

**Give It Up:
A Strategy for Combatting Hedonic Adaptation**

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Abstract

The present research provides the first evidence that temporarily giving up something pleasurable may provide an effective route to happiness. Participants were asked to eat a piece of chocolate during two lab sessions, held one week apart. During the intervening week, we randomly assigned them to abstain from chocolate or to eat as much of it as possible, while a control group received no special instructions related to their chocolate consumption. At the second lab session, participants who had temporarily given up chocolate savored it significantly more and experienced more positive moods after eating it, compared to those in either of the other two conditions. Many cultural and religious practices entail temporarily giving up something pleasurable, and our research suggests that such self-denial may carry ironic benefits for well-being by combatting hedonic adaptation.

In modern Western society, many people enjoy a level of material abundance that would have been unimaginable throughout most of human history. But such material wealth often fails to provide as much happiness as people expect (Aknin, Norton, & Dunn, 2009). A recent study of almost half a million Americans found that people with higher household incomes experienced more positive moods on a day-to-day basis, but these emotional benefits tapered off entirely for annual incomes over about \$75,000 (Kahneman & Deaton, 2010). Wealth may fail to result in lasting happiness in part because of hedonic adaptation, whereby we quickly grow accustomed to the pleasurable things in our lives—from fancy cars to fine dining and travel—reducing their impact on our long-term well-being (Frederick & Loewenstein, 1999; Lyubomirsky, 2011; Wilson & Gilbert, 2008). Having unlimited access to such pleasures may make individuals less likely to savor them, facilitating hedonic adaptation. Providing indirect evidence for this idea, recent research found that wealthier individuals are less inclined to savor the little pleasures of daily life (Quoidbach, Dunn, Petrides, & Mikoloajczak, 2010). In a society of abundance, then, we propose that restricting access to pleasurable things may provide a route to increased happiness, combatting hedonic adaptation by fostering individuals' proclivity to savor.

Indirect support for the idea that scarcity promotes savoring comes from a study examining college students on the brink of graduation (Kurtz, 2008). Through a writing exercise, students at the University of Virginia were led to feel that they either had very little time left or they had plenty of time left before graduation; participants in a control group simply wrote about a typical weekday. Compared to students in the other two groups, those who felt they had little time left were more inclined to make the most of this time by taking pictures, feeling grateful for their university, making plans with friends, and engaging in other college-

related activities. Over the course of two weeks, students in this group exhibited a significant increase in happiness relative to both control participants and those led to feel that they had an abundant amount of time left. While this experiment only manipulated participants' *perceived* access to the joys of college life, the findings offer suggestive evidence for the broader argument that scarcity may provide a better route to happiness than does abundance.

If this is the case, then temporarily giving up something enjoyable may counter hedonic adaptation by renewing the capacity to appreciate it, enhancing happiness. Although no studies have examined the effects of temporary deprivation on subsequent savoring and happiness, research on satiation is consistent with our argument. In particular, recent work shows that people evaluate an enjoyable ongoing stimulus more positively when their experience with the stimulus is interrupted rather than continuous (Galak, Kruger, & Loewenstein, 2012; Nelson & Meyvis, 2008; Nelson, Meyvis, & Galak, 2009). For example, participants in one study rated a three-minute massage more favorably and were willing to pay more to repeat it when the massage was interrupted by a 20-second break in the middle (Nelson & Meyvis, 2008). In another study, participants evaluated an episode of the sitcom *Taxi* more positively when it was broken up by commercials rather than viewed continuously, suggesting that brief interruptions can enhance the pleasure of a positive experience (Nelson et al, 2009).

Building on this work, we propose that restricting access to everyday pleasures may promote the tendency to savor them. Savoring is a form of emotion regulation that entails maintaining and increasing the positive affect derived from an enjoyable experience (e.g., Bryant, Chadwick, & Kluewe, 2011; Bryant & Veroff, 2007). Although savoring has been conceptualized and measured in a variety of ways, the most comprehensive definition of savoring includes four key components (Nelis, Quoidbach, Hansenne, & Mikolajczak, 2011;

Quoidbach, Berry, Hansenne, & Mikolajczak, 2010; Tugade & Fredrickson, 2007): (1) staying present in the moment during the experience, (2) anticipating or reminiscing about the experience, (3) telling others about it, and (4) displaying positive emotions non-verbally.

