

How missed temporal deadlines influence consumption behavior

Beth Vallen

Department of Marketing & Business Law, Villanova University, Villanova, Pennsylvania, USA

Lauren G. Block

Department of Marketing and International Business, Baruch College – The City University of New York, New York, USA, and

Eric Eisenstein

Department of Marketing and Supply Chain Management, Temple University, Philadelphia, Pennsylvania, USA

Abstract

Purpose – The purpose of this research is to explore how and why consumption behavior changes across time in reference to a temporal deadline, such as a meeting start time or scheduled appointment.

Design/methodology/approach – The authors present findings from two experiments that manipulate distance to/from a deadline and assess behavioral intentions and consumer choice, both before a deadline is reached (i.e. the individual is early) and after a deadline has passed (i.e. the individual is late).

Findings – Results demonstrate that, while individuals are more likely to refrain from consumption in favor of being on time as a deadline approaches, they are more likely to engage in consumption activities once they have already missed their deadline. Support is shown for an underlying process of affect regulation; when they are late (vs on time), consumers are likely to regulate affect via the selection of more indulgent options.

Practical implications – These studies provide insight into the both the beneficial and detrimental nature of deadlines. Further, they provide insight as to how deadlines impact consumer behavior by demonstrating differential patterns of consumption based on whether an individual is early vs late.

Originality/value – Documenting the effect of meeting and missing deadlines on consumption contributes to the literature on time usage and offers insights into individuals' efforts to prioritize multiple activities that conflict due to time constraints.

Keywords Time, Affect regulation, Deadline, Late

Paper type Research paper

An executive summary for managers and executive readers can be found at the end of this article.

Imagine you are on your way to a meeting that is scheduled to begin at 9 a.m. As you pass the cafeteria the desire for coffee suddenly hits you. You initially think it prudent to forgo the coffee and stay on your path to the meeting. Glancing at your watch, however, you realize that you are already five minutes late and, as you have already missed the deadline, decide to stop for the coffee even though it will mean an even later arrival to the meeting. What explains this willingness to accentuate late arrival upon recognizing that an original time commitment has already been missed?

Despite the prevalence of deadlines and individuals' resulting struggles to balance deadlines with consumption activities, there is a dearth of research that explores the manner in which consumers approach consumption activities when facing time constraints. This work is the first to explore how and why consumption behavior changes across time in reference to a

temporal deadline or, alternatively, how individuals address consumption needs based on whether they are early or late. In two studies, we demonstrate that individuals are more likely to refrain from consumption in favor of being on time as a temporal target time (or deadline) approaches. Importantly, while some individuals are likely to continue to forgo consumption opportunities to minimize late arrival after a deadline has passed, our results demonstrate that others are likely to abandon efforts aimed at deadline adherence once they are late. This is not to say that they are disregarding the deadline entirely, but instead that they are willing to further delay their arrival and exceed the deadline by an even larger amount for the purposes of engaging in an alternative consumption activity. Moreover, we show that affect regulation processes underlie the differences in behavior pre- and post-deadline and, in turn, impact consumer choice; specifically, when they believe it will repair negative affect, individuals tend to make more indulgent choices when they are late.

Documenting the effect of meeting and missing deadlines on consumption activities contributes to the growing, but still limited, literature on how time impacts decision-making. By demonstrating that consumers engage in consumption activities rather than directing their activities toward minimizing lateness, this work also constitutes a unique

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contribution to the literature that explores consumers' efforts to prioritize multiple activities (Denton, 1994; Dodge *et al.*, 1989). Prior work in the area of goal-directed trade-offs is focused on pre-failure activities. In contrast, the current work contributes to the goal literature by being the first, to the best of our knowledge, to explore consumption activity after evidence indicating goal failure when a goal remains active (i.e. being late does not render the goal to attend your meeting inactive, but merely delayed). Our research finds that an individual's temporal distance to a deadline vs from a deadline impacts both the likelihood of engaging in consumption behavior and the choices that individuals make when they engage in consumption activities. Across three studies, we find that consumers who miss their deadline are more likely to consume items that help regulate negative affect (i.e. make them feel better). We test this in the domain of food and beverage decision-making and, more specifically, indulgent consumption; consequently, the current research also contributes to our understanding of food decision-making and, more generally, consumer health and well-being.

Conceptual framework

Time plays an important role in all consumer decisions. Deighton *et al.* (1983, p. 52) describe time as the "ultimate scarce resource" and equate it to a currency since individuals pay for each life experience with time. Prior research has attested to the pervasive role of time pressure – often imposed by deadlines, which directly constrain time resources – on consumer behavior. For instance, time shortages have been shown to impact preferences for particular goods (Ackerman and Gross, 2003) or product attributes (Diederich, 2003), as well as decision-making processes (Payne *et al.*, 1988; Payne *et al.*, 1996). In fact, research has suggested that time shortages may be a useful way to segment consumer markets (Darlan and Cohen, 1995).

Another important, yet previously unexplored, issue is the manner in which temporal deadlines impact the choices that individuals make between multiple pursuits that conflict due to the finite nature of time resources. One assumption emerging from extant literature is that, when facing two conflicting options, consumers prioritize multiple pursuits and focus effort on the highest-ranked option (Denton, 1994; Dodge *et al.*, 1989). However, the specific manner in which consumers approach consumption activities when facing a time constraint has never been explicitly tested. As we explain below, we suggest that this process varies across time in relation to a deadline or, in other words, based on whether one is early or late. Considering the deadline as the reference point for behavior, as this is the standard by which individuals are able to assess their progress toward the goal of on time arrival, we next consider research that explores behavioral differences in individuals facing goals.

