The Role of Holistic Processing on Enjoyment During Simultaneous Consumption

Robert Smith, Ohio State University, USA
Joseph P. Redden, University of Minnesota, USA

People frequently consume multiple stimuli simultaneously, such as listening to music while eating. We find that these combined experiences are more enjoyable when processed holistically versus analytically/locally. Primes or individual differences that focus attention on the whole experience make the individual components seem more complementary and the experience more coherent.

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Temporal Dynamics of Consumption Experiences

Chairs: Sarah Wei, University of Alberta, Canada
Masha Ksendzova, Boston University, USA

Paper #1: The Primacy of Experience: Comparing the Contributions of Anticipation, Experience, and Memory to Total Utility
Masha Ksendzova, Boston University, USA
Michael I. Norton, Harvard University, USA
Carey K. Morewedge, Boston University, USA

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Tom Meyvis, New York University, USA
Heeyoung Yoon, New York University, USA

Paper #3: The Imminent-End Effect: How the Approaching End of an Experience Affects Enjoyment
Sarah Wei, University of Alberta, Canada
Gerald Häubl, University of Alberta, Canada

Paper #4: The Role of Holistic Processing on Enjoyment During Simultaneous Consumption
Robert Smith, Ohio State University, USA
Joseph P. Redden, University of Minnesota, USA

SESSION OVERVIEW

"If you come at four in the afternoon, I’ll begin to be happy by three." - Antoine de Saint-Exupery, The Little Prince.

Hedonic experiences are multi-faceted and often consist of a consumption timeline, rather than isolated events. This timeline entails anticipation, the experience itself, and the memories left behind. Consumers also make forecasts about their experiences and relevant features, such as mindfulness and consumption norms. Even within one phase of a hedonic experience, consumers encounter meaningful changes. Further, hedonic experiences do not always occur independently, and the nature of their overlap can affect the overall pleasure consumers derive from the combined engagements.

Thus, timelines of a consumption experience help shape its hedonic value. In this session, we ask, how do consumers evaluate their experiences at different stages on the consumption timeline, and what role do these evaluations play in the total hedonic value of their consumption experiences? Four papers examine how consumers ascribe value to features of the timeline, as well as the psychological processes by which such evaluations affect their hedonic experiences.

The first two papers speak to how consumers value different features of consumption experiences before, during, and after consumption. First, Ksendzova, Norton, and Morewedge examine how consumers view the relative contributions of anticipation, experience itself, and memory to total utility. They uncover a perceived primacy of experience – a belief that experience, regardless of its duration, contributes most to total utility.

Second, when anticipating an experience, consumers forecast their behavior. However, they cannot always properly anticipate key features of an experience. Meyvis and Yoon demonstrate that consumers overestimate the extent to which product quality affects their consumption amount. Specifically, consumers overestimate their mindfulness and the influence of consumption norms, while underestimating the role of visceral factors specific to the experience.

The following two papers zoom into the timeline within an experience itself. Wei and Häubl examine how knowing a pleasurable experience is approaching its end influences the enjoyment of it. Specifically, when consumers perceive low control over the hedonic quality, the passive contemplation of the imminent end reduces the enjoyment of it; however, when consumers perceive high control, it enhances the hedonic enjoyment through motivating consumers to make better usage of their time.

Further, timelines of hedonic consumption may overlap. Focusing on simultaneous consumption of multiple experiences, Smith and Redden demonstrate that holistic processing (vs. analytical processing) enhances the enjoyment of a combined experience, by increasing the perceived complementary and coherence of it.

Taken together, these papers contribute to a better understanding of how consumers evaluate a consumption experience and associated features while moving along its timeline. We approach this topic by discussing different phases of a consumption experience (Ksendzova et al.; Meyvis and Yoon), the time progression within an experience itself (Wei and Häubl), and combined timelines of multiple experiences (Smith and Redden). This session provides insights into the temporal dynamics of consumption experiences and guidance for marketers on optimizing consumers’ hedonic consumption.

The Primacy of Experience: Comparing the Contributions of Anticipation, Experience, and Memory to Total Utility

EXTENDED ABSTRACT

In his conceptualization of the total utility provided by an event - the total pleasure or pain it afforded across its anticipation, experience, and recollection, Bentham (1789) envisioned a duration-weighted approach. In his view, the assessment of total utility should account for the intensity of pleasure or pain an event incurred at each moment in time by the amount of time pleasure or pain was incurred, irrespective of phase. Current proposals echo this suggestion, assuming that duration weighting is the optimal way to aggregate the total utility of events – the utility provided by their anticipation, experience, and recollection (Kahneman 1999). These models assume that people perceive utility derived from phases of experiences to carry the same weight, an assumption we test in our studies: do people believe that anticipation, experience, and memory contribute equally to total utility, or are some kinds of utility more impactful than others?

