The Crunch Effect: Food Sound Salience As a Consumption Monitoring Cue
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We show that increased attention to the sound the food makes, or food sound salience, may serve as a consumption monitoring cue leading to reduced consumption. Across three studies, we show a consistent negative relationship between the salience of a food’s sound and food intake.

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A Sensational Session: Understanding the Effect of Sensory Cues on Choice and Consumption Decisions

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Paper #1: The Color of Indulgence: How Dark Color Influences Indulgent Consumption
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   Monica Wadhwa, INSEAD, Singapore
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Paper #2: Strumming the Chords of Your Mind: The Effects of Lyrical Music versus Instrumental Music on Construal Level and Choice
   Xiaoyan Deng, The Ohio State University, USA
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Paper #3: The Crunch Effect: Food Sound Salience as a Consumption Monitoring Cue
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Paper #4: Choice and Quantity in Conflict: Post-Taste Food Consumption and Inferences of Self-Control
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   Anirban Mukhopadhyay, Hong Kong University of Science and Technology, China

SESSION OVERVIEW

Consumers are frequently exposed to a wide range of sensory cues in their consumption environment. Inputs from such incidental sensory cues can have a far reaching impact on consumption preferences (Krishna 2012; Krishna and Schwarz 2014). The primary objective of this session is to contribute to our understanding of sensory marketing by elucidating the interactive relationship between sensory cues and consumer decision making. Each of the four papers included in the session focuses on a different sensory modality, thus allowing for a broad, yet coherent understanding of research on sensory marketing. The first two papers explore the impact of extrinsic sensory cues, color of product packaging and ambient music, on consumer preferences. The latter two papers complement the first two papers by investigating the impact of intrinsic sensory cues, such as the sound and the taste of food, on consumption behaviors.

The session will begin with a focus on the impact of a highly prevalent visual sensory cue, color of product packaging, on consumption preferences. Specifically, the first paper by Zhang, Wadhwa, and Chattopadhyay focuses on the impact of darkness of colors on one’s preference for indulgent consumption. Their findings show that the impact of darkness of color on indulgent consumption depends on whether the positive or negative aspect of the indulgent consumption is made salient. When the positive (negative) aspect of indulgent consumption is made salient, darker colors increase (decrease) preference for indulgent consumption.

The second paper by Deng, Yang, Jia, and Lee extends the scope of the first paper by investigating the effect of a different sensory cue, auditory cue, on consumer preferences and decision making. Their findings show that exposure to lyrical music, compared with instrumental music, evokes a higher level of mental construal. Consequently, while exposure to lyrical music increases consumers’ preference for products that are superior on desirability features, exposure to instrumental music increases consumers’ preference for products that are superior on feasibility features.

The third paper by Elder and Mohr compliments the first two papers by examining the impact of intrinsic sensory cues on consumption behaviors. They explore the impact of product-related auditory sensory cue, the sound the food makes, on consumption quantity. Their findings show that the salience of the food sound can serve as a monitoring cue to help consumers regulate their food intake. Specifically, they find that increasing the salience of the food sound reduces consumers’ consumption quantity.

The fourth paper by Oh and Mukhopadhyay investigates the impact of yet another product-related sensory cue, taste of food, on consumer choices and consumption decisions. Their findings show that people’s consumption behaviors based on the sensory cue of taste exhibit very different consumption patterns from what one might have predicted based on the choices, which were driven mainly by the visual cues.

Together, this session brings together four papers, which are in final stages of completion, that provide cutting edge insights into how sensory cues prevalent in our market place drive consumer choice and consumption decisions. In addition to attracting researchers interested in the domains of consumer perception and sensory marketing, we expect further interest from those who work within the application areas represented, and those interested in consumer welfare.

The Color of Indulgence: How Dark Color Influences Indulgent Consumption

EXTENDED ABSTRACT

As a ubiquitous visual cue in the marketplace, color plays a crucial role in driving consumers’ purchase decisions (Bercea 2012). One important dimension of color, which is imbued with powerful symbolic meanings, is the degree of darkness (i.e., value) of color. In this research, we examine the impact of dark colors on consumers’ preference for indulgent consumption.