The clock is ticking – I'd better get to the meeting

Positive feedback – that is, evidence that you are effectively progressing toward a desired end state – generally results in positive affect and provides the motivation to continue working toward an objective (Bagozzi *et al.*, 1998). This stream of research is in line with extant findings demonstrating individuals' tendency to increase effort aimed at attaining a

particular outcome as it becomes more proximate (Gjesme, 1981; Heath *et al.*, 1999). For example, Heath *et al.* (1999) asked study participants to predict the likelihood that hypothetical individuals with relatively higher vs lower goals would engage in subsequent goal-directed effort after demonstrating prior progress (i.e. the likelihood of an individual with a goal of 40 vs 30 sit-ups to perform one additional sit-up after reaching 28). Greater effort was predicted to come from the individual with the lower goal as the level of prior progress leaves this individual is closer to reaching the desired end state.

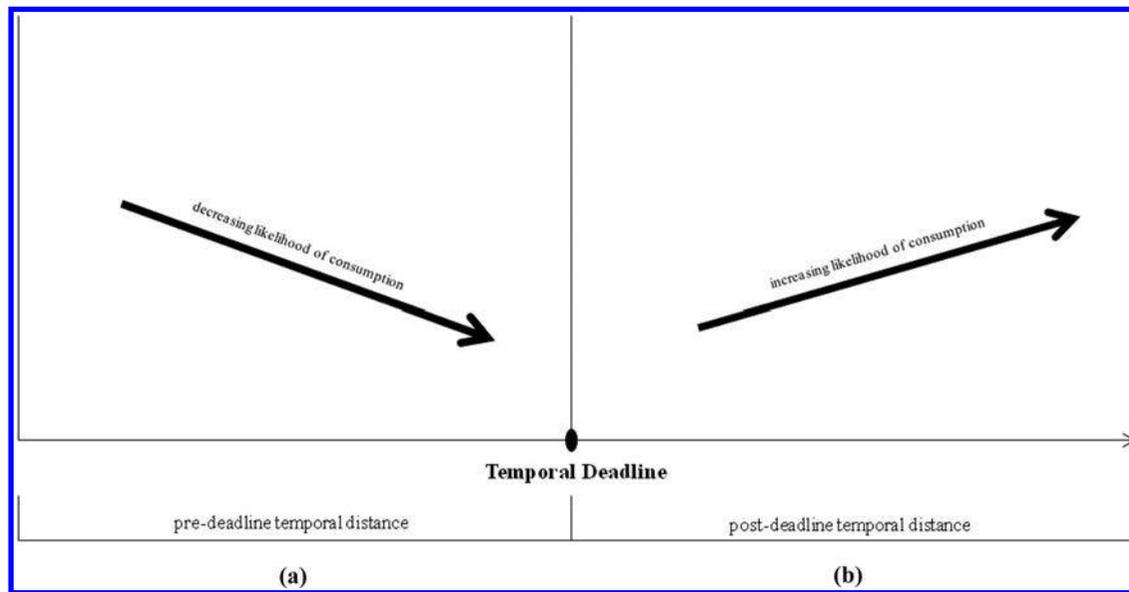
This finding is consistent with prior research investigating goal-gradients for behavior. Considering participants' behavior associated with rewards programs, in which individuals obtain benefits for repeat purchase behavior, Kivetz *et al.*, 2006 observe that after accelerating toward and achieving an initial reward, individuals slow down their efforts toward a second incentive before subsequently accelerating once they perceive themselves to be closer to the next reward. For instance, after buying ten cups of coffee and receiving a free coffee in return, individuals repurchase at a slower rate until they are close to receiving their next free coffee. Thus, shorter distance to an end state leads to increased effort aimed at achieving the desired outcome.

Together, these findings illustrate that an individual's likelihood of exhibiting behavior directed toward reaching an outcome increases as the perceived distance to the outcome, defined in the aforementioned studies as a function of the outcome itself (e.g. "I need to purchase ten cups of coffee to receive a free coffee") as well as prior progress toward the outcome (e.g. "I've purchased seven cups of coffee"), decreases. We seek to extend this line of reasoning to situations in which individuals are approaching a deadline. Based on these findings, and considering the fact that individuals also use temporal distance to an outcome as a means of inferring its proximity (Gjesme, 1981), we propose that individuals will be more likely to forgo consumption activities in favor of meeting a deadline as it approaches, or as distance to the deadline decreases [see Figure 1(a)].

In addition to situations in which individuals are approaching a deadline, the present research also considers behavior that takes place after a deadline has passed. Next, we explore changes in behavior that occur when individuals have negative feedback related to goal progress to explore consumption behavior post-deadline.

I'm running late – I guess I'll stop for coffee

When late, one's distance from a deadline increases as that individual becomes late, and then possibly later. Extant research demonstrates that, in general, negative affect results from negative feedback, indicating that one is not progressing toward a desired end state (e.g. though you are currently in your office you intended to be at your meeting five minutes ago; Bagozzi *et al.*, 1998; Bagozzi and Dholakia, 1999; Carver and Scheier, 1998). When individuals experience negative affect, actions which help repair positive mood states tend to be sought out (Connolly *et al.*, 1997; Klinger, 1975; Tice *et al.*, 2001). Indeed, there is much work to indicate that emotional distress and negative affect causes individuals to focus on immediate gratification, sacrificing longer-term goals

Figure 1 Likelihood of consumption pre- and post-deadline

(Tice *et al.*, 2001). In other words, negative affect creates the motivation to engage in behaviors that restore positive feelings, thus giving priority to affect regulation strategies (e.g. consumption) over self-regulation strategies (e.g. minimizing lateness).

Prior research demonstrates that consumption activities can serve to compensate for negative affective states. For instance, Woodruffe (1997) demonstrates that shopping can serve as a means of affect regulation, while other work shows that individuals experiencing negative affect consume larger quantities of unhealthy or hedonic foods (Garg *et al.*, 2007; Mick and DeMoss, 1990; Tice *et al.*, 2001). For example, Garg *et al.* (2007) find that those watching a sad movie ate 28 per cent more buttered popcorn than those watching a happy movie. Consistent with this, several studies link stress and daily hassles to the consumption of unhealthy foods as a means of affect regulation, such that people consume more indulgent food items when stressed (Grunberg and Straub, 1992; Oliver *et al.*, 2000). The tendency to affect regulate with indulgent food arises with emotional and social daily hassles, such as those that are interpersonal, ego-threatening and work-related (O'Connor *et al.*, 2008). Even the daily “pain” of paying with cash (vs credit) can serve as a motivator to affect regulate via the choice of more indulgent (i.e. higher calorie) food items (Bagchi and Block, 2011).