In Study 1a (N = 99), we prompted participants to generate examples of three pleasant and three unpleasant experiences lasting five, twenty, or sixty minutes. For each experience, participants then rated the relative contribution of anticipation, experience itself, and recollection (between 0% and 100%) to the total utility provided by that event. A duration-weighting approach would suggest that the utility of experience should contribute less for shorter than longer events. Regardless of event duration, however, participants reported that experience contributes more to total disutility than do anticipation and memory. Additionally, in Study 1b (N = 100), we examined events lasting seconds, minutes, hours, and days, and again found participants rated utility from experience to be the primary contributor, regardless of event duration.
In addition to the perceived contributions of each phase, we examined people’s choice between phases of an event in Study 2 (N = 200). To do so, we first asked participants to generate examples of positive or negative events lasting seconds, minutes, hours, and days. For all listed events, participants then engaged in a thought experiment. Some imagined, for positive events, that they were able to feel pleasure during only one phase of their choosing. Others imagined, for negative events, that they were able to block negative feelings during one phase of their choosing. People more often chose to preserve positive experience and block negative experience, compared to anticipation and memory. Contrary to the duration-weighting approach, the choice of experience did not decrease among shorter events.

Then, in Study 3, we investigated whether people believe that a unit of experience, compared to equal units of anticipation or memory, has greater impact on total utility. We asked participants (N = 100) to imagine going on an enjoyable date—a date which they hypothetically anticipate, experience, and recall each for three hours. Thus, duration of each phase was held constant. Next, participants imagined that one minute was randomly selected from the three hours of each phase and rated the intensity of that minute. For each phase (in random order), they also rated the intensity of five, fifteen, thirty, and sixty minutes. Although people perceived longer time segments as more desirable than shorter time segments, they rated segments of experience as more desirable than equal segments of anticipation and memory.

Considering that people may think of experience-centric events when judging the utility of phases, we also employed more conservative tests. In Study 4a, we asked one group of participants to name events for which a) anticipation, b) the experience itself, or c) its recollection defines the nature of that event. This procedure yielded a list of 270 events that varied on valence (pleasant and unpleasant) and their defining feature (anticipation, experience, or recollection). We then recruited an independent sample (N = 135) and randomly assigned each person to evaluate a unique pair of pleasant and unpleasant events with emphasis on one of the three phases. For each event, participants rated the contribution of each phase as a percentage of an event’s total utility. They perceived experience to contribute more to total utility than anticipation or memory for most events, and to be at least as important as anticipation and memory for events defined by anticipatory or memory-based components (e.g., giving a speech or a honeymoon). We conceptually replicated these findings in Study 4b (N = 100), even though participants in this study rated events they themselves generated.

Next, we again examined weighting by choice. In Study 5 (N = 100), participants generated three pleasant and three unpleasant events defined by anticipation, experience, or recollection. For each example, participants then engaged in a thought experiment. Some imagined (for positive events) that they were able to feel pleasure during only one phase of their choosing. Others imagined (for negative events) that they were able to block negative feelings during one phase of their choosing. For all positive and negative events, participants were in no cases more likely to preserve or block a phase other than experience. Participants chose to preserve positive experience and block negative experience for events defined by their experiential components. More surprisingly, they were also as likely to choose experience as they were to choose anticipation for anticipation-defined events or memory for memory-defined events.

Together, our findings shed light on a lay belief that experienced utility is the primary contributor to total utility, which contradicts the duration-weighted assumptions of class proposals of total utility.

### Consuming Regardless of Quality: Consumers Overestimate the Impact of Quality Differences on the Amount Consumed

**EXTENDED ABSTRACT**

Consumers like quality. They often exert substantial effort to identify the highest quality product, and may pay a hefty premium to acquire it. This behavior is often justified as higher quality products result in more enjoyable experiences and increased satisfaction. Naturally, one would assume that this more enjoyable consumption would translate into an increased amount of consumption. The current research measures people’s intuitions about this relationship between quality and consumption amount, and tests how these intuitions compare to the actual impact of quality differences on consumption.

