Searching Ordered Sets: Evaluations from Sequences under Search

KRISTIN DIEHL
GAL ZAUBERMAN*

Consumers often search for and choose from ordered sets, commonly from options listed from best to worst. Normatively, such declining orderings maximize expected value from search and should lead to more positive evaluations of the experience compared to searching improving orderings. We demonstrate, however, that amount of search moderates consumers’ evaluations of declining versus improving orderings. Search from different orderings exposes consumers to sequences of options characterized by different key psychological moments (trend and end) as well as to different levels of average quality. Greater search can lead to more positive evaluations for improving versus declining orderings because consumers experience more positive moments on which to base their evaluation. Supporting the proposed model, we show that overall evaluations are influenced by differences in these key moments over and above quality changes of the set.

Consumers often search for and choose from options that form an ordered set. Developments in interactive technology, for example, allow companies to provide ordered sets based on customers’ expected preferences. Options are commonly ordered from best to worst, creating a declining sequence. Normatively, declining orderings maximize the expected value of search (Weitzman 1979). Empirically, providing consumers with declining orderings indeed reduces effort and improves choice quality (Häubl and Trifts 2000). Given the positive effects of declining orderings, consumers’ evaluations of such orderings should be more positive than those of improving ones. We propose, however, that whether declining or improving orderings result in higher overall evaluations will depend on the extent of search in which consumers engage.

Different orderings can alter the extent of search. Consumers searching a declining sequence of options are likely to stop relatively early, experiencing a more truncated section of the overall range. Presenting options in an improving ordering, however, should promote search. Therefore, we note that the proposed moderator, search, will be partially endogenously determined. We predict more positive evaluations of improving compared to declining sequences the more consumers search.

Accounting for this effect of search on overall evaluations, we propose a mechanism in which consumers’ evaluations are determined by the overall sequence they are exposed to, not only by the individual options they select. Building on the “snapshot model” (Fredrickson and Kahneman 1993), we suggest that searching ordered sets exposes consumers to a distinct sequence of items, characterized by different key psychological moments (e.g., the trend and end). We predict more positive evaluations of improving compared to declining sequences the longer consumers search, because consumers experience better moments on which to base their evaluation.

Supporting the proposed model, in study 1 we demonstrate that search moderates whether declining or improving orderings will lead to more positive evaluations. In study 2 we show that improving versus declining orderings affect search and therefore exposure to sets characterized by dissimilar key psychological moments. We demonstrate that differences in these key moments have an impact on overall evaluations over and above quality differences.

THEORETICAL BACKGROUND

Product orderings may exist because retailers provide consumers with personalized orderings (Alba et al. 1997), but orderings can also occur naturally because of heterogeneity in consumer attribute weights (Diehl, Kornish, and Lynch 2003). We will briefly review prior research relevant to how orderings affect consumers’ evaluations and how orderings determine search.
Orderings and Overall Evaluations

Prior research demonstrates that when forming overall retrospective evaluations people do not integrate the intensity of the experience over its entire duration. Rather, as proposed by the snapshot model (Fredrickson and Kahneman 1993), people store discrete moments (snapshots) in memory that are later used to form an evaluation. Psychologically relevant moments affecting retrospective evaluations of sequences are the peak, the end (e.g., Baumgartner, Sujan, and Padgett 1997; Kahneman et al. 1993; Schreiber and Kahneman 2000), and the rate of change (trend) of an experience (e.g., Ariely 1998; Ariely and Zauberman 2003; Hsee, Abelson, and Salovey 1991).

This moments-based process is an evaluation heuristic and is fundamentally an attentional phenomenon. Fredrickson and Kahneman (1993) further note that “what comes most readily to mind in evaluating episodes are the salient moments of those episodes and the affect associated with those moments” (54). The end of the experience is prominent in memory because of recency effects (Miller and Campbell 1959). The peak of the experience creates the most extreme affective reactions, heightening its salience (Fredrickson and Kahneman 1993). The trend is an influential part of overall evaluations because people are sensitive to changes in the environment (Ariely 1998). Therefore, holding mean intensity constant, a better peak and end of an experience and a more positive rate of change will result in more positive overall evaluations.