Based on these findings, and due to the negative affect which is likely to accompany missing a deadline, we predict that once a deadline has been missed individuals will be more likely to switch their focus from the deadline to consumption activities that serve to remedy negative affective states. This will result in further movement away from on-time arrival [Figure 1(b)]. As discussed previously, we do not expect individuals who are on time to experience such negative affect, as they do not have negative feedback regarding their progress toward the outcome of on time arrival.

Note that the “what the hell” effect described in the goal literature supports our theorizing that actions that further hurt performance, like making a purchase when already late, are

likely to occur after evidence indicating goal failure (Cochran and Tesser, 1996; Polivy and Herman, 1985; Soman and Cheema, 2004). The “what the hell” effect was specifically articulated to describe the behavior of people who fail at daily goals related to restricted consumption (e.g. dieters and alcoholics). For example, a dieter who consumes a piece of chocolate cake may decide to continue to indulge in other forbidden foods for the remainder of the day. Importantly, whether it is a piece of cake or an entire cake, an individual renders the goal (i.e. the diet) “ruined”, and, therefore, subsequent inconsistent behavior does not hinder progress because the individual has effectively disengaged from the goal or, in other words, rendered it inactive (Cochran and Tesser, 1996). While supportive of our proposed account of behavior after a deadline has passed, we differ from this line of research in critical ways. First, central to the “what the hell” effect is the premise that failing to meet a restriction goal leads to excessive consumption of the same restricted item. Notably, this type of behavior does not result in a reduction of negative affect, but ultimately increases negative thoughts and emotions (e.g. dieters and drinkers who consume more after an initial violation feel worse; Adams and Leary, 2007). Moreover, the “what the hell” effect explicates behavior due to the coding of the lapse as a goal failure, rendering it inactive for the short-term. In contrast, our theorizing is predicated on delaying a still active goal (i.e. despite being late, you still intend to arrive at the meeting/appointment) for the sake of a goal that serves as a means of repairing negative affect.

To summarize, we propose that individuals approach consumption activities differently, depending on whether they are early vs late; while behavior directed toward the consumption activity is likely to decline in favor of on time arrival as a deadline approaches, it is likely to increase once individuals miss and continue to move away from a deadline (Figure 1) as a means of repairing negative affect. We test this proposition, as well as the affect regulatory process proposed to underlie it, in two lab experiments.

In our first study, presented next, we sought to explore the specific pattern of behavior that individuals demonstrate in relation to a deadline or, more specifically, to test our prediction that behavior directed toward a consumption activity will decline in favor of on time arrival as a deadline approaches, and then increase once an individual misses and continues to move away from a deadline (Figure 1). To capture this pattern of behavior in our first study, we manipulated time to/from the deadline within-subjects, such that participants reported their likelihood of engaging in a consumption activity at a series of moments ranging from very early (i.e. 20 minutes pre-deadline) to very late (i.e. 20 minutes post-deadline). Further, to gain insight into the role of affect regulation in this process, we also manipulated the presence of penalties associated with the deadline. Prior research demonstrates that the failure to achieve outcomes associated with negative incentives can result in even higher levels of negative affect than those with no such penalties (Klinger, 1975; Wicker *et al.*, 1994). Thus, in line with our proposed process of affect regulation, we expect that associating deadlines with penalties will accentuate the likelihood of exhibiting our proposed pattern of behavior in relation to a deadline.

Study 1: consumption patterns in relation to a deadline

Participants and procedure

One-hundred and sixteen undergraduate students (55 per cent female; $M_{age} = 23.1$, ranging from 19 to 45) from a large northeastern US college participated in the study in partial fulfillment of course requirements.

Participants were first presented with a hypothetical scenario in which they were asked to imagine that they are headed to a class starting at 2:00 p.m. when they realize that they are craving a cup of coffee, or a different favorite beverage. Participants were told that, according to their estimates, it would take about two minutes to purchase the beverage and make it to class; if they decide to forgo the purchase, they would arrive at class any second. The penalties associated with the deadline were manipulated between-subjects (penalty vs no penalty). Participants in the penalty condition were told that the penalty associated with arriving late to class was being “marked down late on the class record” and those in the no penalty condition were told that there was “no penalty for late arrival”. In a pretest, participants ($N = 40$) rated the penalty for the former scenario ($M = 4.00$, $SD = 1.17$) to be significantly higher than those in the latter one ($M = 3.10$, $SD = 1.33$; $t(38) = 2.27$, $p < 0.05$). All participants were told that there were no incentives for arriving early.

To assess consumption likelihood at various points occurring before and after the deadline (i.e. 2:00 p.m.), participants were asked to report their likelihood of purchasing the beverage at a series of times prior to and after the deadline by circling the appropriate response on a seven-point scale (1 = “would definitely not buy”, 7 = “would definitely buy”). Respondents indicated their consumption likelihood at 41 different points in time: from 20 minutes early to on time and from on time to 20 minutes late.

Next, to account for individual differences in perceptions of lateness participants were asked to indicate at what point (i.e. from 20 minutes early to 20 minutes late), they would consider themselves to be late to class. To assess the point at which individuals deactivate or disengage from their goal of on time arrival, participants were next asked to report the time at which they would abandon their goal of on time arrival, or deem themselves “so late that they simply would not go to class”. Participants also reported their gender, as prior research indicates that gender can significantly affect perceptions of time and lateness (Kellaris and Mantel, 1994; Krishnan and Saxena, 1984; Rammsayer and Lustnauer, 1989).

