaluation of auditory stimuli. Participants were seated at a computer workstation, asked to put on headphones, and told that they would be listening to a brief sound clip of a vacuum cleaner. There were three groups of participants. The first group listened to only 5 seconds of the vacuum cleaner; the second group listened to 40 seconds; and the final group listened to 40 seconds, followed by a 5-second break, and then another 5 seconds of the vacuum cleaner. Immediately after this experience, participants answered a question about the last 5 seconds of the stimulus. To avoid possible scaling effects, we asked participants to compare the vacuum cleaner noise to another irritating noise. Therefore, we presented participants with a 5-second sample of a drilling noise, after which they reported their preference between the two sounds on a 201-point sliding scale from –100 ("definitely prefer the vacuum") to +100 ("definitely prefer the drill"). Higher numbers reflect a more aversive vacuum noise experience.

Because it was important that participants understood and complied with all elements of the procedure, we took a priori measures to eliminate those who did not by using a previously validated procedure that was modified for this task (Oppenheimer, Meyvis, and Davidenko 2006; see also Simmons and Nelson 2006, Study 12). At the end of the

session, participants briefly read about the importance of following instructions and were asked to ignore a scale on the screen and instead click on a red square at the top of the screen. Although most participants clicked on the red square, 14 people instead clicked on the unlabeled scale and were removed from subsequent analyses.

Results and Discussion

Forecast. In addition to this procedure, we asked a separate group of participants (n = 40) to make predictions about the effects of the manipulation. All the participants listened to a 5-second sample of the vacuum cleaner, rated it on a 76-point scale of irritation (0 = "a little irritating," and 75 = "incredibly irritating"), and then estimated how irritating they would find the same sample in each of the other two conditions. Consistent with our initial studies, participants expected sensitization rather than adaptation: They expected the 40-second experience to increase the irritation relative to the 5-second sample (M = 42.07 versus 26.07; t(39) = 4.86, $p < .001$). Furthermore, participants had some belief that the 5-second break would reduce their irritation with the stimulus relative to the continuous experience (M = 42.07 versus 35.92; t(39) = 1.68, $p = .10$). In summary, participants forecasted that the stimulus would become more irritating with prolonged exposure and that this increase would be partially mitigated by adding a break. These forecasts are the direct opposite of our hypothesis, which we test next.

Experience. We expected that people would adapt to the noise and therefore find it less aversive after 40 seconds than after only 5 seconds. Furthermore, we hypothesized that breaking up the experience would disrupt this adaptation process and reestablish the aversiveness of the stimulus. We tested this prediction with a planned contrast, comparing evaluations by participants in the 40-second experience with evaluations in the two remaining conditions. This proved to be a reliable contrast because people experiencing the noise continuously for 40 seconds judged the last 5 seconds to be less aversive (M = –39.49) than people experiencing just the first 5 seconds (M = –14.98) or people experiencing the 5 seconds after a break (M = –16.44; t(123) = 2.10, $p = .039$; see Figure 1). These results indicate that though people want to break up negative experiences, this is not always a wise decision. Whereas listening to the noise for an extended period made the noise less aversive, inserting a break made the noise just as aversive as it had been initially, suggesting that the break disrupted the adaptation process.

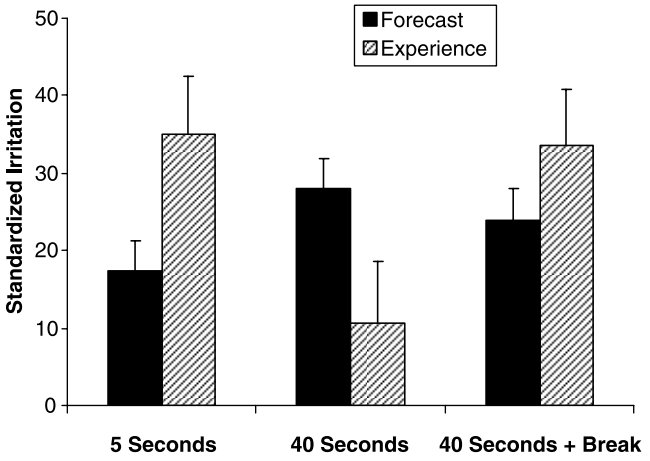
STUDY 2: DISRUPTION OF ADAPTATION TO A POSITIVE EXPERIENCE

Study 1 demonstrated that breaks can disrupt adaptation to a negative stimulus. In Study 2, we shift to the positive domain and examine whether disruption of adaptation can make a positive experience more pleasant:

H_2: Inserting a short break in a positive experience makes the experience more pleasant, though people expect that it will become less pleasant.

In this study, participants either experienced an uninterrupted massage or had the middle part of the massage replaced with a 20-second break. In addition, whereas participants in Study 1 were only asked to rate the last 5 seconds of the experience, participants in this study provided evaluations of the entire experience, thus enabling us to draw more general inferences about the normative implications of inserting the break. We predicted that though people would prefer not to interrupt the massage, inserting a break in the middle of the experience would actually enhance their enjoyment of the massage.