We propose that people tend to overestimate the impact of quality differences on the amount that they consume. Specifically, we suggest that consumers overestimate the mindfulness of their repeated consumption decisions, which in turn leads them to underestimate the influence of visceral factors such as hunger and boredom (Loewenstein, Prelec, and Shatto 1998) and overestimate the influence of consumption norms (e.g., one should [not] consume high [low] quality products) (Kivetz and Tyler 2006). We tested this conjecture in four studies.

In study 1, participants (N=156) were given two cups with 31 jellybeans each. They tasted one jellybean of each of the two flavors, after which they indicated how much they liked each flavor and selected the flavor they preferred. Participants then predicted how many of the remaining jellybeans of each flavor they would eat during the rest of the session. They then proceeded with other, unrelated studies. At the end of the session, we measured the number of jellybeans each participant had consumed. As hypothesized, participants predicted that the quality difference would have a greater influence on their consumption (M_{Preferred} = 13.4, M_{Not Preferred} = 8.1) than it actually had (M_{Preferred} = 14.0, M_{Not Preferred} = 10.3; F_{Interaction}(1,155) = 5.36, p < .05). Although this suggests that actual consumption was less mindful and discerning than participants anticipated, it is also possible that participants underestimated their desire to seek variety. To rule out this possibility, the next studies varied quality between subjects, which meant that participants only consumed a single jellybean flavor.

In study 2, participants (N=59) again tasted one jellybean of two flavors and rated each flavor. They then indicated which flavor they preferred and predicted how many of each flavor they would eat if they were given a cup of 50 jellybeans. After that, they randomly received one of the two flavors to consume during the remaining time in the session. At the end of the session, we measured the number of jellybeans each participant had actually consumed. Participants again overestimated the impact of quality on their consumption; they predicted they would eat significantly more high-quality than low-quality jellybeans (M_{Preferred} = 18.9, M_{Not Preferred} = 11.5), but ended up eating slightly more of the low-quality jellybeans (M_{Preferred} = 19.7, M_{Not Preferred} = 22.9; F_{Interaction}(1,57) = 10.75, p < .01).

In study 3 (N=110), we extended our investigation to the consumption of cartoons that differed in entertainment value. Participants first saw five cartoons that were randomly drawn from one of two sets of 80 cartoons each. One set of cartoons were pretested to be high-quality (funny), while the other cartoons were pretested to be low-quality (not so funny). To view each cartoon, participants had to enter a short captcha, thus imposing a small cost. Participants next predicted how many of those cartoons they would select to watch (by entering the corresponding captcha) during the next 5 minutes. We
then observed how many cartoons they actually watched from the remaining set of 80 low (or high) quality cartoons. The results replicated the jellybean findings. While participants expected to watch about 11 more cartoons when they were given a high-quality (vs. low-quality) set ($M_{High-quality} = 31.7, M_{Low-quality} = 20.8$), the number of cartoons they actually watched did not differ between two conditions ($M_{High-quality} = 27.3, M_{Low-quality} = 28.3; F_{interaction} = 1.109, p < .01$).

We have proposed that consumers overestimate the mindfulness of their consumption decisions and underestimate the impact of their visceral states (e.g., hunger and boredom) which are less discerning to the quality of the object being consumed. However, it is also possible that the overestimation of the impact of quality is instead being driven by participants’ inadequate accounting for the effects of satiation. While the difference between the two jellybean flavors may be quite apparent initially, this difference may reduce over time as participants get satiated to the flavor they’re consuming (DePaoli and Khan 2014). If participants do not take this into account, they may overestimate the impact of quality, especially with prolonged consumption. To test between these two accounts, study 4 measured how predictions and behaviors diverged over time.

In study 4 ($N=141$), rather than asking participants to make a single prediction, we now asked participants to predict about how much they thought they would eat in the first 5 minutes, 10 minutes, 15 minutes, and 20 minutes of the session. Likewise, the actual consumption was also measured four times. Consistent with underestimating the (non-discriming) impact of hunger, but inconsistent with underestimation of satiation, the overestimation of the impact of quality was most pronounced for the initial consumption phase. During the first five minutes of consumption, quality had less impact on behavior than participants predicted ($M_{Preferred} = 5.2, M_{Not Preferred} = 3.5$ vs. behavior: $M_{Preferred} = 3.7, M_{Not Preferred} = 3.1; F_{interaction} = 1.136, p = .056$) but this was not the case during the last 15 minutes of consumption (prediction: $M_{Preferred} = 8.5, M_{Not Preferred} = 6.6$ vs. behavior: $M_{Preferred} = 5.6, M_{Not Preferred} = 3.8; F_{interaction} < 1$).