Recent research suggests that people associate dark colors with sin in moral judgments (Sherman and Clore 2009). This research seems to suggest that dark colors should lead consumers to think of indulgent behaviors as sinful, thereby reducing indulgent consumption. However, in the current research, we argue that dark colors could also enhance indulgent consumption. Specifically, we propose that dark colors are more broadly associated with indulgence. Anecdotal evidence provides some support for this proposition. For example, in everyday language, phrases such as “dark temptations” or “dark desires” are often used to describe indulgent behaviors. Findings from two pilot surveys we conducted provide further support for this association between dark colors and indulgence. Since indulgence contains both positive aspect of pleasure and negative aspect of sin (Khan and Dhar 2006), we argue that the impact of dark colors on indulgent consumption depends on consumers’ relative focus on positive versus negative aspects of indulgence. Specifically, when consumers focus on the positive aspect, darker colors can enhance...
consumers’ preference for indulgent consumption. In contrast, when consumers focus on the negative aspect, darker colors can reduce consumers’ preference for indulgent consumption.

We tested the aforementioned color of indulgence hypothesis across four studies. In all studies, holding the hue and chroma dimensions constant, we manipulated only the degree of darkness (i.e., value) of the color cues. Study 1 followed a 2 (color: bright vs. dark) × 2 (focus: pleasure vs. sin) between-subjects design. Specifically, we instructed participants to focus on either the negative (high calorie content) or positive (tastiness) aspect of an indulgent product (movie popcorn). We used red as the hue of the packaging color and manipulated the degree of darkness of the packaging color. Our findings show that when participants focused on the pleasurable aspect (i.e., tastiness of the popcorn), dark (vs. bright) packaging color enhanced their intention to consume the popcorn ($M = 6.98$ vs. $M = 5.75, t(199) = 2.82, p < .01$). However, when participants focused on the sinful aspect (i.e., calorie content of the popcorn), dark (vs. bright) packaging color reduced their intention to consume the popcorn ($M = 5.35$ vs $M = 6.24, t(199) = -2.63, p < .01$).

Study 2 replicated the color of indulgence effect by using a different hue (blue) and a different indulgent product (buttercream cupcake). The study followed a 2 (color: bright vs. dark) × 2 (focus: pleasure vs. sin) between-subjects design. As in study 1, we instructed participants to focus on either the sinful (calorie content) or pleasurable (tastiness) aspect of the cupcake and manipulated the level of darkness of the product wrapper. In addition to replicating the findings of study 1, this study further shows that when consumers focused on the pleasurable (vs. sinful) aspect of indulgence, dark, as compared with bright color induced a greater sense of feeling right toward the indulgence. This subjective sense of feeling right toward indulgence mediated the impact of dark colors on indulgent consumption ($b = 0.97$, bootstrapped 95% CI excluded zero: 0.56 to 1.42).

In study 3, we examined a non-food indulgent consumption context—impulsive purchase. In particular, we used a promotion card for designer sunglasses and manipulated the level of darkness of the color of the card. The study followed a 2 (color: bright vs. dark) × 2 (goal prime: pleasure-seeking vs. self-control) between-subjects design. Findings of this study show that the effect of dark color on consumers’ impulsive purchase intention for a pair of designer sunglasses was moderated by the relative salience of the goal state. When participants were primed with a pleasure-seeking goal, dark (vs. bright) color increased the sense of feeling right toward the indulgence, thus increasing the intention to purchase the designer sunglasses ($M = 4.60$ vs. $M = 3.84, t(278) = 1.96, p = .05$). However, when participants were primed with a self-control goal, dark (vs. bright) color decreased the sense of feeling right toward the indulgence, thus decreasing the intention to purchase the design sunglasses ($M = 2.76$ vs $M = 3.46, t(278) = -1.79, p = .07$).

In study 4, we provided further support for the color of indulgence effect by examining the impact of dark versus bright colors on consumption of entertainment news. The study followed a 2 (color: bright vs. dark) × 2 (goal prime: pleasure-seeking vs. self-control) between-subjects design. Subsequent to the goal-priming manipulation, participants were told that they would read a total of 10 blog articles from two websites: Business Buzz (business and financial news) and Entertainment Buzz (fashion and celebrity news). Descriptions of the two websites were presented on either a dark or a bright color display background. Participants indicated the number of articles they would like to receive from each website, and they subsequently took their time to read the corresponding composition of 10 news articles they had selected. Our findings show that participants primed with a pleasure-seeking goal chose to read a greater number of entertainment news blogs when exposed to dark ($M = 6.72$) versus bright ($M = 5.94, t(239) = 2.02, p = .04$) color background. However, this effect was reversed when participants were primed with a self-control goal ($M = 5.57$ vs. $M = 6.26, t(239) = -1.77, p = .08$).