Figure 1
BREAKING UP AN IRRITATING NOISE DISRUPTS ADAPTATION, MAKING THE EXPERIENCE MORE AVERSIVE



Notes: Study 1 examines irritation as predicted by forecasters and as reported by experiencers (with standard error). Both measures have been rescaled to a 50-point scale; higher numbers reflect more irritation. Given the difference in the initial measures, absolute differences in ratings for forecasters versus experiencers cannot be interpreted.

Method

Forty-nine undergraduate students were seated at a computer in a chair outfitted with a massage cushion and were told that they would be testing the cushion. They first rated a 5-second sample of the massage and then answered five questions about their general massage chair preferences. Most were irrelevant filler questions ("Do you prefer heating in a massage cushion?"), but one question asked participants whether they would prefer a continuous massage or a massage with a brief break in the middle. Participants were then randomly assigned to either the break or the continuous condition. In the continuous condition, participants learned that they would experience the massage continuously for 3 minutes, whereas those in the break condition learned that they would be experiencing 80 seconds of massage, 20 seconds of nothing, and then 80 more seconds of massage. The experimenter then started the massage cushion and turned the cushion off and on according to the condition.

Note that in the break condition, we replace 20 seconds of massage with a 20-second break. Alternatively, we could have inserted the 20-second break in the experience, thus lengthening the entire experience. Each of these strategies represents a conceptual trade-off. The replacement strategy keeps the total length of the experience constant across conditions but results in a shorter massage in the break condition, whereas an insertion strategy would have kept the

length of the massage constant but would have resulted in a longer total experience in the break condition. To ensure that our results are not limited by the specific strategy used for inserting the break, we use different procedures across experiments, relying on the replacement strategy in two studies (Studies 2 and 5) and the insertion strategy in the remaining studies (Studies 3, 4, and 6). Furthermore, in Studies 3 and 4, we also add a break before the stimulus in the continuous condition, thus ensuring that the total experience is of equal length in both conditions. The results are consistent across the different studies and across all instantiations of the manipulation.

After the massage, participants first reported how much they had enjoyed the experience using a 9-point scale (1 = "not pleasant," and 9 = "extremely pleasant"). Next, they used a 201-point sliding scale to compare their experience to listening to 3 minutes of their favorite song (–100 = "definitely prefer the massage," and +100 = "definitely prefer the song"). This preference measure was added to avoid scaling effects. Participants then reported how much they would be willing to pay to repeat the experience and how much they would be willing to pay to buy the massage cushion. Finally, participants completed the same screening measure that was used in Study 1.

Results and Discussion

Forecast. Before conducting any analyses, we removed 8 participants who incorrectly responded to the screening measure, leaving us with a sample of 41. We then examined participants' choices between continuous and interrupted massage experiences, which we measured after the 5-second sample but before the 3-minute experience. As we expected, most participants preferred the continuous experience (73%; $\chi^2 = 8.80$, $p = .003$). However, although people predicted that a break would lessen enjoyment, postexperience evaluations showed the exact opposite result.[2]

Experience. Compared with participants who experienced the continuous massage, those who had a break in their experience rated their experience as more pleasant (M = 7.05 versus 6.05; F(1, 37) = 4.59, $p = .039$), were less likely to prefer listening to their favorite song instead (M = 4.65 versus 32.33; F(1, 38) = 4.20, $p = .047$), were willing to pay more than twice as much to repeat the experience (M = $3.71 versus $1.27; F(1, 33) = 6.69, $p = .014$), and were willing to pay almost twice as much to purchase the massage cushion (M = $26.59 versus $14.41; F(1, 36) = 5.76, $p = .022$). Although most participants expected that inserting a break would detract from the massage, the results confirmed our hypothesis that the break does enhance the experience.

Why do breaks improve positive experiences and worsen negative experiences? Although we argue that breaks intensify experiences by disrupting adaptation, the effects may be due to hedonic contrast: The vacuum cleaner is unquestionably irritating, but it may seem even more irritating when contrasted with the welcome silence of the break. Consistent with this possibility, contrast effects play a large role in the reporting of subjective well-being (Tversky and Griffin 1991). Thus, although recent research has failed to find contrast effects in hedonic consumption (Novemsky and Ratner 2003), hedonic contrast effects are both plausible and intuitive. The next two studies clarify the role of contrast effects by systematically varying break valence in either a negative (Study 3) or a positive (Study 4) experience. If the intensifying effect of the break is driven by disruption of adaptation (rather than hedonic contrast), the effect should persist regardless of the valence of the break:

H_3: Disrupting a negative experience makes the experience more aversive, regardless of the valence of the disruption.

H_4: Disrupting a positive experience makes the experience more pleasant, regardless of the valence of the disruption.

STUDY 3: DIFFERENT BREAKS IN A NEGATIVE EXPERIENCE

Method

One hundred seventy-eight undergraduate students were randomly assigned to one of four conditions. Participants in the continuous condition listened to 20 seconds of silence, followed by 180 seconds of vacuum noise. In the remaining three conditions, participants also listened to 180 seconds of vacuum noise, but they were told that after 160 seconds, this experience would be interrupted for 20 seconds. This interruption consisted of 20 seconds of silence in the neutral-break condition, classical piano music (Glenn Gould performing Bach's Goldberg Variations) in the positive-break condition, and 20 seconds of a child practicing scales on a violin in the negative-break condition.