Whether different key moments affect overall evaluations is likely to depend on several factors (Ariely and Carmon 2003), two of which are pertinent to the current article. First, in goal-directed experiences, the outcome can be more influential than key moments of the experience (Carmon and Kahneman 1996). Second, key moments affect evaluations only if option sets are perceived as a sequence (Loewenstein and Prelec 1993). Less cohesive experiences reduce the effect of the ordering and increase the effect of overall quality (Ariely and Zauberman 2000, 2003). Because search is inherently goal directed, different orderings may not affect overall evaluations. In addition, searching individual options could create experiential breaks, also reducing the effect of the ordering. Raghunathan and Irwin (2001) find that browsing a fixed set of vacation spots in an improving compared to a declining sequence leads to greater enjoyment. We therefore conjecture that search is an experiential aspect of consumer behavior and predict that the snapshot model will apply to situations of search.

Orderings and Search

Experiencing ordered sets can affect overall evaluations, but will different orderings also affect search and thus the sets consumers experience? Economics of information models propose that search continues as long as the marginal cost of search is lower than the expected marginal benefit of examining an additional option (e.g., Stigler 1961; Urban 1986). Amount of search can be affected by exogenous as well as endogenous factors. Exogenous factors, such as lower search cost or greater individual propensity to search, can increase search, exposing consumers to an extended set. In this article, we focus on how ordering endogenously affects amount of search. For declining patterns, the expected marginal benefit of search decreases, while the opposite is true for improving patterns. Therefore, search should stop earlier when searching declining sequences, exposing consumers to a smaller set of options than searching improving sequences.

FORMING OVERALL EVALUATIONS WHEN SEARCHING ORDERED SETS

To illustrate how declining and improving orderings may affect overall evaluations, imagine two sets of five differently valued options: in one case, options are presented in a declining order (e.g., 5, 4, 3, 2, 1); in the other case, options are presented in an improving order (e.g., 1, 2, 3, 4, 5).

Searching these sets will, by definition, affect the average quality seen. Unless all options are searched, average quality seen will be lower for the improving compared to the declining ordering. A model of overall evaluations based on mean quality alone will predict that searching the declining ordering should lead to higher evaluations, or, if search is exhaustive, the two orderings should be evaluated equivalently. However, a model of overall evaluations that, in addition to mean quality, also takes other moments of the experience into account suggests that under certain conditions improving orderings are preferred.

Consider a model that, in addition to average quality, also takes the trend, the peak, or the end of the experience into account. Assuming monotonic sequences, peak and start are equivalent for declining sequences, while peak and end are equivalent for improving sequences. Further, declining orderings are characterized by a negative trend and a low end. Improving sequences are characterized by a positive trend and a high end. These characteristics are sensitive to search and take on more extreme values the greater the search (see app. A for details). Greater search from declining sequences exposes consumers to a longer negative trend and worse ends. Conversely, greater search from improving sequences exposes consumers to more positive trends and better ends. These characteristics of the sequence are translated into psychologically relevant moments shaping overall evaluations. The later the search is stopped, the more positive the evaluations from improving compared to declining orderings.

This logic suggests that search moderates the degree to which declining versus improving orderings lead to more positive evaluations. We propose a process model that explains changes in overall evaluations based on how search shapes observed sets, characterized by different key moments. Evaluations are expected to be based on the key moments of the experience, in addition to the average quality of the set.

H1: Extent of search will moderate the degree to which declining orderings lead to more positive overall
evaluation than improving orderings.

**H2:** Changes in overall evaluations from declining versus improving orderings will depend on changes in key moments of the experience (end and trend), over and above average quality of the set.

**Empirical Approach**

We present two experiments in which participants select options from ordered sets. Participants determine how long to search for any given option and when to stop searching. Given the goals of our investigation, the order in which options are searched is predetermined. This operationalization strengthens the ordering manipulation and yet, we believe, does not conceptually alter the results. Indeed, Slovic’s (1972) concreteness principle shows that presentation formats can exert a powerful influence on the order in which options are examined. Moreover, Bettman and Kangkar (1977) demonstrate that participants fully adapt their search strategies to what is easiest given the presentation format, supporting the validity of our procedure.

We predict that differences in key psychological moments of the searched orderings drive overall evaluations. Prior research has found that using objective moments of an experience is a good approximation of these psychological representations (Ariely 1998) and has been used in previous research (e.g., Ariely and Zauberman 2003; Schreiber and Kahneman 2000; Varey and Kahneman 1992). In the current article, we follow the same approach.