Together, these studies indicate that consumers tend to overestimate the impact of quality differences on their consumption amount, an effect that seems to be driven by consumers’ underestimation of the impact of (non-discriming) visceral motivations.

The Imminent-End Effect: How the Approaching End of an Experience Affects Enjoyment

EXTENDED ABSTRACT

How does knowing a pleasurable experience is coming to an end influence its enjoyment? The answer was discussed with consumption experiences that entail repeated episodes of a homogenous nature: consumers enjoy a consumption episode more when they know that it is the last one (O’Brien and Ellsworth 2012; Tsai and Zhao 2016). However, the answer is not clear when an experience is non-repetitive and heterogeneous in nature (e.g., vacations, movies, musical performances, and games). Common intuition suggests that the imminent end of a pleasurable experience can have a detrimental effect on enjoyment, particularly. For example, consumers often dread the end of a vacation and feel sad on the last day. The current research introduces a theoretical framework for how and why the imminent end of a heterogeneous experience impacts consumers’ enjoyment of it.

We propose that a key factor that governs this “imminent-end” effect is the extent to which consumers feel that they can control the hedonic quality of a consumption experience. This subjective judgment of perceived control is influenced by the nature of the experience and by situational factors. We hypothesize that when perceived control over the hedonic quality of an experience is low, consumers’ enjoyment of it depends on the allocation of undivided attention to the specifics of the experience. This is because, when consumers know that a pleasurable experience is approaching its end, the frequent contemplation of the imminent end interferes with their devoting their undivided attention to the experience, thus reducing their enjoyment. By contrast, when perceived control is high, the imminent end increases the perceived scarcity of the experience, thus motivating consumers to make better use of their time, ultimately enhancing their enjoyment of it (Kurtz 2008). Four experiments provide evidence for these predictions.

Experiment 1 demonstrates the hypothesized interaction between imminent end (yes vs. no) and perceived control (high vs. low) in a 2 x 2 between-subjects design. The imminent end was manipulated through progress bars of different lengths: for the same experience, participants saw a progress bar either progressed to its end (imminent end condition) or progressed to its midpoint (no imminent end condition). The perceived control was manipulated through experiences types: in the low perceived control condition, participants watched an enjoyable video; and in the high perceived control condition, participant played a Tetris game that was pretested to be equally enjoyable. We sampled participants’ enjoyment every 30 seconds on an 11-point scale (0-not at all; 10- very much), the last measure of which served as the key dependent variable. Results show that the imminent end reduced enjoyment when perceived control was low ($M_{End}=7.61$ vs. $M_{No End}=8.14; t(559)=-2.13, p=.035$), and increased enjoyment when perceived control was high ($M_{End}=7.51$ vs. $M_{No End}=6.88; t(359)=-2.16, p=.032$).

Experiment 2a examines the psychological process underlying the negative effect of the imminent end. To do so, we introduced experience discretization as a moderator. As we predict that an imminent end reduces consumption enjoyment by interfering with consumers’ undivided attention, partitioning an experience into discrete segments should facilitate consumers’ concentration on the ongoing segment, instead of the distracting information of the imminent end. Experiment 2 employed a 2 (imminent end: yes vs. no) by 2 (experience framing: discretization vs. continuous) between-subjects design, in which all the participants viewed a funny video. In the discretization condition, we partitioned the same video into 30-second segments and told participants to expect to view 5 (imminent end) or 10 (no imminent end) separate videos. When the video-watching experience was framed continuously as a whole, replicating Experiment 1, the imminent end reduced the enjoyment of this video-watching experience ($M_{End}=7.15$ vs. $M_{No End}=7.93; t(302)=-2.05, p=.041$). When the same experience was framed as discrete segments, the imminent end no longer influenced enjoyment of the video-watching experience ($M_{End}=7.98$ vs. $M_{No End}=7.37; t(302)=1.53, p=.13$).

Moreover, a bootstrap analysis ($N=5,000$) found that discretization interacted with imminent end to influence the level of distraction participants had in the video-watching experience ($r=1.39, p=.03$), which reduced enjoyment of the video ($r=-.13, p=.02$). We also found evidence of distraction in a separate follow-up experiment (2b) with video-watching, such that participants needed to click a button to check how much time left. Participants in the imminent end condition checked the progress bar more often than those in the no imminent end condition ($M_{End}=7.17$ vs. $M_{No End}=7.78; t(212)=-2.01, p=.045$), and enjoyed the experience less ($M_{End}=5.21$ vs. $M_{No End}=3.61; t(221)=-2.16, p=.032$).

