Get on My Level: Power and Differential Patterns of Attribute-Level Variety Seeking

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In the current research, we use scanner panel and experimental data to show that the relative intensity with which high and low power consumers seek variety differs by product attribute level, suggesting that power may not only influence the overall degree of consumer variety-seeking, but also the specific pattern pursued.

[to cite]:

[url]:
http://www.acrwebsite.org/volumes/1024611/volumes/v45/NA-45

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Me, Myself, and My Variety: Exploring the Relationship Between Variety and the Self

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Paper #1: How Variety in Self-Expression Undermines Self-Continuity
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Paper #2: Variety Counts: How Variety is Perceived in the Presence of Self-Regulatory Goals
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Paper #3: Get on My Level: Power and Differential Patterns of Attribute-Level Variety Seeking
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Paper #4: Does Variety-Seeking Vary by Time of Day?
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SESSION OVERVIEW
A great deal of work in consumer behavior has explored why consumers seek variety (e.g., Ariely and Levav 2000; Etkin and Mogilner 2016; Kahn and Isen 1993; Kahn 1995; Ratner, Kahn, and Kahneman 1999). For example, variety-seeking can be driven by people’s needs to buffer against future preference uncertainty (Simonson 1990), accommodate multiple needs or users (McAlister and Pessesmer 1982), have stimulation (Etkin 2016; Menon and Kahn 1995), or signal information to others (Ratner and Kahn 2002; Sela, Morgan, and Maimaran 2016).

By comparison, relatively less is known about the relationship between variety-seeking and the self. How does variety affect properties of people’s selves; and how might properties of people’s selves, in turn, influence variety preferences? This session addresses these questions by shedding light on the bi-directional relationship between variety-seeking and diverse properties of the self—including thoughts about the self, biological traits, and emotions—using mixed methodologies (e.g., panel data; experiments; field data) across multiple domains.

The first two papers explore how variety influences properties of people’s selves, such as self-continuity and emotions during goal pursuit. Paper 1 (Rifkin and Etkin) examines how the perceived variety in consumers’ self-expressive choices undermines self-continuity. Four experiments demonstrate that perceiving greater variety in an assortment chosen to express the self elicits inferences of unstable preferences, which undermines self-continuity. Paper 2 (Rafieian, Huang, and Kahn) examines how the variety among goal-inconsistent (consistent) behaviors affects anticipated guilt (reward). Five experiments demonstrate that when a self-regulation goal is primed, greater variety among goal-inconsistent (consistent) behaviors generates more anticipated guilt (reward); accordingly, people choose less variety among goal-inconsistent behaviors to minimize guilt (and more variety for goal-consistent behaviors to maximize reward).

The second two papers examine how variety-seeking behavior is, in turn, influenced by properties of people’s selves. Paper 3 (Hmurovic and Inman) investigates how feelings of power affect variety-seeking patterns. Using experimental and panel data, two studies demonstrate that low- and high-power consumers differ on whether they seek variety in high- (e.g., brand) vs. low-level (e.g., flavor) product attributes. Finally, drawing from research in chronobiology, paper 4 (Gullo, Berger, Etkin, and Bollinger) examines how people’s fluctuating circadian rhythms affect preferences for variety throughout the day. Using experimental, panel, and field data, four studies demonstrate that consumers’ preferences for variety are lowest in the morning and increase throughout the day.

Taken together, these four papers explore how variety can influence, and be influenced by, properties of people’s selves. The papers approach this topic by examining the psychological and biological underpinnings of variety preferences, as well as how the perception of variety influences self-perception and emotion. This session also provides perspectives on some open questions in the literature: how might chosen or perceived variety affect the way consumers see themselves and their emotions, and how might aspects of people’s selves—such as their chronobiology or feelings of power—influence variety-seeking patterns? This session will have broad appeal to scholars interested in variety, self-related processes, such as chronobiology and judgments of self-continuity, self-regulation, and mixed-method research.

How Variety in Self-Expression Undermines Self-Continuity

EXTENDED ABSTRACT
From dating profiles to social media accounts to streaming services, consumers are often asked to communicate their preferences by constructing assortments. For example, LivingSocial’s “Pick Five” campaign encouraged social networkers to list their “five favorite” movies and songs on their profiles (Sullivan 2009). Yet while consumers often construct such assortments to communicate information about who they are, might these assortments impact how consumers see themselves? What aspect(s) of the assortment might play a role?