After the experience, all participants evaluated the overall experience on two measures; they rated their enjoyment of the overall experience (on a nine-point scale anchored by "not unpleasant" and "extremely unpleasant") and their relative preference between listening to the vacuum cleaner noise and listening to a drilling noise (on the 201-point scale used in the previous studies). Finally, participants completed the same screening measure used in the previous studies (which led to the elimination of 16 participants).

Results and Discussion

Forecast. A separate group of undergraduate students (n = 42) forecasted responses to the critical conditions of this experiment. Participants listened to a 5-second sample of the noise and then read descriptions of the continuous, positive-break, and neutral-break conditions.[3] Participants reported that adding a neutral break (M = 50.0) would not be any worse than the continuous experience (M = 50.9) but that the positive break would slightly improve the experience (M = 45.1; t(41) = 1.98, $p = .054$). With these forecasts in mind, we considered the actual impact of the different breaks on the experience.

Experience. Because the two evaluation measures were reliably correlated, we standardized and combined them into a single index (higher numbers indicated more irrita-

[2]We detected unusually high variance on these measures. Therefore, we removed outliers on each measure that were more than 2.5 standard deviations from the mean. As a result, there are slight variations in the degrees of freedom in each analysis. In addition, to control for preexperience differences in the enjoyment of the massage cushion, we included the 5-second sample rating as a covariate in our analysis.

[3]We did not ask about the negative-break condition, because this condition would not offer any additional insight into beliefs about disruption of adaptation (which both other break conditions test) or hedonic contrast (which the positive-break condition tests). The same logic applies to the forecasting study we report in Study 4.

tion). Because all three breaks (silence, piano music, and violin practice) should disrupt adaptation to the vacuum noise, the adaptation-disruption account predicts that the three break conditions will produce more negative judgments than the continuous experience. Consistent with H_3, a planned contrast confirmed that participants who had a continuous exposure to the vacuum cleaner rated the overall experience as less irritating than participants in the positive, neutral-, or negative-break conditions ($t(157) = 2.27$, $p = .025$; see Figure 2).

A break, regardless of its valence, worsened the overall experience, despite people's intuitions to the opposite. Because breaks of completely different valence produced similar effects, these findings cannot be explained by hedonic contrast. In Study 4, we use a similar design to investigate the influence of breaks in the positive domain.

STUDY 4: DIFFERENT BREAKS IN A POSITIVE EXPERIENCE

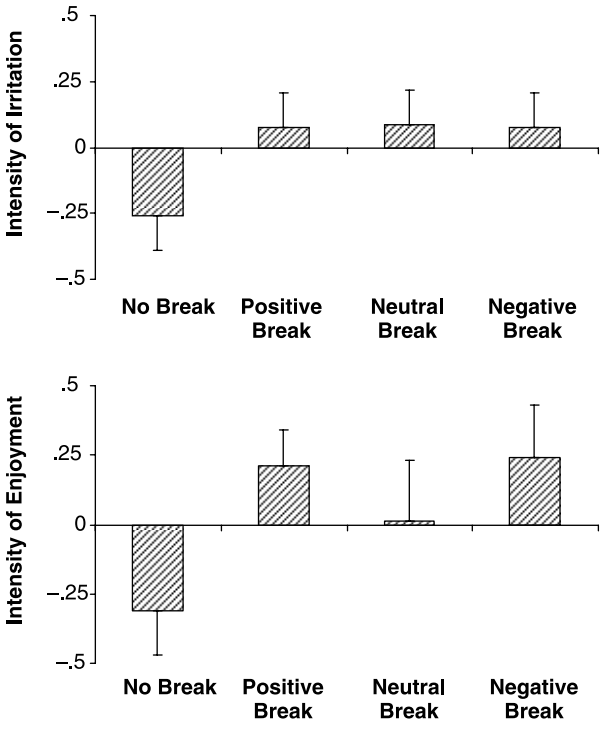
Method

Study 4 investigated possible contrast effects by inserting pleasant or aversive breaks in an enjoyable song. One hundred seventy-eight undergraduate students were assigned to one of four conditions: a positive-break, a negative-break, a neutral-break, and a continuous control condition. All participants first listened to a 5-second sample of the song, "Shin-Sekai (featuring Rino)" by DJ Krush, and rated their liking of the song on a 51-point scale from –25 ("strongly dislike") to 25 ("strongly like"). We chose this song, a Japanese rap song, because we assumed that it would be both unfamiliar and well liked by the participants. We were partly correct. Although students were not familiar with the song, many of them disliked it. Because our central objective was to study the disruption of a positive experience, we removed anyone who indicated that they disliked the song sample, which left us with a final sample of 109 people.