Results

Manipulation checks

Our results revealed that participants perceived themselves to be late at some point at or after the deadline ($M = 5.25$ minutes after class start time, 95 per cent CI [4.34, 6.17]). In addition, supporting the contention that the observed pattern of behavior is not due to individuals completely abandoning effort directed toward their goal (i.e. in line with the “what the hell” effect) but rather merely delaying on time arrival, the time at which individuals reported that they would abandon efforts occurred at a point occurring more than 20 minutes after the deadline (and, therefore, after the end time reflected in the data; $M = 32.8$, $SD = 13.8$).

Consumption in relation to a deadline

For any given participant, the predicted focal effect is characterized by a reversal in the likelihood of purchase at some point past the deadline. To detect the presence of this effect, a linear mixed model was estimated; the model contained a quadratic term (to allow for possible reversal), regressing the likelihood of consumption on the full factorial of penalty (between-subjects), time in relation to the deadline (-20 to 20 , within-subject), the quadratic polynomial effect of time (within-subject), and gender. Terms containing both the linear and quadratic effects of time were omitted. To properly account for the serial correlation among the repeated measures obtained from each participant arising from the temporal nature of the dependent variable (consumption likelihood at each point in time), a first-order autoregressive covariance structure was specified within-subject [*n.b.*, the AR(1) specification also resulted in a substantial improvement in the Bayesian Information Criterion and log likelihood compared with other covariance structures]. This analysis resulted in a whole model log likelihood of 9,973 [$\chi^2(1) = 9,442$, $p < 0.0001$, $MSE = 1.95$, $\rho_{AR} = 0.94$], and revealed significant effects for penalty [$F(1, 111) = 7.64$, $p = 0.007$], centered time [$F(1, 4,533) = 376$, $p < 0.0001$], the quadratic effect of time [$F(1, 4,533) = 37.3$, $p < 0.0001$] and the quadratic time by penalty interaction [$F(1, 4,533) = 16.7$, $p < 0.0001$]. A marginally significant effect was obtained for centered time by penalty [$F(1, 4,533) = 3.22$, $p = 0.07$] and gender was not significant ($p = 0.96$).

Taken together, the model results strongly support the predicted pattern of behavior; specifically, the coefficient of the quadratic effect of time observed in the model indicates that the likelihood of engaging in consumption first decreases and increases once individuals have missed and continue to

exceed the deadline. Moreover, and as predicted, the coefficient of the quadratic effect demonstrated in the time by penalty interaction indicates that the effect of time is larger, on average, when there is a penalty compared to when there is not. While not every participant demonstrated this pattern, enough respondents displayed the predicted effect that it appears in the aggregate results.

The role of penalties

While the results of the prior analysis demonstrate the predicted pattern of behavior at the aggregate level, the mixed model estimates make it difficult to gain insight into whether any individual participant demonstrated the proposed pattern and, importantly, to test the prediction that the association of a deadline with a penalty increases the likelihood of demonstrating this effect at the individual level. To examine the effect at the individual level, each participant's individual-level regression coefficients were extracted from the mixed model and were used to create plots of the predicted likelihood of purchase for each participant across the full range of time. Three independent raters then classified each participant's pattern of responses as either exhibiting the predicted pattern (i.e. a decreasing consumption likelihood that subsequently increases) or not. Raters were blind to any information regarding the predicted effects; they were only given the plot depicting each participant's reported behavioral pattern and the criterion to be used for classifying a participant as displaying the predicted pattern of behavior – that is, that the respondent's consumption likelihood changed from higher likelihood to lower and then back to higher across the allotted time (i.e. from 20 minutes prior to 20 minutes after the deadline; see Figure 2, panel a for the response pattern of a typical participant demonstrating the effect). Thus, respondents reporting a constant likelihood of purchasing the beverage and respondents with a continuously decreasing likelihood of purchasing the beverage (which, therefore, never reversed) were classified as not displaying the predicted behavioral pattern (see Figure 2 panel b for the response pattern of a typical participant not demonstrating the predicted pattern).

Results of the classification revealed very high levels of inter-rater agreement as measured by the kappa statistic [$\kappa(1, 2) = 0.98$, $\kappa(1, 3) = 0.96$, $\kappa(2, 3) = 0.95$; Agresti, 1990; Cohen, 1960]. These levels of agreement reflect the fact that only four participants out of 116 were classified differently by

the three raters. Discrepancies were resolved by post-rating discussion until consensus was reached. A Bowker/McNemar test of symmetry of classification differences was nonsignificant for all pairs of raters.

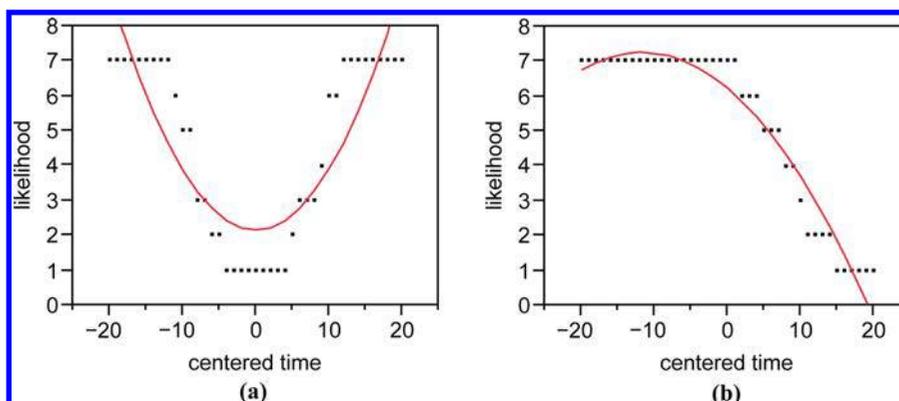
Once each participant was classified as either exhibiting the predicted pattern of behavior or not, a logistic regression was estimated, which modeled the probability of exhibiting the pattern as a function of the association of a deadline with a penalty, gender and their interaction. Results revealed a whole model log likelihood of 1,431 [$\chi^2(3) = 7.67$, $p < 0.05$] and a significant effect of penalty [$\chi^2(1) = 6.23$, $p = 0.01$]. As predicted, when there were penalties associated with lateness, the probability of exhibiting a decreasing purchase likelihood followed by an increased likelihood was higher, compared to when there were no penalties for late arrival (mean probability of 0.46 vs 0.25). No differences were observed across genders.