Highlighting the value of such positive emotion regulation, research shows that savoring is consistently linked with greater happiness (Bryant, 2003; Quoidbach et al., 2010). In particular, the use of savoring strategies has been found to both mediate and magnify the impact of daily positive events on momentary happy mood (Jose, Lim & Bryant, 2012).

Therefore, to the extent that scarcity promotes savoring, abundance may undermine happiness. That is, people may derive a larger mood boost from consuming something if they have had limited, rather than abundant, access to it in the recent past. To test this hypothesis, we asked participants to eat a piece of chocolate during two lab sessions, one week apart. During the intervening week, we randomly assigned them to abstain from chocolate or to eat as much of it as possible, while a control group received no special instructions related to their chocolate consumption. We predicted that people who gave up chocolate would be more likely to savor it subsequently, leading them to experience more positive moods, compared to participants in either of the other two groups.

Methods

Participants

A total of 55 undergraduates at the University of British Columbia (80% women; $M_{age} = 19.4$, $SD = 1.5$) completed both sessions of this experiment, which took place exactly one week apart.¹ When participants signed up, the experiment was explicitly described as a study on eating chocolate (presumably enabling people who disliked chocolate or were dieting to avoid this study).

Procedure

During the first lab visit (Time 1), participants completed consent forms and an initial questionnaire that included a measure of dispositional happiness and demographic items. They were then randomly assigned to one of three conditions. In the *restricted access* (N= 16) condition, participants were instructed not to eat any chocolate for a week, until they returned to the lab. In the *abundant access* condition (N =18), the experimenter gave participants approximately 2 pounds of chocolate (one large bar per day) with the instruction to eat as much as they comfortably could over the course of the week. In the control condition (N =21), participants did not receive any specific instructions related to their chocolate consumption. All participants were then asked to taste a piece of chocolate before completing measures of savoring and positive affect (PA). Exactly one week later (Time 2), participants came back to the lab, tasted the piece of chocolate a second time, and completed the same measures of savoring and PA used at Time 1, as well as reporting how many days they had eaten chocolate during the week between lab sessions.²

Measures

Dispositional happiness. To assess whether participants saw themselves as happy people, we used the well-validated Subjective Happiness Scale (SHS; Lyubomirsky & Lepper, 1999), which includes four 7-point items ($\alpha_{\text{Time1}} = .89$; $\alpha_{\text{Time2}} = .90$).

Positive affect. In both lab sessions, we measured positive affect using the PA scale from the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). Specifically, participants rated 10 mood-related adjectives (e.g., enthusiastic) on a scale of 1 (very slightly or not at all) to 5 (extremely) for how well each adjective described their current mood ($\alpha_{\text{Time1}} = .88$; $\alpha_{\text{Time2}} = .90$). We selected the PANAS as a mood measure because it has

been validated to capture transient moods (Watson, et al., 1988) and has been previously associated with dispositional savoring (Quoidbach et al., 2010).

Savoring. Our savoring measure was designed to capture the four main facets of savoring described in the Introduction. On scales from 1 (*not at all*) to 7 (*a great deal*), participants reported to what extent they had tried to mindfully pay attention to the chocolate's taste and texture while eating (*staying present*), (2) were looking forward to eating this chocolate in the future (*positive mental time travel*) and (3) were planning to tell a friend about the chocolate (*telling others*). In order to measure the behavioral display component of savoring, the experimenter (a research assistant who was blind to the study hypotheses) surreptitiously observed each participant eating the chocolate and rated how much enjoyment participants displayed, on a scale from 1 (*not at all*) to 7 (*a great deal*). These four items were averaged into a total savoring score ($\alpha_{\text{Time1}} = .47$; $\alpha_{\text{Time2}} = .69$).³

Results

Manipulation Check

To test whether our manipulation successfully influenced how often participants ate chocolate during the week between lab visits, we entered experimental condition into an ANOVA predicting the number of days on which they reported eating chocolate. There were large between-group differences on this manipulation check, $F(1, 52) = 107.42, p < .001, \eta_p^2 = .81$, with those in the restricted access condition eating chocolate on fewer days ($M = .19, SD = .40$) than those in the control condition ($M = 3.35, SD = 1.50$) and the abundant access condition, ($M = 6.1, SD = 1.27$). Pairwise comparisons using least significant difference (LSD) tests showed that each condition differed significantly from each of the other two, all p 's $< .001$.