After rating the song sample, participants were told what experience to expect and started listening to the song. In the continuous condition, participants first experienced 20 seconds of silence, followed by 180 seconds of the complete song. In the remaining three conditions, participants also listened to the complete song, but after 160 seconds, the song was interrupted for 20 seconds. This interruption consisted of 20 seconds of silence in the neutral-break condition, 20 seconds from "Egyptian Reggae" (a 1978 Top 40 hit by Jonathan Richman and the Modern Lovers) in the positive-break condition, and 20 seconds of particularly irritating guitar feedback (sampled from the intro to "The Friend Catcher" by the Australian punk band The Birthday Party) in the negative-break condition.

After the experience, participants evaluated it on a nine-point scale (anchored by "not at all pleasant" and "very pleasant") and stated their relative preference between repeating the song and reading a magazine on a 201-point scale (higher numbers indicated greater preference for the magazine). Finally, participants completed the same screening measure used in the previous studies (which led to the elimination of 13 participants).

Figure 2
BREAKS INCREASE AFFECTIVE INTENSITY REGARDLESS OF BREAK VALENCE



Notes: Studies 3 and 4 examine retrospective evaluations of intensity. The top panel depicts standardized irritation ratings (from Study 3), and the bottom panel depicts standardized enjoyment ratings (from Study 4). Any disruption made both the positive and the negative stimuli more intense than the continuous experience.

Results and Discussion

Forecast. As in Study 3, we first asked a separate group of undergraduate students to predict how much they would like the song in the continuous condition, the neutral-break condition, and the negative-break condition. After listening to the same 5-second sample as participants in the main study, participants (n = 67; after we eliminated anyone who disliked the sample) predicted their enjoyment on a 51-point scale from –25 ("really dislike it") to 25 ("really like it"). Forecasters could not have been clearer in their predictions because they thought that they would like the song much more in the continuous condition (M = 7.94) than in either the neutral-break condition (M = –2.48; $t(66) = 6.32$, $p < .001$) or the negative-break condition (M = –8.76; $t(66) = 8.49$, $p < .001$). Although forecasters clearly predicted that a break would have a negative influence on their experience, these predictions turned out to be the exact opposite of our findings.

Experience. As in the previous study, the two measures were highly correlated, and therefore we standardized and combined them into a composite measure. We expected that any disruption would enhance the enjoyment of the song, regardless of the valence of the disruption. The corresponding planned contrast comparing the continuous condition with the other conditions confirmed our predictions. Participants who continuously listened to the song found the experience less enjoyable than those in the break conditions ($t(89) = 2.33$, $p = .024$; see Figure 2).

Studies 3 and 4 show that breaks, regardless of valence, intensify both positive and negative experiences, arguing against a hedonic contrast account for our findings. Our final two studies sought direct evidence of the disruption of adaptation process by collecting online experience measures. Study 5 used the same negative stimulus used in Studies 1 and 3, and for Study 6, we developed a new positive stimulus designed to be sensitive to fluctuations in enjoyment.

STUDY 5: ONLINE MEASURES OF A NEGATIVE EXPERIENCE

Hedonics research occasionally employs online experience measures to better identify the progression of affect over time. For example, at a broad temporal level, Riis and colleagues (2005) use an experience sampling methodology to compare the overall well-being of hemodialysis patients with healthy controls, whereas at a more narrow temporal level, Kahneman and colleagues (1993) use online measures to identify the effect of peak and end experiences on summary evaluations. Similarly, consumer researchers have used online measures, such as dial-turning instruments, to continuously monitor consumers' affective responses to magazine pictures and television commercials (Pham et al. 2001).

In Studies 5 and 6, we used online measures to test our prediction that breaks intensify hedonic experiences by disrupting the adaptation process:

H_5: Breaking up a negative experience disrupts adaptation to the experience and makes the overall experience more aversive.

H_6: Breaking up a positive experience disrupts adaptation to the experience and makes the overall experience more pleasant.

Method

Sixty-six undergraduate students first rated a 5-second sample of the vacuum cleaner stimulus. In the context of four unrelated questions, participants indicated whether they would prefer a break in the middle of the experience and then were randomly assigned to either the break or the continuous condition. Participants in the continuous condition listened to the vacuum noise without interruption for 180 seconds, whereas participants in the break condition listened to the vacuum noise for 80 seconds, followed by 20 seconds of silence, and then 80 more seconds of the vacuum noise. During the experience, participants reported their current level of irritation 5, 30, 55, 80, 105, 130, and 155 seconds into the experience; the samples taken at 55 seconds and 105 seconds represented the critical samples immediately before and immediately after the break. Participants reported their irritation on a 101-point slider scale anchored by 0 ("not irritated at all") and 100 ("extremely irritated"). Finally, all participants completed the same screening question as was used in the previous studies (which led to the elimination of 5 participants). After the experience, participants reported their overall evaluation of the experience on a 9-point scale (anchored by "not unpleasant" and "extremely unpleasant") and their relative preference between listening to the vacuum cleaner noise and listening to a drilling noise (on the 201-point scale used in the previous studies).

Results and Discussion

As in our previous studies with negative experiences, in prospect, most participants (79%) preferred to break up the experience (binomial $Z = 4.48$, $p < .001$), but again, the break worsened the experience. Compared with participants in the continuous condition, those in the break condition reported that the experience was more irritating ($M = 7.88$ versus 6.42; $t(59) = 2.27$, $p = .027$) and indicated a greater preference for switching to a different noise ($M = 13.08$ versus -16.83; $t(59) = 2.03$, $p = .046$). As in our previous studies, the break intensified the aversive experience.