This result is robust given that the manipulation of lateness here does not account for individual differences in perceptions of lateness; in other words, while one individual may feel that arriving at class five minutes after the start time constitutes late arrival, another may view this as on time arrival. Importantly, controlling for the time at which each individual respondent considered herself late strengthens the results of the model and effects [whole model $\chi^2(3) = 9.87$, $p = 0.02$, penalty $\chi^2(1) = 6.74$, $p = 0.01$, late $\chi^2(1) = 3.80$, $p = 0.05$, interaction nonsignificant] and the difference in predicted probabilities (0.56 vs 0.29) is greater than without this covariate.

Discussion

The results of the first study provide support for the contention that the likelihood of engaging in a consumption activity – in this case the decision of whether or not to purchase a beverage – will decline when approaching a deadline and subsequently increase once an individual has missed the deadline. The moderating role of penalties for missing a deadline provides insight into the circumstances likely to accentuate this effect, as well as the process underlying the observed results. The results reveal that a penalty for late arrival accentuates the likelihood of demonstrating the proposed pattern of behavior in relation to a deadline, in this case nearly doubling the likelihood of exhibiting the pattern. Given that the association of goals with penalties leads to increased negative affect when individuals

Figure 2 Study 1. Individual level model results depicting consumption likelihood in relation to deadline



fail to achieve a goal (Klinger, 1975; Wicker *et al.*, 1994), this provides initial support for the proposed process of affect regulation.

To build on these findings and to provide further support for the contention that consumption when you are late acts as a means of reducing negative affect, we next sought to explore the impact of lateness on choice outcomes. Because prior research demonstrates that individuals are likely to attempt to regulate negative affect via the selection of highly indulgent food options (Garg *et al.*, 2007; Tice *et al.*, 2001), further exploring the impact of lateness on choice helps explicate our proposed process and also carries implications for consumer health and well-being. Thus, in our next study, we explore the choices that individuals make when they are on time vs late.

In this study, individuals were presented with a scenario in which they were either on time or late. Participants were next presented with a café menu in which the indulgent nature of the options from which individuals were asked to make a selection varied. Thus, in addition to choosing between the act of purchasing the beverage and not purchasing the beverage, participants made a choice from a menu of café options. If affect regulation underlies the results observed in the prior studies, then in line with extant research that shows that the selection of more indulgent food items serves to remedy negative affective states (Garg *et al.*, 2007; Tice *et al.*, 2001), the choice of options should vary based on whether or not an individual is late and based on individual differences in the tendency to regulate negative affect via consumption. Prior research has shown that individuals vary in their expectancies regarding affect regulation, or their beliefs that certain behaviors will remedy a negative affective state or lead to a more positive one (Catanzaro and Mearns, 1990). Along these lines, individuals with relatively higher tendencies to regulate negative affect via consumption behavior were expected to select highly indulgent items as a means of reducing negative affect when late, but not on time.

Study 2: what you choose when you are late

Participants and procedure

Sixty-six undergraduates (55 per cent female; $M_{age} = 19.6$, ranging from 18 to 21 years) from a large northeastern college in the USA who were not currently dieting participated in the experiment to fulfill a course requirement.

Participants were provided with a scenario in which they were told that they were on their way to class when they realized that they were craving a cup of coffee. We opted to utilize similar beverage consumption scenarios in this study for several reasons. First, individuals frequently encounter consumption opportunities involving food and beverages (Dolliver, 2009). This point was well-supported in a pilot study; a majority of respondents (55 per cent) reported that the food and beverage category was the one in which they most frequently made purchases. In addition, while an extensive body of consumer research has explored food choices (e.g. chocolate cake vs fruit salad), the rising consumption of sugary beverages – like flavored coffee drinks – is also a noted contributor to the US obesity epidemic (Institute of Medicine, 2012).

The scenario included a between-subjects manipulation of lateness, such that participants were told that they would arrive

either “right on time” (not late) or “about ten minute late” (late) for the class. They were then told that buying the coffee would take an additional four minutes, based on the line and the time to prepare the beverage, such that purchasing the coffee would make them “late” or “later” to class, corresponding to their assignment to the not late or late condition, respectively. To control for the effects of any perceived consequences associated with late arrival, all participants were told that there were neither consequences for arriving late nor incentives for arriving early to class.

After reading the scenario, participants were presented with a café menu consisting of three options that varied in their perceived level of indulgence:

- 1 House blend coffee.
- 2 Creamy cappuccino.
- 3 Decadent chocolate latte (Appendix).

A pretest conducted with 19 participants taken from the same student population as the main study demonstrated that these items varied in terms of their level of hedonic reward. Pretest participants were presented with a menu consisting of a description and picture of the three options (Appendix) with the order of item presentation counterbalanced. Each participant rated their level of agreement on a five-point scale for the following statements taken from Garg *et al.* (2007) for each of the three beverage options: “makes me feel good”, “tastes great”, “lifts me up when I am down”, “is pleasurable” and “is comforting”. The mean response to the five statements served as an indulgence score for each item (all $\alpha > 0.84$). The indulgence scores from the pretest were analyzed in a mixed design ANOVA with item (coffee vs cappuccino vs latte) as a within-subject factor and the order of the item presentation as a between-subjects factor. The analyses revealed that the hedonic scores differed by item [$F(2,32) = 9.30, p < 0.01$]; planned contrasts revealed that the latte was perceived as more indulgent than cappuccino [$p < 0.05$], and that the cappuccino was rated as more indulgent than the coffee [$p < 0.05$; $M_{latte} = 3.79, M_{cappuccino} = 3.33, M_{coffee} = 2.75$]. The order in which the items were presented did not impact the results [$F(4,32) = 0.26, p = 0.90$].