The present research proposes that the perceived variety in a self-expressive assortment can impact how consumers see themselves. Recent research demonstrates that variety-seeking can accommodate for unstable and changing preferences (Sela and Maimaran 2016; Simonson 1990). Integrating this work with Self-Perception Theory (Bem 1972), which argues that people learn about their preferences by observing their own actions, we theorize that perceiving greater variety within a self-expressive assortment should elicit inferences that one’s preferences in the choice domain are less stable (e.g., greater perceived variety in one’s music choices signals that one’s music preferences are unstable). Because instability implies change over time, we reason that this inference of preference instability should affect judgments of similarity with past and future selves (self-continuity; Bartels and Urminsky 2011). We thus propose that by leading consumers to infer that their domain-specific preferences are less stable, perceiving greater variety in a self-expressive assortment will undermine self-continuity.

Four studies support our predictions. In study 1, participants (N = 80) created a personal profile of their five favorite types of tea for a fictitious tea delivery service. To manipulate perceived variety, we provided participants with (false) feedback about the composition of
their choices (high vs. low variety), then measured self-continuity using a measure from the literature (future-self connectedness; Bartels and Urminsky 2011). As predicted, perceiving greater variety in their self-expressive assortments undermined participants’ self-continuity ($M_{\text{high-variety}} = -0.08$ vs. $M_{\text{low-variety}} = 0.32; F = 5.40, p = .023$). We also replicated this effect using a different manipulation of perceived variety (i.e., visually categorizing participants’ choices into more vs. fewer categories).

Study 2 explores the proposed underlying process by measuring the proposed mediator (domain-specific preference stability) and by separately measuring two components of self-continuity (future-self similarity vs. future-self liking; Molouki, Bartels, and Hershfield 2016). First, participants ($N = 122$) created an online personal profile and chose an “ideal collection” of book genres or public radio programs (depending on which activity they indicated doing more often) that represented their personal tastes. After receiving (false) feedback about the variety in their assortments (high vs. low), we measured future-self similarity, future-self liking, and the underlying mechanism, domain-specific preference stability. As predicted, perceiving greater variety in their assortments decreased future-self similarity ($M_{\text{high-variety}} = 5.40$ vs. $M_{\text{low-variety}} = 5.87; F = 6.30, p = .013$) due to reductions in preference stability ($M_{\text{high-variety}} = 5.25$ vs. $M_{\text{low-variety}} = 5.74; F = 4.64, p = .033$; Mediation 95% CI [-.35, -.04]). Importantly, however, perceived variety had no effect on future-self liking ($F < 1, p > .6$), suggesting that greater perceived variety negatively affects self-continuity by diminishing a sense of similarity with—and not liking for—one’s future self.

Prior work suggests that beyond feeling connected to future selves, we can also feel connected to past selves (Milligan 2003; Sedikides et al. 2008). If our self-continuity effect is driven by inferences of preference instability, as we suggest, then the effect may extend to past-self continuity. To test this, study 3 participants ($N = 183$) chose their “ideal collection” of book genres for an online profile and received false feedback about the variety in their choices (high vs. low). Then, we measured future-self and past-self continuity. Supporting our predictions, perceiving greater variety reduced not only future-self connectedness ($M_{\text{high-variety}} = -0.18$ vs. $M_{\text{low-variety}} = 0.20; F = 7.61, p = .006$) and similarity ($M_{\text{high-variety}} = 5.51$ vs. $M_{\text{low-variety}} = 5.91; F = 6.99, p = .009$), but also past-self similarity ($M_{\text{high-variety}} = 5.19$ vs. $M_{\text{low-variety}} = 5.59; F = 4.08, p = .045$). Further, all three effects were driven by a reduction in preference stability ($M_{\text{high-variety}} = 4.81$ vs. $M_{\text{low-variety}} = 5.55; F = 11.79, p = .001$; all 3 mediation CIs exclude 0), providing support for our proposed mediating process.