In addition, we wanted to examine whether people in the continuous condition were indeed adapting to the stimulus. To test this hypothesis, we compared ratings from the first online sample (at 5 seconds) with those from the seventh and final sample (155 seconds). As we predicted, participants who had continuously experienced the vacuum cleaner noise reported more irritation at the first sample than at the last sample ($M = 76.3$ versus 64.3; $F(1, 31) = 5.85$, $p = .022$). There was no similar difference for participants whose experience had been disrupted by the break ($M = 72.2$ versus 70.2; $F(23) = .24$, $p = .63$).

Furthermore, we wanted to use the online measures to assess the direct influence of the break. To do so, we considered the ratings provided immediately before and immediately after the break. As we predicted, inserting a break reliably affected the difference between these two ratings ($F(1, 55) = 5.73$, $p = .020$). Subsequent analyses revealed that though the experience had stabilized in the continuous condition ($M = 70.3$ versus 69.8; $t(31) < 1$), the experience got reliably worse in the break condition ($M = 71.1$ versus 80.7; $t(24) = 2.42$, $p = .023$), consistent with disruption of adaptation.

Considered together, these findings indicate that inserting the break in the experience disrupted participants' adaptation to the noise and made the experience more aversive. In Study 6, we switched to a pleasant experience to test for disruption of adaptation in the positive domain. Furthermore, to address the possible concern that the occasional reminders to evaluate disrupt the experience in all conditions, we collected continuous rather than discrete evaluations in this study.

STUDY 6: ONLINE MEASURES OF A POSITIVE EXPERIENCE

The objective of our final study was to examine the disruption of adaptation to a positive stimulus using online measures. To achieve this, we generated a novel stimulus to enable us to observe evidence of adaptation or sensitization across conditions, as well as the direct effects of disruption between conditions.

Method

We created an enjoyable stimulus with limited variability, thus making it easier to isolate the effect of time progression on participants' online responses. To this end, we constructed short songs composed of looped fragments from other well-liked songs. We first selected five songs that we judged to be generally enjoyable and covered a diverse set of styles in popular music ("Lose Yourself" by Eminem, "I'm Your Villain" by Franz Ferdinand, "My Sharona" by The Knack, "Can't Get You out of My Head"

by Kylie Minogue, and "Sometimes" by Michael I. Norton). We then looped 5- to 10-second segments of the songs to create a new 60-second song. The new songs featured seamless transitions, creating a song stimulus that was enjoyable but did not vary much over time.

Fifty-two undergraduate students first rated each of the five brief segments on a 51-point scale anchored by –25 ("really dislike it") and 25 ("really like it"). They were then told that they would be listening to a 60-second song constructed by looping the segment of their choice. After selecting their preferred song segment, participants were informed of their upcoming experience and were asked to provide continuous online evaluations of their enjoyment using a sliding scale anchored by 0 ("not enjoying it at all") and 100 ("enjoying it tremendously"). Participants in the continuous condition then listened to the 60-second song without interruption. Participants in the break condition listened to the first 50 seconds of the song, followed by 10 seconds of irritating guitar feedback (identical to the sound used in Study 4), and finally the last 10 seconds of the song. After the song ended, participants reported their liking of the looped song on a 9-point scale (anchored by "hated it" and "loved it") and indicated how much they would be willing to spend to see the artist in concert. Finally, all participants completed the same screening question as was used in the previous studies (which led to the elimination of 3 participants).

Results and Discussion

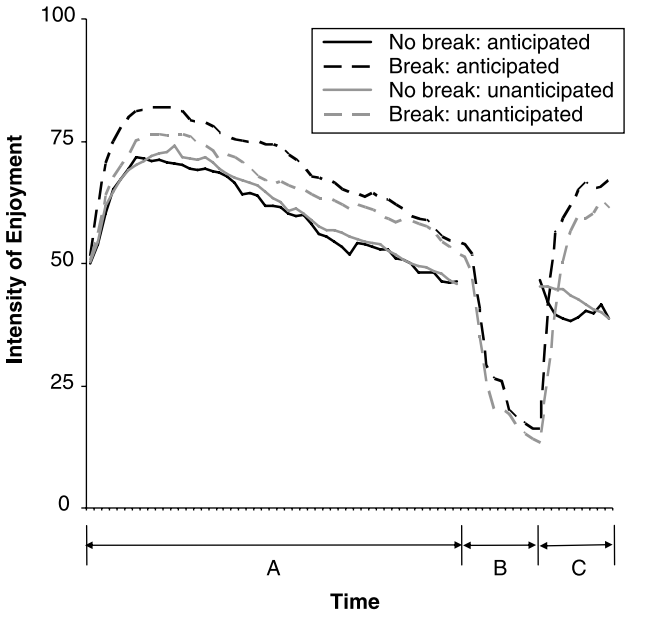
Forecast. Do people intuit that a break in the looped song will improve their experience? A separate group of participants (n = 82) listened to the five song samples and selected their favorite. They then reported whether they would prefer listening to a 60-second loop of that fragment either with or without interruption by 10 seconds of guitar feedback. People believed that the break would worsen the experience; 99% (81 of 82) of the participants said that they would prefer to listen to the continuous song (binomial Z = 8.83, $p < .001$). Despite this nearly universal intuition, experience data indicated that irritating guitar feedback made the song more enjoyable.