Together, these results provide converging support for the color of indulgence effect. When consumers focus on the pleasurable aspect (vs. sinful aspect) of indulgence, dark colors as compared with bright colors increase (vs. decrease) consumers’ preference for indulgent consumption. Our results also show that this color of indulgence effect was mainly driven by the dark color. Our findings provide important implications for both marketing and consumer welfare.

Strumming the Chords of Your Mind: The Effects of Lyrical Music versus Instrumental Music on Construal Level and Choice

EXTENDED ABSTRACT

Past research has investigated how music genre, tempo, volume, etc. affects consumer behavior. The vocal versus instrumental component of music, however, has not been studied. Voices and instruments are the two performing media of music (Kamien and James 1988). We use the term “lyrical music” to refer to vocal music with lyrics (i.e., songs) and the term “instrumental music” to refer to the instrumental version of a song which is devoid of lyrics or singing. We examine the effects of lyrical music versus instrumental music on consumers’ mental construal and their subsequent product decisions.

We first posit that listening to lyrical music activates a high level of construal because lyrics connect the auditory stimuli to broader, more abstract concepts such as love, betrayal, happiness, sadness, etc. and help listeners interpret what they are hearing in higher level terms. The lyrics of many songs are scripted under common themes (Desmond 1987). These song themes readily activate the existing cognitive schemas in listeners (Schank and Abelson 1977). As a result, listeners often process song lyrics in a top-down, schematic fashion (Hansen and Hansen 1991), deriving the main theme of a song based on a few key lines or even a few key phrases of its lyrics which are sung repetitively. Previous research shows that quite often there is a lack of word-by-word, localized processing of song lyrics (Greenfield et al. 1987) and even when lyrics are available, its comprehension is imperfect and listeners oftentimes include schema-consistent contents (though not existent in the song) when asked to recall the lyrics of the song (Hansen and Hansen 1991).

Second, we theorize that listening to instrumental music induces a relatively lower level of construal because the lack of song lyrics renders schematic processing less likely and higher order meanings not available for average listeners. Instrumental sounds per se do not provide meaning due to the lack of well-accepted conventions that connect musical expression (the audible aspect, or sound) to musical content (the semantic aspect, or meaning) (Baroni 1983). As such, the auditory experience is semantically obscure (Kamien and James 1988). It is also perceptually "concrete" (Baroni 1983, p. 182) because perceiving a musical piece as a whole first requires a bottom-up, localized processing of individual musical elements to understand the syntactical relationships among them (Tillmann, Bigand, and Madurell 1998). For average listeners, however, this localized processing is sticky. Based on music puzzle tasks, Tillmann et al. observed that “...local processing of harmonic cadences prevails over global processing” (p. 160) and listeners focus on individual musical segments and interpret them in narrower, more isolated contexts rather than the overall structural of the musical piece.
We test our key assertions in studies 1-3 using well-established measures of construal level. In Studies 1-2, participants listened to the song *A Whole New World* (with vocals) or the song’s instrumental version (without vocals). Both versions lasted for about four minutes and were identical except that the lyrical version included sung words. Participants in Study 1 completed the 25-item Behavioral Identification Form (BIF, Vallacher and Wegner 1989). Analysis conducted on the BIF scores (0-25 with higher numbers indicating a tendency to engage in high-level interpretation) revealed that those listening to the lyrical (vs. instrumental) music were more likely to use high-level description to identify a target behavior (Mlyrical = 13.95 vs. Minstrumental = 12.55; F(1, 73) = 7.69, p = .001). Participants in Study 2 engaged in a shoe categorization task (Lee, Deng, Unnava, and Fujita 2014). Analysis performed on the categorization scores (0-1 with higher numbers indicating a tendency to categorize based on functional form, a high-level feature, versus aesthetic details, a low-level feature) showed that those listening to the lyrical (vs. instrumental) music were more likely to categorize based on functional form (Mlyrical = .91 vs. Minstrumental = .78; F(1, 88) = 5.98, p = .02).