Experiment 3 extends this imminent end effect into a new domain—food consumption—and shows how an imminent end can enhance enjoyment, using a 2 (imminent end: yes vs. no) by 2 (se-
We explored these questions in two studies that involved simultaneous consumption of multiple stimuli. We found that people enjoyed and desired simultaneous consumption more when they viewed the experience holistically as an integrated experience (versus analytically processed as multiple distinct components). This holistic approach, and the resulting increased enjoyment, can be encouraged through processing style primes or individual trait differences. We develop process evidence showing that these effects for enjoyment are driven by joint categorization into a single integrated experience, which then makes the components seem more related and hence more enjoyable together.

In study 1, 201 MTurk workers began with a Navon task that primes holistic versus analytic processing (Navon 1977). On the computer, participants were presented with a series of “global” letters made up of smaller “local” letters (e.g., a ‘V’ shape made out of ‘D’s). Over 44 trials, participants were asked to report as quickly as possible whether the stimulus contained either of two focal letters. These target letters were always the global letter (e.g. ‘V’) for participants in the holistic processing condition, and always the local letter (e.g., ‘D’) for participants in the analytic processing condition. Participants then spent two minutes simultaneously watching a montage of Monet paintings and listening to classical music. As expected, participants who were primed to process the combined experience holistically enjoyed it significantly more (M=75.3) than participants who were primed to process it analytically (M=61.72, t(96)=3.03, p=.002). They also rated the experience as more of a single coherent experience (p=.024), and reported focusing marginally more on the overall experience versus individual parts (p=.097). These variables both significantly mediated the increased enjoyment, whether analyzed together, independently, or serially.

In study 2, 179 undergraduate participants watched a video of surfing footage and listened to upbeat instrumental rock music for two minutes. They then rated their enjoyment, several process measures, and then completed the “locus of attention” subscale of the Analysis-Holism Scale (AHS; Choi, Koo, and Choi 2003), which measures tendencies toward analytic versus holistic thinking. It includes items such as “it is more important to pay attention to the whole than its parts” (1 = strongly disagree, 7 = strongly agree). The tendency to focus on stimuli in a holistic way, as indicated by higher scores on the AHS, was associated with more enjoyment of the combined experience (r=.24, p=.001), more construal of the combined experience as a single coherent experience (r=.34, p<.001), and more focus on the overall experience versus the individual parts (r=.34, p<.001). This pattern conceptually replicated the results of study 1. Additional measures revealed that higher scores on the AHS were also associated with an increased perception of complementarity between the two stimuli (measured by three items: complementarity, whether the stimuli made each other better, and whether they belong together; α=.92; r=.33, p<.001), and the perception that attention was paid to both stimuli simultaneously as measured by summing the amount of attention paid to each stimulus (r=.17, p=.02). A variety of mediation models suggest that holistic processing enhances enjoyment of combined stimuli by increasing the perceived complementarity of the multiple stimuli and coherence of the combined experience.

Holistic processing involves focusing on the relationship between objects and its field or between components of an object. Analytic processing involves a detachment of an object from its context and the construal of components as independent entities (Nisbett et al. 2001). Interestingly, past research generates conflicting predictions for whether people would enjoy a simultaneous consumption experience more when processing holistically or analytically. On one hand, research on mental accounting suggests that two distinct positive experiences have more hedonic impact than a single one combining them (Thaler 1985; Thaler 1999). This would seemingly predict that expected and realized enjoyment would increase with analytic processing that highlights each contribution to enjoyment. On the other hand, holistic thinkers focus on relationships between objects and are more sensitive to interdependence (Chiu 1972; Masuda and Nisbett 2001), which, for example, results in increased perceptions of fit for brand extensions, especially those with low fit (Monga and John 2007). If these same mental processes increase the perceived complementarity of the multiple consumption objects, or the coherence of the whole experience, holistic thinking may be expected to enhance enjoyment.
they are construed as a single coherent experience (versus multiple distinct experiences occurring simultaneously) based on mental accounting research suggesting that pleasant experiences should be mentally segregated (Thaler 1999). From a theoretical standpoint, this research brings holistic processing theories to bear on multitasking and consumption enjoyment. It also carries implications for both marketers and consumers seeking to maximize enjoyment. Additional studies will be conducted before the conference to examine both the effect of holistic processing on enjoyment for singular experiences, and the potential moderating role of whether the combined stimuli are seen a priori as complimentary.

REFERENCES


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