Experience. We first considered the retrospective evaluations. Consistent with our hypothesis, when the song was disrupted, people enjoyed it more (M = 3.74 versus 4.96; t(47) = 2.66, $p = .011$) and were willing to spend more than twice as much to attend a concert by the artist (M = $48.23 versus $22.52; t(47) = 2.32, $p = .025$). Despite strong intuitions to the opposite, adding a break improved this positive experience.

Online measures mirrored these findings. We first tested for adaptation. For every participant, we calculated the correlation between enjoyment ratings and the elapsed time of the song for the first 50 seconds of the song (the portion of the song that was identical for participants in both conditions). Adaptation would manifest as a negative correlation because people would be deriving less pleasure with every additional second that they listened to the song. After we computed correlations for each participant, we transformed these measures into a Fisher's Z-score and compared those means with zero. Consistent with our hypothesis, the averaged correlations showed strong evidence of adaptation for participants in both the continuous condition (average Z = –72; t(22) = –4.41, $p < .001$) and the break condition (average Z = –.54; t(25) = 4.39, $p < .001$; for a visual representation of these slopes, see Figure 3, Segment A).

We further hypothesized that the break would disrupt adaptation and increase enjoyment of the song following the break. Consistent with this prediction, people enjoyed the final 10 seconds of the song more when it followed a break than at the end of the continuous experience (M = 37.9 versus 64.0; t(47) = 4.33, $p < .001$; see Figure 3, Segment C). Furthermore, we predicted that the differences in the postexperience summary evaluations would result from changes in song enjoyment after the break. To test this possibility, we tested whether ratings of the final 10 seconds of the song mediated the effect of the manipulation on final evaluations. Following the procedure that Kenny, Kashy, and Bolger (1998) outline, we first replicated our previous analyses, showing that breaks improved the summary evaluations of the song ($\beta = .36$, t = 2.66, $p = .011$) as well as the enjoyment of the final 10 seconds ($\beta = .53$, t = 4.33, $p < .001$). Next, when we simultaneously regressed the summary evaluation on both factors, it was reliably predicted by the enjoyment of the final 10 seconds ($\beta = .47$, t = 3.19, $p = .003$) but was no longer influenced by the break condition ($\beta = .11$, t = .75, $p = .45$). Furthermore, including the mediator resulted in a reliable drop in conditional effect size ($\beta = .36$ versus .11; Z = 2.62, $p = .009$). These findings

Figure 3
INTERRUPTING A LOOPED SONG WITH GUITAR FEEDBACK DISRUPTS ADAPTATION, MAKING THE SONG MORE ENJOYABLE



Notes: Study 6 examines online measures of enjoyment of the looped song as a function of time and condition. Segment A depicts the first 50 seconds of the experience, which was identical for both groups. Segment B depicts seconds 51–60 for participants in the break condition (experiencing aversive guitar feedback). Segment C depicts the final 10 seconds of the looped song: seconds 51–60 for participants in the continuous condition and seconds 61–70 for participants in the break condition. The two unanticipated conditions depict data from a subsequent study mentioned in the "Results and Discussion" section of Study 6.

strongly suggest that people adapted to the positive stimulus of the looped song, that the break disrupted this adaptation and improved the postbreak experience, and that this, in turn, enhanced the retrospective evaluations.

However, a possible concern is that the online measure of enjoyment also differed before the break. Perhaps people simply enjoy the song more when they know it will be interrupted by an irritating noise. We addressed this alternative account in two ways. First, we compared the 10 seconds following the break (Seconds 51–60) with the 10 seconds preceding the break (Seconds 41–50). As we expected, the difference between the two conditions was significantly more pronounced in the 10 seconds after the break than in the 10 seconds before the break ($F(1, 47) = 4.79$, $p = .034$), indicating that the disruptive impact of the break exceeded any effect of its anticipation.

As a second, more thorough test of this alternative account, we collected additional data from a separate group of participants (n = 86), who were not told which condition they had been assigned to and therefore had both identical experiences and identical expectations for the first 50 seconds of the experience (all participants were informed about the two possible conditions without being told the condition to which they had been assigned). Approximately half of these participants then listened to the guitar feedback for 10 seconds, followed by the final 10 seconds of the song, whereas the remainder only listened to the final 10 seconds of the song. As we predicted, participants who heard the guitar feedback again enjoyed the final 10 seconds more than participants who heard the continuous song (M = 55.0 versus 42.7; $t(84) = 2.42$, $p = .018$; see Figure 3). This additional experiment, in conjunction with the additional analysis we reported previously, confirms our thesis that breaks intensify hedonic experiences by altering the experience following the break. Nevertheless, anticipation of the break may also influence affective experiences, a possibility we discuss subsequently.