Upon viewing the menu, study participants were asked to choose from a choice set consisting of “purchase nothing” or one of the three aforementioned items (see Appendix). The pretest results demonstrate that this choice set represents an ordinal measure of indulgent product choice, with the least indulgent choice being to abstain and with each consecutive option more indulgent than the previous (i.e. coffee, cappuccino or latte, respectively).

Participants next responded to three items taken from the Negative Mood Regulation scale (Catanzaro and Mearns, 1990), which assesses individual differences in expectancies regarding affect regulation. These items were chosen based on their ability to capture the specific tendency to regulate affect via consumption, rather than the more general means reflected in other scale items. Respondents rated their agreement with the following statements, each following the stem “When I’m upset I believe that”: “I can feel better by treating myself to something I like”, “Seeing a movie won’t help me feel better (reverse-scored)” and “Going out to dinner with friends will help”. Responses were provided on a 5-point scale (1 = “strongly

disagree”, 5 = “strongly agree”) and were averaged to form a composite measure of affect regulating tendency ($\alpha = 0.71$).

To ensure that the manipulation of lateness was perceived as intended, participants were asked to rate the extent to which they considered themselves to be late in the scenario (1 = “not at all late”, 7 = “very late”); this served as a measure of perceived lateness. They were also asked to report the time at which they would consider themselves late enough to completely abandon the goal of attending class (i.e. to not go). Finally, participants reported their gender as well as a rating of the frequency with which they consume coffee (1 = “very infrequently”, 7 = “very frequently”).

Results

Manipulation checks

First, a manipulation check was conducted by estimating an ANOVA of participants’ perceptions of lateness on the manipulation of lateness. As expected, the results revealed a positive effect of manipulated lateness [$t(64) = 4.72, p < 0.0001$, with those in the late condition considering themselves to be later than those in the not late condition]. In addition, the time at which individuals reported that they would abandon efforts to arrive at class occurred at a point occurring more than seventeen minutes after the deadline (and, therefore, after the period considered in both the not late and late conditions; $M = 17.4, SD = 7.98$).

Indulgent choice

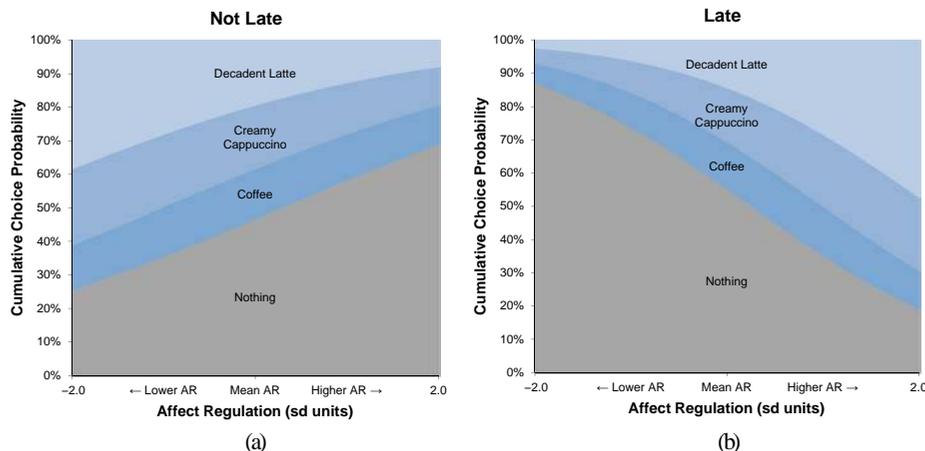
To test the hypotheses, an ordinal logistic regression was estimated using manipulated lateness, mean-centered affect regulation and their interaction to predict choice. The order of item presentation, gender and frequency of coffee drinking were included as covariates in the model. Results revealed a whole model likelihood of 150.5 [$\chi^2(7) = 17.2, p = 0.02$] and a significant affect regulation by lateness interaction [$\chi^2(1) = 6.66, p = 0.01$]. Only the simple effect of gender was significant among the covariates [$\chi^2(1) = 7.26, p = 0.01$], which reflects a main effect of males being significantly less likely to purchase

indulgent drinks than females. No interactions including any covariate were significant in any analysis.

As expected, the observed interaction between lateness and affect regulation arises because the lower a participant’s affect regulating tendency, the more likely they were to select *less* indulgent options when they were late, compared to when they were not late; this effect reverses as affect regulation increases, such that higher affect regulating tendency is associated with the choice of *more* indulgent options when late. Figure 3 displays the cumulative probability of choosing each level of choice as a function of affect regulation and lateness. Here, the probability of choosing a given indulgence level is equal to the difference between the top and the bottom of the option’s color band at any specified level of affect regulation. Indulgent choices are plotted in shades of blue, and the least indulgent choice (no purchase) is plotted in grey. The predicted interaction can be clearly seen from the reversal in slope of the predicted probabilities between the two panels. In the not late condition [Figure 3(a)], indulgent product choice decreases as affect regulation increases; when not late, the probability of choosing the two most indulgent options *decreases* from 61 to 19 per cent as affect regulation changes from its 5th to its 95th percentile. In contrast, in the late condition [see Figure 3(b)], the probability of choosing the two most indulgent choices *increases* from 10 to 62 per cent as affect regulation changes from its 5th to its 95th percentile. Interestingly, and as seen in Figure 3, most of the change in probability occurs from decreases in choice of the least indulgent option (i.e. non-purchase) in favor of selecting the most indulgent option.