In Studies 3A and B, participants listened to the lyrical version of *Before I Fall in Love*. Study 3A utilized a video segmentation task (Lee et al. 2014) in which participants segmented a stream of behavior into meaningful sections by clicking their mouse when, in their judgment, one meaningful action ended and another began. Study 3B employed a picture segmentation task in which participants divided the floorplan of a house into as many areas as made sense to them. We anticipate that lyrical (vs. instrumental) music leads to segmentation that highlights fewer (vs. more) chunks. Analyses showed that those listening to the lyrical (vs. instrumental) music had fewer clicks (Mlyrical = 15.12 vs. Minstrumental = 17.65; F(1, 90) = 4.15, p = .045) in Study 3A, and indicated fewer areas (Mlyrical = 10.38 vs. Minstrumental = 12.02; F(1, 83) = 4.59, p = .035) in Study 3B.

The next two studies show that the higher (vs. lower) level of construal activated by listening to lyrical (vs. instrumental) music, as a procedural mind-set, can influence consumers’ subsequent product decisions. In Study 4, after listening to the lyrical versus instrumental version of *Take Me to Your Heart*, participants made a choice between a restaurant with superior primary (food) but inferior secondary (dining view) features and a restaurant with inferior primary but superior secondary features (Wan and Agrawal 2011). The analysis revealed that lyrical (vs. instrumental) music induced greater preference for the restaurant with superior primary feature (Mlyrical = 7.49 vs. Minstrumental = 6.71; F(1, 64) = 4.62, p = .04).

Study 5 tests the proposed mediation mechanism by priming global versus local processing. If lyrical (vs. instrumental) music indeed activates a global (vs. local) processing style, then the effect of music should be strengthened when participants are primed with a consistent processing style (i.e., global/lyrical and local/instrumental) but weakened when the priming task is inconsistent (i.e., local/lyrical and global/instrumental). After the music manipulation (same as in Study 4), participants viewed a map of a foreign city and were instructed to focus on its global shape versus details (Förster, Liberman, and Kuschel 2008). They then made a choice between a furniture with superior desirability aspects and a furniture with superior feasibility aspects (Aggarwal and Zhao 2015). A 2 (lyrical vs. instrumental music) × 2 (consistent vs. inconsistent prime) ANOVA revealed a significant interaction effect (F(1, 116) = 3.95, p < .05): among participants assigned to the consistent primes, those in the lyrical/global (vs. instrumental/local) condition reported the highest (vs. lowest) preference for the furniture with superior desirability (Mlyrical/global = 7.00 vs. Minstrumental/local = 5.07; F(1, 116) = 8.93, p = .003; whereas participants assigned to the inconsistent primes (those in the lyrical/local and instrumental/global conditions) reported very similar preferences for the furniture with superior desirability (Mlyrical/local = 6.22 vs. Minstrumental/global = 6.13; F(1, 116) = 7.69, p = .003).

In addition to contributing to literature on music effects by shedding light on how listening to lyrical versus instrumental music may alter consumers’ level of information processing, this paper advances construal level research by adding a novel, sensory factor to the repertoire of antecedents of construal level. The ease of implementation of this factor suggests that marketers can use lyrical versus instrumental music as a convenient nudge to influence consumers.

**The Crunch Effect: Food Sound Salience as a Consumption Monitoring Cue**

**EXTENDED ABSTRACT**

We expand the research focusing on intrinsic sensory cues on consumption by exploring how the intrinsic auditory cues elicited during consumption impact consumption quantity. Across three studies, we show that increased attention to the sound the food makes, or food sound salience, leads to reduced consumption. Our research adds to the literature showcasing the impact of sound on flavor perception and consumption (Christensen and Vickers 1981; de Liz Poctazaruk et al. 2011; Demattè et al. 2014; Spence 2012). We choose to focus on food sound salience as sound has traditionally been the “forgotten” flavor sense (Spence 2015), leading to its underutilization in flavor perception.

An important determinant of food regulation is whether consumers are provided with the opportunity to monitor their consumption. Just as the sight of consumed food helps consumers monitor their food intake (e.g., Geier, Wansink, and Rozin 2012), we predict that drawing attention to the sound of the food may also serve as a consumption monitoring cue. Formally, we hypothesize that increasing (vs. decreasing) food sound salience will lead to less food consumption. The sound that a crunchy food makes when it is consumed provides an intrinsic cue of consumption such that when the consumer no longer hears the sound of the food, an auditory pause in the consumption experience is created. Alternatively, when the crunch of the food is not salient, and the natural pause points created by the sound are not available, the ability to monitor consumption is impaired.