GENERAL DISCUSSION

Consumers prefer to break up negative experiences, while keeping positive experiences intact. As we reviewed previously and as the forecasters for each of the studies confirmed, this preference pattern is remarkably consistent across a variety of situations. Yet, despite such strong consensus, our studies suggest that people are not predicting correctly. Inserting a break makes a vacuum cleaner more irritating but a massage more enjoyable (Studies 1 and 2). This was not due to contrast effects, because both pleasant and aversive disruptions made a noise more aversive and a song more enjoyable (Studies 3 and 4). Instead, we propose that breaks intensify experiences by disrupting adaptation, an account supported by the experience sampling techniques used in the final two studies. Although participants who continuously listened to a vacuum noise or an enjoyable song adapted to these stimuli over time, inserting a break disrupted this adaptation, making the vacuum noise more irritating and the song more enjoyable (Studies 5 and 6).

Theoretical Extensions

Why does a break make a massage feel better and a vacuum cleaner sound worse? Our studies indicate that breaks disrupt adaptation and intensify the experience following the break. However, consumers' experience could also be influenced by what happens during the break itself as well as by the initial anticipation of the break.

What are consumers thinking during the break? Do they reflect on the elapsed experience, do they anticipate the experience to come, or do their minds drift to domains irrelevant to the experiment itself? People certainly look forward to future experiences and derive (dis)utility from savoring or dreading this anticipated experience (Loewenstein 1987). Therefore, breaks might intensify experiences by providing an opportunity to savor or dread the restarting of the experience. An additional study tested this possibility by asking undergraduate participants (n = 107) to listen to a vacuum noise either continuously for 3 minutes or interrupted by a 20-second silent break (replacing the noise). Most important, half of those who received the break were given a brief entertaining story to read during the break. If dread experienced during the break substantially contributes to the effect, distracting people during the break by providing the story should reduce the effect by making it more difficult to elaborate on the return of the noise (or to reflect on the previously experienced noise). However, participants listening to the continuous vacuum noise judged it as less aversive (M = –.34) than participants who received the silent break, regardless of whether they received the engaging story (M = .38) or not (M = –.04; $t(104) = 1.87$, $p = .064$). Although consumers' feelings during the break may influence experienced enjoyment, they do not seem to cause the effects observed in our experiments.

Aside from affecting consumers' experience during the interruption and after the interruption, the break may also change consumers' experience before the interruption, that is, through anticipation. It is possible that people savor the break in the negative experience and dread the break in the positive experience. However, the online affect measures of Study 6 show the opposite results: People enjoyed the song more when anticipating the unpleasant disruption (M = 70.9 versus 58.2; $t(47) = 2.83$, $p = .007$; see Figure 3, Segment A). Although the additional data confirmed that our results were mostly driven by the period following the break, anticipation of the break enhanced the intensity of the experience before the break. A possible explanation for this is that people contrast the current experience with the expected relief or frustration offered by the break. In summary, although these alternative influences of the break cannot account for our observed results, both factors could contribute to the overall experience and thus strengthen our assertion that breaks can make pleasant experiences more enjoyable and unpleasant experiences less tolerable.

Boundary Conditions

Experiences. People cannot adapt to everything. For example, despite beliefs to the contrary, people have trouble adapting to life near a highway (Weinstein 1982). How is highway noise different from the vacuum cleaner noise? Variation may be one important factor. Unlike the monotonous vacuum cleaner, highway traffic can be highly variable: Loud trucks alternate with quieter cars, and rush hour traffic alternates with midday lulls. Perhaps the person living next to the highway chronically experiences the "break" condition rather than the "continuous" condition, a possibility that may help reconcile the differences within

the same model. People have the ability to adapt to mild noises if they are presented continuously, but they cannot adapt, or perhaps even sensitize, to disrupted experiences.

In addition, it is likely the case that some experiences are so intense that people simply cannot adapt to them. For example, it can take many years before people fully adapt to the negative affect associated with losing a spouse (Carr et al. 2001). Therefore, the effects we document are probably restricted to events of modest intensity. Whereas the mild irritation of waiting in line at a cash register would indeed be exacerbated by a disruption, the more extreme pain of medical intervention might require breaks for the coping process to be effective. Is the same true for positive experiences? Compared with a likable pop song, are people less likely to adapt to more intensely positive experiences, such as consuming a glass of fine Californian wine or a sweet Belgian chocolate truffle? Perhaps these comparatively intense experiences are enjoyed most fully when they are consumed as a whole. For example, when describing our hypotheses to massage therapists, we are told that an enjoyable massage would be worse with a break because the continuity is an integral part of the massage experience. Yet, in contrast to masseurs' intuitions, inserting a break increased enjoyment of a massage (Study 2) and enjoyment of a pop song (Study 4), another experience that is typically viewed as an experience that should be enjoyed as a complete unit.

Another, more straightforward factor is the duration of the break. Across our studies, we use breaks that varied in length, but all could be considered very brief. To some extent, this bolsters the strength of our findings because even a minimal disruption appears to change hedonic consumption. However, it also qualifies our findings because as the break increases in length, it constitutes an increasingly large proportion of the overall experience. When a pleasant trip to Saint-Tropez is disrupted by a brief professional meeting, the vacation might actually get better, but if the trip instead is disrupted by ten years of incarceration, the break will likely be unappreciated (even if the return to the vacation would be rather enjoyable).