Note that the preceding analysis is actually conservative because the manipulation of lateness does not take into account individual perceptions regarding what constitutes late arrival (see Study 1). To account for individual heterogeneity in the perception of lateness, the analysis was replicated using perceived lateness (a continuous measure) in place of manipulated lateness. This strengthened the results [whole model likelihood = 147, $\chi^2(6) = 24.6, p = 0.0004$, lateness $\chi^2(1) = 11.5, p = 0.001$, perceived lateness by affect

Figure 3 Study 2. Cumulative probability of choosing each level of indulgence as a function of assigned lateness, affect regulation and their interaction



Notes: When not running late, probability of choosing an indulgent option is positively related to affect regulation; when running late, the reverse is true

regulation interaction $\chi^2(1) = 8.35, p = 0.001$ and gender $\chi^2(1) = 4.69, p = 0.03$]. These patterns replicate and strengthen those observed in the prior analysis and the graphical display and interpretation of these results are substantively the same as those seen in Figure 3 and discussed here (but with larger differences from low to high affect regulation; graphic available from the authors).

Taken together, these results strongly support the affect regulation-based account of our findings. As predicted, the lower a participant's affect regulating tendency, the more likely they were to select *less* indulgent options when late (vs not); the significant (perceived or assigned) interaction of lateness and affect regulation indicates that this effect reverses as the tendency to regulate negative affect increases, with high affect regulators selecting *more* indulgent items when they were late (vs not).

Discussion

The results of this study show that the choice of items varies with both lateness and individual differences in expectations regarding one's ability to regulate affect via consumption. Specifically, our results show that individuals with low affect regulation expectancies select less indulgent options when they are late (vs on time), while those with stronger expectancies select more indulgent options when they are late (vs on time). This pattern of results supports our proposed affect regulation process and, moreover, provides insight regarding the choices that consumers make when they are late vs not late.

Because our second study considers only hypothetical choices, we sought additional evidence as to the effect of lateness on choice by assessing the actual behavior of 25 university café patrons. Customers entering a university café were approached by a research confederate and asked if they were either facing a deadline in the next ten minutes (e.g. a class, work or meeting start time) or if they had missed a deadline in the last ten minutes and, based on the amount of time they believed it would take for them to place their order and make it from the café to their destination, whether they would be late (or not) for their scheduled engagement (note here that because our work considers behavior in relation to a deadline, we did not include in our sample those individuals who indicated that they were not facing a deadline). This allowed us to classify individuals as either late or not late. The confederate asked what the individual intended to order, and then confirmed this information by listening when the counter order was placed. The order information was cross-referenced with publicly available calorie information, and the total order calories served as measure of indulgence. Supporting the results of our lab study, our ANOVA results revealed that late individuals ($N = 10$) placed higher calorie orders than individuals who were on time [$N = 15; M = 180$ vs $M = 117, F(1,24) = 4.3, p = 0.05$]. While we recognize that the findings of this supporting study are limited by the small sample size, it is consistent with field studies in the food domain that use relatively small sample sizes to demonstrate a basic effect (Wansink *et al.*, 2006; Raghunathan *et al.*, 2006). Thus, we demonstrate some preliminary evidence that our pattern of behavior holds in situations involving actual choice in real consumption settings.

Next, we discuss our findings in more depth, as well as the implications of our empirical results for research and practice.

General discussion

In this research, we explored consumption decisions for individuals facing deadlines to consider how and why consumption behavior changes when individuals are approaching a deadline (i.e. when they are early) vs after they have passed a deadline (i.e. when they are late). We demonstrate that while individuals are more likely to refrain from consumption in favor of being on time as a deadline approaches, many individuals are likely to abandon efforts aimed at reaching deadlines in favor of engaging in consumption activities once they are late. This effect is accentuated when missing a deadline carries a penalty. We demonstrate that affect regulation processes underlie this effect; the choice of more indulgent options over less indulgent ones helps to remedy one's negative affective state.

Contributions to extant theory

This research makes several key contributions to the literature. First, although time scarcity is identified as a major source of goal conflict (Carver and Scheier, 1998), extant literature is silent with respect to the manner in which individuals consume in relation to a deadline – or, in other words, how consumption changes based on whether one is early or late. Our work contributes to extant time and goal literature that suggests that individuals deal with conflicting activities by prioritizing and acting in accordance with the activity that is assigned the highest value (Denton, 1994; Dodge *et al.*, 1989) by showing that consumers approach consumption opportunities differently based on whether they are early vs late. Further, while the majority of consumer research exploring distance has focused on situations in which individuals are approaching a desired end state (Kivetz *et al.*, 2006), our work explores both conditions in which individuals are approaching end states (i.e. pre-deadline) and, uniquely, where individuals are moving away from such reference points (i.e. post-deadline). We demonstrate a process by which individuals temporarily switch to an alternative pursuit and, because they are not able to completely abandon the negative affect that accompanies a failure to behave in line with their goal, their negative affective state drives their behavior with respect to consumption.

Practical implications

Practically speaking, these findings demonstrate the beneficial influence of deadlines; individuals are more likely to strive toward reaching a deadline when they are approaching the point of being late. On the other hand, deadlines can be detrimental once they have been missed; rather than attempting to minimize the time by which a deadline is exceeded, our results illustrate the tendency to switch behavior toward available consumption activities, thus increasing lateness. This behavioral pattern has implications for consumers and marketing managers. By highlighting that affect regulation underlies consumption when individuals are late, our findings suggest that time may play a role in driving consumers toward indulgent food and beverage options. In fact, increasing time scarcity – driven by sociocultural trends that impose constraints on time resources, such as dual career households and year round employment – are proposed drivers of dietary trends including the increased consumption of fast food and pre-prepared food items (Jabs and Devine,

2006). Consistent with this, our demonstration that lateness impacts both consumption likelihood and indulgent choice is the first to empirically demonstrate the role of time (or lack thereof) in dietary decisions made at the individual level.