**STUDY 1: THE MODERATING EFFECT OF SEARCH ON OVERALL EVALUATIONS**

In study 1 we test whether search will moderate the degree to which declining orderings lead to more positive overall evaluation than improving orderings (hypothesis 1). We do so by comparing participants who search almost exhaustively (high-search group) to those engaging in more limited search (low-search group). Since trend, mean, and end are virtually identical for participants in the high-search group, we are not able to test hypothesis 2.

**Method**

**Participants and Design.** Seventy-three undergraduate students participated in this study in order to fulfill a marketing research requirement. The study followed a 2 (ordering) \( \times \) 2 (trial position of ordering) mixed design. Ordering (improving, declining) was a within-subjects factor and trial position was a between-subjects counterbalancing factor.

**Procedure.** Participants searched for and selected a hotel that best matched the preferences of a target consumer. All participants saw the same graphical representation of that consumer’s preference weights along four dimensions (Accommodation, Affordability, Dining, and Entertainment). For illustration, see figure 1, panel A.

Available hotels were described along the same dimensions using a unit length slider (see fig. 1, panel B) from which participants had to infer the target’s utility. The utility measure was bound between 0 (all attributes at 0) and 200 (all attributes at 100). Twenty options were ordered based on the target’s utility and, over two trials, were presented in a declining or improving order. Participants were not explicitly informed about the ordering.

Participants examined options sequentially and could stop at any point. When search stopped, participants answered questions about the provider and the selection (described below). After choosing one hotel from those previously searched, participants answered questions about their choice and the overall shopping experience. The procedure was identical for the second trial.

**Dependent Variables.** We measured several aspects of consumers’ overall evaluations. Participants provided retrospective evaluations of the selection, the chosen option, and the shopping experience. They also indicated their likelihood of using the same vendor in the future, a prospective measure (see app. B). All measures were taken on unnumbered bipolar sliders that were translated to 100-point scales. We formed an overall evaluation index by averaging these different measures (Cronbach’s alpha of 0.87 for both orderings). Higher numbers indicate more positive evaluations. Search was measured by the number of alternatives examined. We also observed objective choice quality, defined by the target’s utility.

**Results**

**Amount of Search.** Based on the median number of options searched from the declining ordering (median = 16), we formed a “high-search” group \( (n = 36) \) and a “low-search” group \( (n = 37) \). The median split introduced amount of search (low search vs. high search) as an added between-subjects factor. For descriptive statistics see table 1.

**Overall Evaluations.** As indicated by a mixed ANOVA, the low-search group formed more positive evaluations than did the high-search group \( (F(1,69) = 9.3, p < .01) \). A more important result is that the predicted amount of search by ordering interaction qualified this result \( (F(1,69) = 24.45, p < .0001; \) see fig. 2). The low-search group formed more positive overall evaluations if options were presented in a declining compared to an improving pattern \( (F(1,34) = 20.1, p < .0001) \), but that was reversed for the high-search group \( (F(1,35) = 7.85, p < .01) \).

**Objective Choice Quality.** Participants selected better options from declining than improving orderings \( (F(1,69) = 20.0, p < .0001) \). The interaction of amount of search by ordering qualified this finding \( (F(1,69) = 4.4, p < .05) \). The low-search group chose better options from declining than improving orderings \( (F(1,34) = 18.9, p < \)
FIGURE 1

ILLUSTRATION OF THE TASK

A

On-Line Shopping for Hotel

Remember, for this task you are asked to book a hotel for another person. You will be presented with information about the different hotels offered and will need to find the hotel that best fits the person's needs.

Each hotel is described on four (4) characteristics using a scale from lowest (left) to highest (right). For all characteristics, higher values are better.

Accommodations: The overall quality of the room itself (on the left is the worst and on the right is the best)
Affordability: The overall affordability (on the left is the least affordable and on the right is the most affordable)
Dining: The overall quality of the food provided (on the left is the worst and on the right is the best)
Entertainment: The overall quality of the entertainment (on the left is the worst and on the right is the best)

Remember, you are making this reservation for another person, not for yourself. Below you can see what aspects of a hotel are important to this person. These are the weights you should use in making your selection. Importance is rated on a scale from 0 (not at all important) to 100 (extremely important). The graph below shows that Accommodation (importance of 70) is the most important characteristic to this person. You can also see that Affordability (importance of 55) is the second most important characteristic, and that it is more important than Dining (importance of 45). Entertainment (importance of 30) is the least important characteristic.