In our pilot study, 223 undergraduates rated the importance of each sensory experience in what they eat, how much they eat, their level of enjoyment, as well as how quickly they get bored of the eating experience. As we hypothesized, sound was expressed to be less important, compared to vision, taste, smell, and texture, in determining when participants decide to start eating, stop eating, and how much participants would enjoy the meal (all comparisons with sound Bonferroni corrected, p < .05). Participants also stated that they become bored of the sound of eating food more quickly than they do of the other sensory modalities (Bonferroni corrected, all p < .05).

In study 1, 181 undergraduates were randomly assigned to one of three conditions. Participants were told to eat cookies as they normally would, as loudly as they could, or as quietly as they could. The latter two conditions were manipulations of food sound salience, while also allowing us to explore any differential impact of intensity. Participants were instructed to eat at least one cookie, but could then eat as many as they wished. Despite finding no significant differences in perceived taste or quality of the cookies across conditions, we found our predicted significant main effect of food sound salience. Specifically, the food sound salience conditions led to less consumption than the control condition (Mfood sound salience = 2.61, Mcontrol = 3.38; F(1, 179) = 4.73, p < .05). As the predicted effect of food...
sound salience on quantity consumed might be a function of making other sensory cues more salient as well, the primary aim of study 2 was to directly manipulate food sound salience without incurring an additional effect of mindfulness on the eating situation.

In study 2, 67 undergraduates were randomly assigned to either a high or low food sound salience condition. Food sound salience was manipulated by adjusting playing sound through headphones during consumption (–29.5 dBFS for high food sound salience, 14.5 dBFS for low food sound salience). We pretested this manipulation, with louder levels of white noise leading to a weaker ability to hear oneself chew than quieter levels of white noise. Participants were given a bowl of pretzels to consume while listening to the noise in their headphones. As predicted, participants in the high food sound salience condition consumed significantly fewer pretzels than those participants in the low food sound salience condition ($M_{low} = 2.75$, $M_{high} = 4.11$; $F(1, 64) = 5.27$, $p < .05$).

In study 3, we explored the managerial implications for food sound salience. One hundred twenty-three undergraduates were assigned to either the high or low food sound salience condition. We manipulated food sound salience through a verbal product advertisement for pita chips, with the high (low) food sound salience condition focusing on sound (taste) attributes. Participants read the advertisement, and then were instructed to eat as many pita chips as they wished. As a result of this manipulation, participants ate significantly fewer pita chips in the food sound salience condition than in the taste salience condition ($M_{sound} = 4.79$, $M_{taste} = 5.86$; $F(1, 120) = 4.21$, $p < .05$).

Across three studies, in which we operationalize food sound salience through different methods, we show a consistent negative relationship between the salience of a food’s sound and food intake. Our findings also illustrate the importance of understanding sensory cues as influential factors in food consumption. While existing research places little importance of the role of intrinsic sound in the consumer food environment, we demonstrate that the salience of a food’s sound can in fact significantly impact the quantity of food a person eats.

Choice and Quantity in Conflict: Post-Taste Food Consumption and Inferences of Self-Control

EXTENDED ABSTRACT

Imagine you have to choose between chocolate cake and fruit salad, a classic measure of self-control introduced by Shiv and Fedorikhin (1999). Since chocolate cake is relatively more tasty but unhealthy (i.e., a vice; Wertenbroch 1998), a choice of chocolate cake is interpreted as lack of self-control. Correspondingly, a choice of fruit salad (a virtue) is interpreted as high self-control. The simplicity and intuitive appeal of this heuristic have led it to be widely adopted by consumer researchers. However, it is not without its shortcomings. First, people may simply choose an option because of a dislike for the alternative, with no implication for self-control. More importantly, food choice may not be indicative of quantity. After having tasted some appetizing food, the decision of when to stop eating is also indicative of self-control, and independent of the decision of which food to eat. You may choose the chocolate cake (and thereby be classified as having low self-control), but only eat a single forkful—evidence for high self-control that is completely missed by the researcher. In this research, we explicitly test how trait self-control relates to choice versus quantity in situations such as this, and find that actual intake is in fact systematically discrepant from choice.