This work also builds on extant research demonstrating the crucial role that food plays in regulating negative affect and contributes to the growing literature on the situational characteristics that influence dietary decision-making (Chandon and Wansink, 2011). With recent statistics reporting that at least 15–20 per cent of the American population considers themselves to be “consistently late”, the potentially frequent and indulgent food and beverage purchases made by these individuals may contribute to increasing health problems associated with an unhealthy diet (ABCNews, 2007, “Running late and wasting billions”). As such, our findings important implications for consumers and researchers interested in identifying and understanding the psychological biases that underlie food- and beverage-related behaviors so that strategies that promote healthy decision-making in this domain might be developed. For instance, perhaps making consumers aware of their tendency to consume indulgent foods when late may help them to correct for the tendency to regulate affect via indulgent food consumption in favor of alternative activities. Managers, on the other hand, might do well to promote “healthy indulgences” in outlets that may be frequently visited by consumers facing deadlines (e.g. work cafés, train stations, etc.).

Directions for future research

While our work considers the impact of externally imposed deadlines, future research might also consider the role of self-set deadlines. While self-set deadlines have been shown to help individuals overcome procrastination and enhance performance, they have been shown to be somewhat less effective than those that are externally imposed (Ariely and Wertenbroch, 2002). Future research might explore lateness-driven consumption patterns when deadlines are self-set vs externally imposed. Similarly, while our work demonstrates that externally imposed penalties increase the likelihood of consumption when individuals are late, additional work might evaluate whether self-imposed penalties have a similar effect.

Here, we consider affect regulation via the choice of food and beverages. Certainly, a more positive state might come from other behaviors (e.g. shopping; Woodruffe, 1997) or indulgences (e.g. a “splurge” purchase; Fitzmaurice, 2008) that are shown to remedy negative affective states. Along these lines, future work might consider other types of consumption behavior that serve to similarly regulate negative affect experienced when individuals have missed a deadline.

Moreover, prior research has shown that anticipated negative affect in response to individual efforts aimed at avoiding negative outcomes (e.g. striving to be on time to avoid having points from one’s attendance grade deducted) has a greater impact than anticipated positive affect in response to efforts associated with positive outcomes (e.g. striving to be on time to acquire extra credit) on behavioral intentions directed toward those outcomes (Wicker *et al.*, 1994). Based on this, reframing a penalty-associated deadline as a positive outcome to approach might alter the results presented here. Additional work might consider this, as well as other ways of classifying both deadlines and penalties, to

consider whether the manner in which the conceptualization of outcomes changes behavior in relation to a deadline.

Considered in conjunction with the role of penalties that accompany missed deadlines, our results allow insight into the policies that might attenuate the observed effect of lateness on consumption. For example, while our research indicates that the presence of penalties accentuates the pattern of decreasing consumption likelihood when approaching a deadline and increasing consumption likelihood once a deadline has been missed, restructuring the manner in which penalties are imposed might impact consumers differently. Rather than merely imposing a penalty (e.g. a two-point grade deduction when you are late), it would be interesting to consider behavioral responses to graded penalties (e.g. a two-point grade deduction for the first five minutes you are late and two more for the next five) to investigate the relative contribution of penalty imposition and penalty magnitude.

While this work considers the role of individual differences related to mood regulation in influencing consumer decisions to engage in consumption opportunities when they are early vs late, other factors might be influential in this process. For instance, prior research has shown that, compared to failure-oriented individuals, those with a success-orientation tend to display greater achievement motives and exert more energy toward goal achievement as a goal approaches in time (Halvari, 1991a, 1991b). Given their demonstrated impact on motivation and goal striving, it is possible that these, or other individual differences variables, could impact the effect of lateness on consumption.

The present research considers activities that conflict in time and, as such, explores one type of distance – temporal distance – on behavior. This builds on prior research that demonstrates that perceptions of progress toward a desired outcome can impact behavior to illustrate the effect of the temporal element of psychological distance on behavior. In addition to time, progress might be measured by other forms of distance, such as spatial distance (Heath *et al.*, 1999; Fujita *et al.*, 2006) or social distance (Akerlof, 1997). For instance, a runner with a goal of completing a race would likely estimate progress by the amount of measurable distance between her current position and the finish line and an individual who wishes to join a desirable social circle would evaluate progress by the degree of closeness to relevant others. Along these lines, future research might consider alternative forms of psychological distance by which individuals evaluate progress and their effect on behavior both before and after reaching a behavioral reference point.

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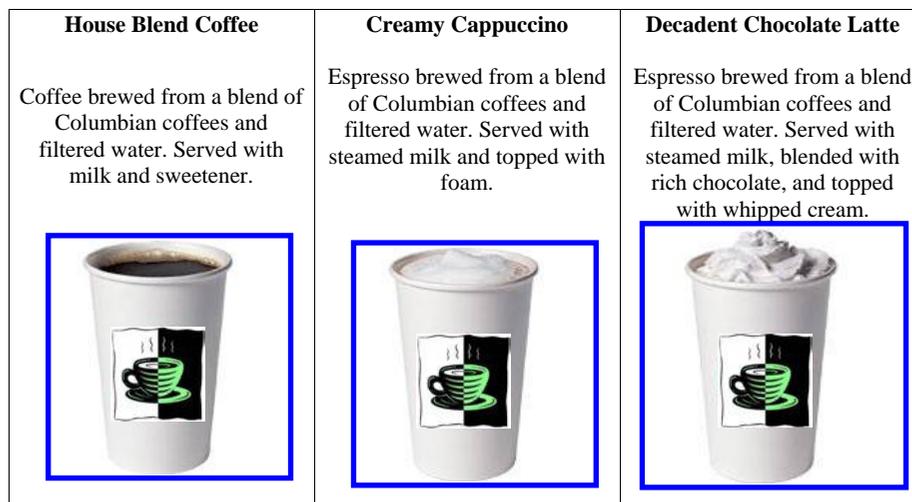
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Appendix 1

Figure A1 Study 2 stimuli



Corresponding author

Beth Vallen can be contacted at: beth.vallen@villanova.edu