On the other end of the spectrum, we can ask whether any disruption is sufficient to alter adaptation. It may be the case, for example, that the experience does not need to be completely interrupted but rather simply made to feel discontinuous. Instead of inserting a brief break in a stimulus, perhaps merely changing the stimulus slightly (e.g., switching a massage chair from a Shiatsu function to a Swedish function) is sufficient to improve the experience without ever interrupting the stimulus itself.

Choices. In terms of the choice to break up an experience, as we document throughout the article, in general, people prefer to disrupt negative experiences and not to disrupt positive experiences. Nevertheless, this belies an intuition that people would rather complete some negative experiences as quickly as possible (e.g., receiving a painful injection). Consumers may indeed prefer not to break up an aversive experience if it is sufficiently short so that they can simply "get it over with." Although consumers may feel the need to break up unpleasant experiences because they overestimate the amount of resources they will need to cope with the experience (e.g., because they anticipate sensitization rather than adaptation), they should not feel this need for sufficiently short negative experiences.

In the positive domain, participants' reluctance to break up pleasant experiences contrasts with Linville and Fischer's (1991) finding that people like to segregate positive experiences so that they can maximally enjoy their impact. These conflicting findings may be attributable to differences in the type of experiences studied. Whereas Linville and Fischer studied when people prefer to combine two separate, meaningful events (e.g., positive feedback for two classes), we study when people prefer to break up single, homogeneous experiences (see, e.g., the list of positive experiences in Table 1). This raises the possibility that when breaking up a pleasant experience will result in two separate, meaningful events, consumers may prefer to break up that experience. For example, consumers may not want to break up a 40-minute massage with a 5-minute break, but they may prefer to take a break between a back massage and a foot massage.

Extension, Implication, and Application

If a disruption can make a massage chair more enjoyable and a vacuum cleaner more irritating, can the same reasoning be applied to a broader conceptualization of happiness and well-being? If we disrupt an ongoing affective state, will it prolong or intensify that emotion? Some prior research has suggested that general happiness can indeed be partially predicted by changes in circumstances and activities (Lyubomirsky, Sheldon, and Schkade 2005). However, not all changes are created equal. Whereas a circumstantial change (e.g., a new roommate) might produce only relatively short-term changes in well-being, volitional changes (e.g., a new exercise regime) can have long-lasting effects by mitigating the process of adaptation (Sheldon and Lyubomirsky 2006). It may be the case, then, that people can enhance their well-being by restructuring their consumption of daily life, more specifically, by actively reducing or enhancing consumption monotony (e.g., varying the massage schedule, regulating trips to the dentist).

Even if an application to the management of subjective well-being remains speculative, more traditional marketing applications seem to be more straightforward. For example, consider a salesperson providing a demonstration of a pleasant product or service experience. Rather than providing consumers with one extended test drive or one prolonged demonstration of a massage chair or a comfortable waterbed, it may be more effective to provide customers with a sequence of interrupted product experiences. Each interruption disrupts the adaptation process and enables consumers to experience again the thrill of the initial experience.

For the management of actual service experiences, the implications are somewhat more complicated. If a manager is mostly concerned about the initial appeal of a pleasant experience, it is advisable not to provide a break in the experience (e.g., show the movie without intermission), but if he or she is trying to maximize consumer enjoyment, it would be sensible to insert short breaks (e.g., insert several pauses when serving the chef's tasting menu). A similar reasoning can be applied to unpleasant experiences. Many service experiences either are mostly unpleasant (e.g., medical procedures) or have a nontrivial unpleasant component (e.g., waiting on the tarmac for a flight to take off). In these situations, interrupting the unpleasant experience may

increase consumers' irritation, even though it would initially seem desirable to them. Indeed, despite consumers' preferences, it may be ill-advised to offer patients the opportunity to take a break in a moderately unpleasant medical procedure or to offer airline passengers the opportunity to move about the cabin for five minutes during a half-hour delay.

Finally, another marketing question is, What would happen if the consumer can choose to insert or skip the breaks during the experience rather than committing to the breaks in advance (as in the current studies)? Consider a person sitting in the massage chair. If the person is given the option to turn off the chair for 30 seconds at any time, would he or she ever exercise that choice? The possibility seems both remote in prospect (people do not think that breaks will improve positive experiences) and even less likely in the online experience in which, even with extreme adaptation, the break will always be less enjoyable than the massage itself. The same largely goes for negative experiences, in which the consumer is unlikely to forgo a chance to take a break, even if he or she were to observe that the experience was getting progressively less aversive. In other words, consumers' myopia would likely prevent them from improving their experience by disrupting the ongoing adaptation.

This adaptation blind spot implies that external agents may have the ability to improve consumers' experience better than they can themselves. Perhaps the thoughtful masseuse would maximize customer enjoyment by inserting breaks in the massage, even though that would go against the immediate wishes of the customer. Conversely, customers who are informed of the break in advance may choose to go to another, more monotonous masseuse.

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