Critical to our theory is that a chosen assortment says something about who one is (i.e., it is self-expressive; Belk 1988). If a chosen assortment were not self-expressive, by contrast, we would not expect to observe our effect. To test this, participants in study 4 ($N = 222$) first indicated a domain that is least (vs. most) self-expressive from several options (books, radio, music, public radio). Then, while choosing “five favorite” items for a social media profile (as in prior studies), we manipulated whether participants chose from the domain previously selected as their most or least self-expressive. We manipulated the perceived variety of the assortment and measured self-continuity and participants’ belief that they would outgrow the social media platform. A 2 (perceived variety) × 2 (self-expressiveness) ANOVA revealed the predicted interaction ($F = 3.75; p = .054$): When choosing from one’s most self-expressive domain, perceiving greater variety among one’s assortment reduced future-self connectedness ($M_{\text{high-variety}} = -0.32$ vs. $M_{\text{low-variety}} = 0.11; F = 6.21, p = .013$); but when choosing from one’s least self-expressive domain, however, the effect disappeared ($M_{\text{high-variety}} = 0.11$ vs. $M_{\text{low-variety}} = .09; F < 1, p > .8$). Thus, only when a chosen assortment is self-expressive does greater perceived variety undermine self-continuity.

In addition, greater perceived variety enhanced participants’ belief that they would “outgrow” the social media platform, particularly when choosing from their most (vs. least) self-expressive domain (high self-expressiveness: $M_{\text{high-variety}} = 5.31$ vs. $M_{\text{low-variety}} = 4.60; F = 5.35, p = .022$; low self-expressiveness: $M_{\text{high-variety}} = 5.26$ vs. $M_{\text{low-variety}} = 4.86; F = 2.08, p = .151$).

Together, these findings demonstrate that greater perceived variety in a self-expressive assortment has implications both for consumers’ self-continuity and for marketers who care about long-term customer relationships. This research contributes to the literatures on symbolic consumption, self-continuity, and variety-seeking.

**Variety Counts: How Variety is Perceived in the Presence of Self-Regulatory Goals**

**EXTENDED ABSTRACT**

Consumers set various goals in their daily lives. Achieving these goals requires consumers to avoid the allure of goal-inconsistent behaviors (Loewenstein 1996). The act of trying to avoid goal-inconsistent behaviors results in relief and contentment when successful and guilt and anxiety when unsuccessful (Carver and Scheier 1982).

In this research, we propose that when consumers pursue a self-regulatory goal, they tend to think about the future evaluation of their current choices. So, if they are anticipating violating a self-regulatory goal by consuming indulgent options, they think about ways to minimize anticipated guilt. If they are behaving consistently with a self-regulatory goal by consuming virtuous options, however, they think about ways to maximize anticipated reward. We suggest that when consumers are choosing items to consume that are either consistent or inconsistent with a self-regulatory goal (holding the number of options consumed constant), they consider the variety of the chosen options, and not just their preference for those options.

Specifically, we hypothesize that when people are primed with a self-regulatory goal, less (more) variety in goal-inconsistent (goal-consistent) acts results in less (more) anticipated guilt (fulfillment and perceptions of progress). People who are not primed with a goal, however, try to maximize the enjoyment of their current consumption and thus, focus on their preferences and not future evaluations of their current choice. These two different perspectives result in different behaviors depending upon the preference structure of the options in the choice set: When consumers are making choices between equally preferred indulgent options, they opt for more (less) variety in the absence (presence) of a self-regulatory goal. In the absence of a goal, variety is perceived as positive in hedonic current consumption (Ratner, Kahn, and Kahneman 1999), but negative when considering anticipated guilt. By contrast, when virtuous items are not equally preferred, consumers choose to consume their more preferred item repeatedly when no goal is primed, but choose more variety—even at the expense of consuming a less preferred item—if a goal is primed. Formally, we hypothesize:

**Hypothesis 1a:** Variety in goal-inconsistent choices leads to higher levels of anticipated guilt for people with a goal than for those without a goal.

**Hypothesis 1b:** Variety in goal-consistent choices leads to higher levels of anticipated satisfaction for people with a goal than for those without a goal.
Hypothesis 2a: People with a goal seek less variety in goal-inconsistent activities than those without a goal, adjusting for the preferences of the options consumed.

Hypothesis 2b: People with a goal seek more variety in goal-consistent activities than those without a goal, adjusting for the preferences of the options consumed.

We argue that when a health goal is activated, consumers are motivated to count the number of their goal-relevant choices, as a means of monitoring their goal progress. We further contend that, in these situations, the variety of options chosen will be perceived as a way to count how many goal-consistent, or inconsistent, options have been consumed. For instance, for the delicious (but unhealthy options) a higher variety of items, holding actual quantity constant, will be perceived as more goal inconsistent activities. On the other hand, when consuming vegetables (healthy snacks) or exercise activities, more variety will be perceived as more goal-consistent, again holding quantity of consumption or activity constant.