Positive Affect

Preliminary analyses revealed that there were no between-group differences in participants' Time 1 positive affect, $F(2, 52) = .05, p = .95$, or dispositional happiness, $F(2, 52) = 1.23, p = .30$. Thus, because there are substantial individual differences in typical happiness levels (e.g., Lyubomirsky, Sheldon, & Schkade, 2005), we entered Time 1 PA and dispositional happiness as control variables in an ANCOVA predicting Time 2 PA from experimental condition. As expected, there were significant between-group differences in Time 2 positive affect after eating the chocolate, $F(2, 50) = 3.21, p = .05, \eta_p^2 = .11$. Pairwise comparisons showed that participants in the restricted access group reported significantly higher Time 2 PA ($M = 3.07, SD = .83$) than participants in the abundant access group ($M = 2.56, SD = .79$), $p = .03$, or the control group ($M = 2.64, SD = .75$), $p = .03$; the abundant access group and the control group did not differ from each other, $p = .98$.

In addition, t-tests confirmed that participants in the abundant access group exhibited a significant decline in PA after eating chocolate ($M = -.38, SD = .71$) from Time 1 to Time 2, $t(17) = 2.28, p = .04$, while those in the control group showed a marginal decrease ($M = -.35, SD = .91$), $t(20) = 1.75, p = .10$, and those in the restricted access group exhibited a non-significant increase ($M = .15, SD = .70$), $t(15) = .86, p = .41$.

Savoring

There were no Time 1 differences in savoring, $F(2, 52) = 0.73, p = .49$. Thus, we conducted an ANCOVA predicting Time 2 savoring scores from condition, controlling for Time 1 savoring. This analysis revealed significant between-group differences in Time 2 savoring, $F(2, 51) = 6.63, p = .003, \eta_p^2 = .21$. Pairwise comparisons showed that participants in the restricted access condition savored the chocolate ($M = 5.08, SD = .94$) more than those in the

abundant access condition ($M = 4.03$, $SD = 1.10$), $p = .001$, or control condition ($M = 4.31$, $SD = .86$), $p = .006$, whereas participants in the latter two groups did not differ from each other, $p = .49$.

In addition, t-tests showed that participants in the abundant access condition exhibited a significant decrease in savoring ($M = -.85$, $SD = 1.21$) from Time 1 to Time 2, $t(17) = 2.96$, $p = .009$, as did controls ($M = -.75$, $SD = .84$), $t(20) = 4.12$, $p = .001$, whereas those in the restricted access group exhibited a non-significant increase in savoring ($M = .33$, $SD = 1.07$), $t(15) = 1.24$, $p = .23$.

Mediation

Our results suggest that participants were more likely to savor chocolate after having restricted (versus abundant) access to it, thereby promoting positive emotions. To test this hypothesis, we examined whether the effect of being in the restricted access condition vs. the abundant access condition on PA at Time 2 was mediated by savoring. For consistency with our preceding analyses, we entered our Time 1 measures of PA, savoring, and dispositional happiness as covariates in the mediation analyses; this approach is consistent with Baron & Kenny's (1986) recommendation to obtain and control for prior measures of mediator and dependent variables, thereby increasing the internal validity of mediation analyses (note that running the analyses without these covariates does not substantively alter the results).

As depicted in Figure 1, when T2 savoring was included along with group condition (coded as restricted access = +1, abundant access = -1) in a regression predicting T2 positive affect, the relationship between experimental condition and positive affect became weaker, suggesting mediation. To test the significance of the indirect effect (i.e., the path through the mediator), we used a bootstrapping procedure, as recommended by Shrout & Bolger (2002).