Food consumption can be analyzed as a two-stage process: consumers make a choice and then decide how much to eat (Wansink and Chandon 2014). Hence, choice and quantity intake should both be investigated to fully understand the operation of self-control. However, most research has studied choice (with Fedorikhin and Patrick 2010 being an exception), and this is potentially problematic since food consumption quantity is heavily dependent on the sensation of taste (Metcalfe and Mischel 1999), which only occurs post-choice. Consequently, simply basing inferences on observed choices may lead researchers to ignore important consequences such as actual caloric intake.

The over-consumption of calories is the most significant contributor to obesity (Livingston and Zylke 2012). While vices are of course best consumed in moderation, overconsumption of virtues may also be problematic. For example, salads can be higher in calories than burgers (Melnick 2013), and these virtue calories tend to go under the radar. In this research, we report two studies that measure actual intake conditional on choice of vice versus virtue. We tested how individual differences in dietary self-control maps onto (a) the choice between a virtue and a vice, and (b) actual caloric consumption.

Study 1 followed Shiv and Fedorikhin (1999), employing a single-factor-between-subjects design with food type manipulated as vice vs. virtue and dietary restraint measured (Herman and Polivy 1980) as domain-specific self-control. Participants ($N=124$) were given a “taste test” and asked to choose either M&Ms or almonds (pretested). They were then given 40 grams of their chosen food in a plastic cup to taste as they worked on a puzzle solving task, designed to constrain processing resources during consumption. Participants were free to eat as much as they wanted while they worked on the puzzles, and their cups were weighed after they left the lab to estimate their caloric consumption.

Interestingly, dietary restraint had no influence on choice. Since we allowed free choice and then measured intake of the chosen item conditional on choice, there is a potential endogeneity problem. To address this, we analyzed consumption quantity using an endogenous treatment regression model, which follows a two-stage procedure (similar to the analysis of purchase quantity conditional on brand choice; Krishnamurthi and Raj 1988; see also Galoni and Noseworthy 2015). The data did not have a significant endogeneity problem ($p = -.49$; $\sigma = 4.79$, $p = .48$). The regression revealed a significant interaction between food type and restraint ($B = -2.08$; $p = .05$). Follow-up analyses revealed, importantly, that unrestrained eaters ate more if they had chosen the virtue than if they had chosen the vice ($p < .05$). In contrast, restrained eaters tended to eat directionally less of the virtue than of the vice ($p = .12$). Similar patterns were obtained using a simple linear regression. These results are surprising because the choice of the virtue did not lead to uniformly low consumption quantity or caloric intake. Rather, chronic self-control influenced food intake in a different way from food choice—unrestrained eaters ended up consuming higher calories when they chose the virtue than when they chose the vice.

Study 2 ($N=390$) extended study 1 by adding a cognitive load factor, exactly as in Shiv and Fedorikhin (1999). We manipulated cognitive load by instructing participants to memorize either an 8-digit or a 2-digit number, following which they continued to the food tasting task as study 1.

Unrestrained eaters were more likely to choose the vice under high (vs. low) cognitive load ($p < .01$), successfully replicating Shiv and Fedorikhin (1999; study 2). Unlike in study 1, the test for consumption quantity contingent on choice revealed endogeneity—there was a significant correlation in residuals ($p = -.77$; $\sigma = 11.02$; $p < .01$). Accounting for this, the discrete-continuous model revealed a significant interaction between cognitive load, food type, and restraint ($B = -5.63$; $p = .01$). Follow-up analyses revealed that restrained eaters consumed less of the virtue when under high (vs. low) cognitive load...
In contrast, and replicating study 1, unrestrained eaters ate more of the virtue when under load (p < .06). Moreover, under high cognitive load, unrestrained eaters consumed significantly more calories from virtues than from vices (p < .01). Cognitive load did not have an effect at any level of dietary restraint for those who chose vices.

By measuring actual intake after food choice, two studies show convergent evidence that consumption patterns tell a very different story from what may be inferred by simply observing choice. Given a choice of a virtue, cognitive load increased intake among unrestrained eaters while it decreased intake among restrained eaters. Essentially, the decision to continue versus stop eating is very different from the decision (of what) to start eating, and has very different implications for inferences of self-control.

**REFERENCES**