We test our predictions across five studies. The self-regulatory goal that is primed for consumers is a health goal. The first three studies test the hypotheses in a vice category (eating unhealthy snacks). The stimuli used in these studies were pretested to ensure that participants have statistically even preferences for them. The last two studies test the claims in a virtue category (exercising and eating vegetables), with the preference structure manipulated individually for each participant.

In the first study, we show that thinking about having variety in vice options leads to higher anticipated guilt, and that this happens because by choosing more (than less) variety in vice categories, consumers with a health goal think they have consumed more of those goal-inconsistent options.

In studies 2 and 3, we show that priming participants with a health goal leads them to incorporate less variety in their choice of vice options. In study 2, half of participants were primed with a health goal. All participants were then asked to choose two pieces from two available snack types. A smaller percentage of participants in the goal group (than in the control group) chose two different snacks. In study 3, we replicated these findings this time with real snacks (participants were asked to choose three pieces from four available snack types in the lab).

In studies 4 and 5, we tested our predictions in virtue categories. In study 4, participants were asked to rank five exercise activities. Participants then thought about a routine with different levels of variety in exercise activities. While the non-varied routine involved only the highest-ranked (most liked activity), the varied routine involved the highest-ranked, the mid-ranked, and the lowest-ranked activities. This ensured that seeking variety would have to come with the cost of incorporating an activity that participants had ranked the lowest. Participants in the variety condition felt they had made more progress and that their routine had involved more activity than did participants in the no-variety condition. In study 5, participants ranked seven different vegetables, then got an individualized choice set including their high-ranked and low-ranked vegetables. Participants with a health goal chose more variety although it meant consuming a vegetable they did not like.

Product attributes can be categorized as higher-level or lower-level, depending on their degree of abstractness (e.g., Liberman et al. 2002). Just as prior work has shown consumers can seek variety more intensely on some product attributes more than others (e.g., sensory vs. nonsensory attributes; Inman 2001), we posit that low and high-power consumers make less varied purchases, is the variety they do select equivalent to that of high-power consumers? That is, do low and high-power consumers seek variety on the same types of product attributes, just to a different degree? In the current paper, rather than focusing on differences in the intensity of variety-seeking for low and high-power consumers, we investigate differences in the patterns of variety-seeking they pursue. Specifically, we propose that both low and high-power consumers seek variety, but do so more intensely on different product attribute levels.

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Get on My Level: Power and Differential Patterns of Attribute-Level Variety Seeking

EXTENDED ABSTRACT

Power is defined as the “asymmetric control over valued resources in social relations” (Magee and Galinsky 2008, p. 361), and exists both as a chronic and situationally-evoked psychological state (Rucker et al. 2012). There is growing recognition that power can have profound effects on consumer behavior and cognition (e.g., Dubois et al. 2012; Inesi et al. 2011; Rucker and Galinsky 2008), with recent work finding that increased action tendency triggered by high-power states increases consumer switching behavior (Jiang et al. 2014). Although prior power research suggests that action orientation may lead overall levels of variety-seeking to differ between low and high-power consumers, this research is silent regarding how the pattern of variety-seeking may differ. If low-power consumers make less varied purchases, is the variety they do select equivalent to that of high-power consumers? That is, do low and high-power consumers seek variety on the same types of product attributes, just to a different degree? In the current paper, rather than focusing on differences in the intensity of variety-seeking for low and high-power consumers, we investigate differences in the patterns of variety-seeking they pursue. Specifically, we propose that both low and high-power consumers seek variety, but do so more intensely on different product attribute levels.

Product attributes can be categorized as higher-level or lower-level, depending on their degree of abstractness (e.g., Liberman et al. 2002). Just as prior work has shown consumers can seek variety more intensely on some product attributes more than others (e.g., sensory vs. nonsensory attributes; Inman 2001), we posit that low and high-power consumers make less varied purchases, is the variety they do select equivalent to that of high-power consumers? That is, do low and high-power consumers seek variety on the same types of product attributes, just to a different degree? In the current paper, rather than focusing on differences in the intensity of variety-seeking for low and high-power consumers, we investigate differences in the patterns of variety-seeking they pursue. Specifically, we propose that both low and high-power consumers seek variety, but do so more intensely on different product attribute levels.