Bootstrapping involves the repeated extraction of samples from the data set and the estimation of the indirect effects in each resampled data set. The totality of all the estimated indirect effects allows the construction of a 95% confidence interval for the effect size of each indirect effect. The indirect effect is significant at $p < .05$ if the 95% confidence intervals do not include zero. In line with recommendations by Preacher and Hayes (2008), we performed bootstrapping with 5000 re-samples and 95% bias-corrected and accelerated confidence intervals. The results demonstrated that zero was not included in the 95% confidence interval for the indirect effect (CI Low = .06; CI High = .37). Thus, participants in the restricted access condition experienced more positive affect after eating a piece of chocolate than participants who had abundant access to chocolate, and this effect was statistically explained by their greater propensity to savor their experience.

Discussion

The present experiment provides the first evidence that temporarily giving up something pleasurable may provide an effective route to happiness. Participants savored a piece of chocolate significantly more and derived more positive affect from eating it if they had given up chocolate for a week (*restricted access condition*) rather than receiving an abundant supply of it (*abundant access condition*) or maintaining their usual chocolate consumption habits (*control condition*). When participants ate a piece of chocolate in the second lab session, those in the abundant access and control conditions savored it less than they had a week earlier, when they had first been asked to eat chocolate in the lab. Likewise, people in the abundant access condition exhibited a significant drop in the positive affect they experienced after eating chocolate in the lab from one week to the next, while those in the control condition exhibited a

trend in the same direction. These simple findings depict a powerful barrier to human happiness: The appreciation and delight we derive from a positive experience may quickly fade when that experience is repeated. Our results suggest, however, that this slow slide toward disenchantment may be disrupted by temporarily giving up something we like; participants in the restricted access condition savored chocolate and experienced just as much pleasure from it during the second tasting as they had during the first, defying the typical pattern of hedonic adaptation (e.g., Frederick & Loewenstein, 1999).

Researchers have been interested in hedonic adaptation for decades, but Sheldon and Lyubomirsky (2012) recently pointed out that most work has focused on negative events, leaving the processes that underlie adaptation to positive experiences relatively unexplored. The present work provides empirical evidence that savoring may represent an important mechanism in understanding when and why people adapt to positive experiences. That is, a positive experience—such as getting course credit for eating chocolate—may provide reduced happiness when it is repeated because we are less likely to up-regulate our positive emotions.

Although the observed differences were starkest between people who were asked to abstain from chocolate and those who were given an abundant supply of it, individuals in our control condition exhibited a pattern of responses that was very similar to participants in the abundant access condition. This convergence presumably stems from the fact that chocolate is abundantly available in our society, leaving those in the control condition with easy access to chocolate. While most university students can easily afford chocolate, wealthier individuals may see life more broadly as a kind of candy store, in which a wide range of pleasures are readily available for purchase. Ironically, such abundance may undermine appreciation, reducing the

positive emotions that enjoyable experiences provide and helping to account for the surprisingly weak relationship between wealth and happiness (Quoidbach et al., 2010).

The present research points to a simple intervention that can reduce the detrimental effects of such abundance: By choosing to give something up temporarily, people may restore their capacity to enjoy it. Because frequently indulging in common forms of pleasure may also come at a cost to our wallets or our waistlines, giving up something enjoyable may be particularly worthwhile for this class of pleasures, considering the other benefits of reduced consumption. It is worth noting, however, that there was an elevated drop-out rate in the restricted access condition, raising the possibility that “give it up” interventions might require some self-control, and might therefore be better suited for some individuals than others. This idea aligns well with recent theorizing, which emphasizes that happiness interventions are not “one-size-fits-all” and need to be well-matched with an individual’s personal characteristics (Sheldon & Lyubomirsky, 2004; Lyubomirsky, Sheldon & Schkade, 2005).

Future research should also determine whether simply *perceiving* oneself as relatively deprived might enhance savoring. Recent research shows that increasing individuals’ subjective sense of the time elapsed since they last consumed their favorite food can increase their desire to consume it (Redden & Galak, in press). From a theoretical perspective, this work provides evidence that perceptions of past consumption may matter more than actual consumption in shaping current desires. In daily life, however, the most straightforward way to alter perceptions of past consumption may be to change actual consumption, supporting the value of “give it up” interventions.

Indeed, many cultural and religious practices—from New Year’s resolutions to the Catholic observation of Lent—involve reducing consumption of something pleasurable.

Although these practices are typically associated with self-denial, the present research provides intriguing evidence that temporarily giving up something pleasurable may provide a more productive route to happiness than consistently indulging in pleasure, highlighting the ironic benefits of asceticism.