Study 1 tested this prediction using historical purchase data from the Nielsen Homescan Consumer Panel in three product categories (i.e., chips, pasta sauce, and carbonated beverages) over a twelve-year period (2004-2015). We restricted our analyses to single-person households to more reliably capture individual-level variety-seeking behavior (Kahn et al. 1986). Nielsen-specified UPC attribute and category classifications were used to code low- and high-level attributes. Flavor served as a low-level attribute for all product categories. Higher-level attributes varied in availability between product categories and included brand, type (e.g., kettle-cooked), form (e.g., waffle), module (e.g., tortilla), and style (e.g., extra thick). Consistent with prior research, we calculated the degree of consumer variety-seeking using the Herfindahl-Hirschman Index (i.e., HHI; the sum of squares of choice shares), which was subtracted from 1 so that larger scores indicate greater variety-seeking (Nowlis et al. 2010). Subtracting the higher-level index from the lower-level index generates an indicator of relative variety-seeking, with positive values signaling greater lower-level (vs. higher-level) product attribute variety-seeking.

Because income reflects a literal control over economic resources and is tightly linked to experiences of power (e.g., Dubois et al. 2015), income was used as an indicator of individuals' chronic sense of low (<$12,000; n=2,462) and high (≥$100,000; n=1,034) power. To minimize the possibility that variety-seeking could be attributed
to recent income changes, only panelists who remained at the same income level for at least two consecutive years were included in the sample, and only purchase data from the longest spell of consecutive years at the same income level were retained for analysis.

Separate regression analyses were performed for each index of relative variety seeking within each product category, including power as the primary predictor (1 = high, 0 = low) and controlling for both income stability (i.e., total number of years at same income level) and total spent (i.e., total amount spent on all trips in which target product was purchased). In the chip category, although there was no difference in relative variety-seeking on flavor versus brand (b = -0.03, p = .706), low-power consumers engaged in significantly more variety-seeking on the lower-level attribute of flavor than the higher-level attributes of form (b = -.080, p < .001), type (b = -.164, p < .001), and module (b = -.024, p = .20), as compared to high-power consumers. Similar results emerged in the other product categories, with low-power consumers demonstrating greater variety-seeking on flavor than all other higher level attributes except for brand (sauce style: b = -.024, p = .035; beverage type: b = -.070, p < .001). This suggests that high-power consumers engage in more intense variety-seeking on higher-level (vs. lower-level) product attributes to a greater degree than low-power consumers.

Study 2 sought to replicate the results of Study 1 using a direct (but subtle) power-state manipulation. MTurk participants (n = 177) imagined receiving a promotional punchcard for six free bagels (one per week). After viewing the bagel shop’s 16 options listed below a chalkboard sign reading “We all feel powerful [powerless] in the morning… have a bagel!” (i.e., phrasing adapted from Dubois et al.’s 2012 successful manipulation), participants sequentially chose which bagel they wanted for each of the following six weeks. Flavor categorization constituted different product attribute levels, with each specific flavor (e.g., everything) representing the lower-level attribute of the broader flavor categorization (i.e., sweet, savory) as the higher-level attribute. Replicating Study 1, an index of relative variety seeking on product attribute levels was computed. ANCOVA results, controlling for income (to examine unique effects of situationally-induced power), reveal that low-power participants, relative to high-power participants, seek more variety on low-level flavor attributes than the higher-level flavor categorization, as predicted (F(1, 174) = 3.79, p = .053). Thus, Study 2 supports our thesis that variety-seeking occurs relatively more intensely at higher-level product attributes for high (vs. low) power consumers.

In sum, converging evidence from both actual and hypothetical product choices using both chronic and situationally-induced power states suggests that the relative intensity with which high and low-power consumers seek variety differs by product attribute level. As such, this research not only differentiates between relative and absolute variety-seeking intensity, but also identifies a novel dimension on which to examine consumer variety-seeking—product attribute level.

**EXTENDED ABSTRACT**

Variety is the proverbial spice of life. From mundane choices, like what to eat, to important decision, like how to spend one’s time, people often seek variation (Kahn 1995; McAlister and Pessemier 1982). But might this preference vary by time of day? Might grocery-shoppers pick less varied options, for example, if they go shopping in the morning rather than the evening?

We suggest this possibility based on research regarding chronobiology. Various internal biological processes naturally oscillate over an approximately 24-hour period. The rhythms are endogenous (Aschoff et al. 1971), but are often adjusted, or synchronized, by external cues (e.g., light). Most relevant to the current research are diurnal variations in arousal. People tend to feel lower arousal or less alert in the morning (Kleitman 1987; Thayer 1978, 1989), and given that variety is stimulating (Berlyne 1960; Raju 1980), people may seek less variety in the morning.

Four studies support this hypothesis. Compared to other times of day, variety-seeking is lower in the morning: people pick items that are more similar to what they chose previously, and choose less-varied portfolios of options to consume at a later date. Further, the effects are moderated by factors that impact circadian rhythms (i.e., sunlight and individual differences in circadian preferences). On mornings when people feel more alert (i.e., earlier sunrise), they show greater variety-seeking, and people who feel more alert in the morning (i.e., morning types), prefer more variety than as well.

In Study 1, we analyzed the supermarket shopping behavior of over 1 million households across a 25-month period. We use scanner panel data from a single California location of a major grocery chain. Each purchase includes time of day and a unique household identifier for consumers using a loyalty card. This allows us to track the same household over time and isolate the time-of-day effect using within-household-category variation. We analyze the variety purchased within each category for a given shopping trip, i.e., the ratio of unique products purchased within that category to the number of total products purchased within the category. For example, someone buying two yogurts might purchase two of the same flavor (i.e., less variety) or two different flavors (i.e., more variety).

Results indicate that people choose less variety in the morning than the rest of the day (p < .0001). Extensive control variables rule out potential alternative explanations, such as shopping basket composition or variation across households.

We also test the underlying process by examining whether the effect of time of day is moderated by sunlight. Light itself can be stimulating and boost arousal (Cajochen 2007); light is intuitively linked with an alert or wakeful state. Compared to the effects of light on human circadian rhythms, little attention has been paid to its acute alerting action. Here I summarize studies from the past two decades, which have defined and quantified the dose (illuminance levels), so if stimulation plays a role in these effects, as we suggest, then variety-seeking should vary with seasonal changes in day length. We collected sunrise time for the 761 days in the dataset, and estimate an alternative regression where we interact within-day time trends with sunrise times. Diurnal variation in variety-seeking is moderated by sunlight (p < .05). Morning variety-seeking is higher on days when the sun comes up earlier.

Study 2 looked at meal consumption. We measured what a panel of participants (N = 135) ate every day for breakfast, lunch, and dinner over a midday period. Then, for each meal, independent coders (α = .87) rated how much variety existed among that meal across days. Considering dinners, for example, someone who ate the same thing every meal across days (e.g., all pasta and vegetables) would receive a lower variety score than someone who ate completely different things each dinner.

As predicted, people ate less variety for breakfast (Mbreakfast = 2.54) than lunch (Mlunch = 3.40, p < .0001) and than dinner (Mdinner = 3.79, p < .0001). Ancillary analyses cast doubt on a host of alternative explanations. While one could argue that people eat more variety for lunch and dinner because they eat out (rather than at home), eat with others (rather than alone) or eat food others make (rather than prepare themselves), results hold controlling when for all these factors, casting doubt on these alternatives.
To test diurnal variation in variety-seeking more broadly, Study 3 examines a non-food context. Participants (N = 783) were shown a list of activities (e.g., watch a movie) and asked to pick a total of six they would like to do over the coming week (adapted from Etkin 2016). They could pick six different activities, or the same activities multiple times so long as they selected six total activities. Variety preference was measured as the number of unique activities they selected. To examine whether variety preferences varied over the course of the day, we surveyed 80 people each hour from 5am to 11pm.

As predicted, variety preferences were positively correlated with time of day (r = .07, p < .05); people chose less variety in the morning than they did later in the day.

Study 4 examined the moderating role of individual differences in circadian preferences. People vary in sleep/wake and alertness patterns. Morning types go to bed and wake up earlier, and feel more alert and energized in the morning (Natale and Cicogna 1996; Wilson 1990). If less variety-seeking in the morning is driven by stimulation, as we suggest, morning types might seek greater variety in the morning compared to other individuals. Participants completed the morningness scale (Smith, Reilly, and Midkiff 1989) and filled out the variety measure from Study 2, either in the morning, mid-day, or evening.

Consistent with the hypothesized underlying role of circadian rhythms, individual differences in circadian preference moderated the results. In the morning, variety-seeking was correlated with morningness (b = .016, p < .05), but not in the mid-day or evening (all p's > .2).

Taken together, these four studies use diverse methodologies and contexts to support the notion that variety-seeking varies throughout the day. These results provide insight into drivers of variety-seeking and the biological basis of decision making more broadly.

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