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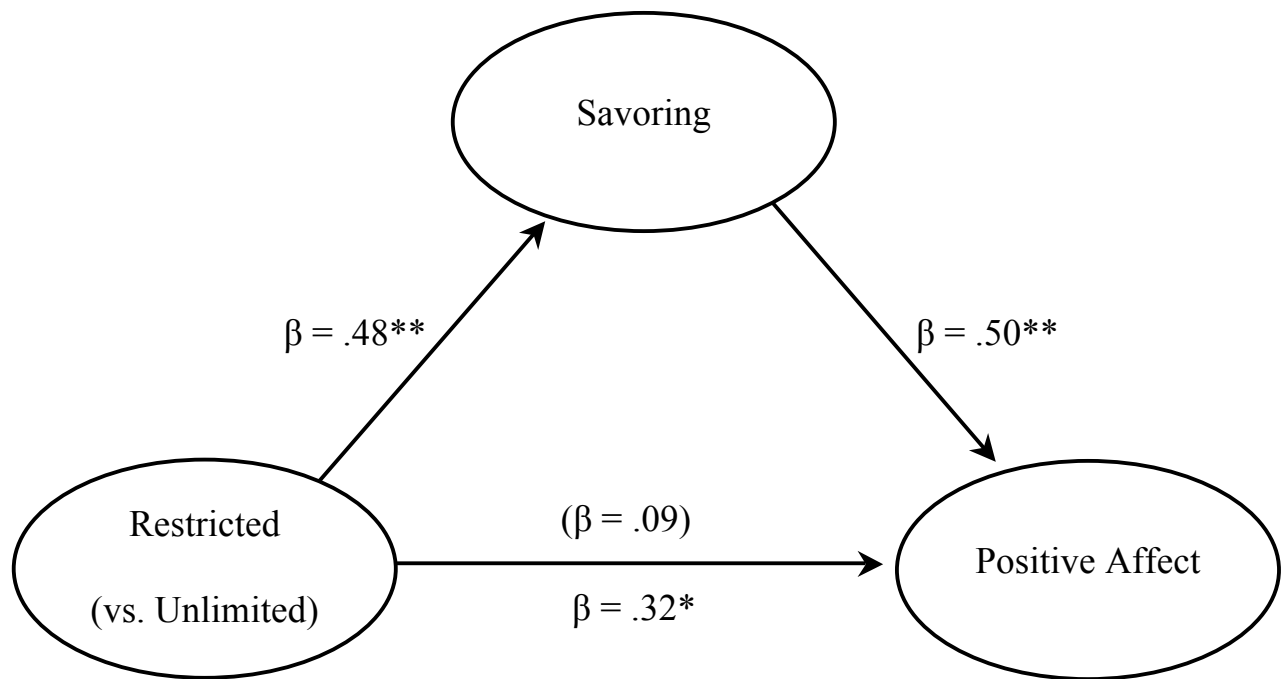


Figure 1. Results of regression analyses showing that savoring mediates the effect of experimental condition (restricted access = +1, abundant access = -1) on positive affect. Asterisks indicate coefficients significantly different from zero. $*p < .05$; $**p < .01$.

Footnotes

¹ An additional 9 participants (7 of whom were in the restricted access condition) signed up for the first session of this study but failed to return for the second session. Participants may not have shown up for the second session because they failed to follow the experimental instructions during the week between sessions, or because the second session did not fit in their schedules. There were no significant differences between participants who dropped out of the study and those who did not on any of the study variables at Time 1 across conditions (all t 's < 1.16), and within the restricted access group only (all t 's < 1.51). Bootstrapping procedures yielded similar results (all 95% CI included 0).

² We also included several additional measures of related constructs (e.g., implicit affect) on an exploratory basis in the questionnaires. Although these measures were not the focus of the present work, these tertiary results are available from the authors upon request.

³ These alphas are low due to the multi-dimensional nature of savoring, but can be increased if we rely only on the three self-report items, which share method variance ($\alpha_{\text{Time1}} = .67$; $\alpha_{\text{Time2}} = .70$). Using this 3-item measure did not change the significance of any of the results, thus we retained the behavioral display measure given its theoretical importance in the conceptualization of savoring.