Do you understand what characteristics are important to this person?

Please press 'Y' for yes and 'N' for no.

B

Oberoi

Lowest

Accommodations

Affordability

Dining

Entertainment

Highest

NOTE.— Panel A shows the task description; panel B shows a hotel option description.
TABLE 1
STUDY 1 (HOTELS): MEANS AND STANDARD ERRORS (IN PARENTHESES)

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>High-search group: above median search</th>
<th>Low-search group: below median search</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Declining</td>
<td>Improving</td>
</tr>
<tr>
<td>Number of options searched</td>
<td>19.6 (.2)</td>
<td>18.4 (.6)</td>
</tr>
<tr>
<td>Overall evaluation index</td>
<td>36.0 (3.1)</td>
<td>50.0 (3.4)</td>
</tr>
<tr>
<td>Choice quality (objective)</td>
<td>80.0 (2.2)</td>
<td>74.0 (2.6)</td>
</tr>
</tbody>
</table>

This effect was smaller in the high-search group ($F(1, 35) = 3.3, p < .08$).

Discussion

Study 1 shows that extent of search moderates evaluations from improving compared to declining orderings, supporting hypothesis 1. Incomplete search led to more positive evaluations of declining orderings. However, the opposite was true under extensive search, where evaluations from declining orderings were less favorable than from improving orderings. Note that findings for the high-search group replicate prior research on evaluations of sequences (e.g., Fredrickson and Kahneman 1993) but do so in a novel, goal-directed task of search and choice.

A possible explanation of our results could be that average quality of options seen is driving overall evaluations. For the high-search group, average quality seen is virtually identical regardless of the ordering. However, when search is limited, declining rather than improving orderings yield higher average set quality. This alone may lead to better evaluations. In study 1 we have not tested the unique contribution of average quality compared to other aspects of the set. In study 2 we will investigate whether, under limited search, trend and end affect overall evaluations over and above average quality.

STUDY 2: ENDOGENOUS SEARCH AND MOMENTS OF THE SEARCHED SET

This study investigates the mechanism by which search moderates the effect of ordering on overall evaluations. We again establish search as a moderator (hypothesis 1) and, in addition, disentangle the effects of key moments of the experience (trend and end), controlling for mean quality (hypothesis 2).

Method

Participants and Design. Ninety-six undergraduate students participated in this study, fulfilling a marketing research requirement. The study followed a 2 (trial position of ordering) × 2 (choice window size) × 2 (ordering) mixed design, with ordering manipulated within subjects and the other factors manipulated between subjects.

Procedure. The experimental task was identical to that in study 1, with three key modifications. First, we modified a procedure used by Corbin, Olson, and Abbondanza (1975), allowing participants to select only from a choice window of the last three or six options they observed. This procedure explicitly imposes opportunity cost of searching one more option, thus strengthening the trade-off between marginal cost and benefit of search. Note that this procedure will affect choice quality differentially in the two orderings. Greater search from declining orderings reduces choice quality because better options disappear. This is not true for improving ordering. Smaller windows heighten this negative effect in declining orderings. Importantly though, we do not expect choice window to alter the interaction of search and ordering on overall evaluations, the focal measure. Manipulating choice window size allows us to test this assumption. Second, we used apartments, described along affordability, location, size, and community features, as stimuli. This allows us to give a realistic explanation for the choice window, as apartments are rented out with delay. Third, participants had an explicit incentive to maximize accuracy in the choice task. The five most accurate participants across both trials received $20 in cash or a gift certificate.

Dependent Measures. We used the same measures as in study 1. Scale reliabilities for the overall evaluation indices were 0.91 for declining and 0.87 for improving sequences.

Analysis. We report two sets of analyses. The first set is similar to that in study 1, estimating a mixed ANOVA with amount of search as a continuous within-subjects measure, testing hypothesis 1. A second set uses $R^2$-change tests (e.g., Pedhazur 1997) to examine whether, controlling for average quality of the observed set (mean), adding rate of change (trend) and quality of the last option seen (end) as
EVALUATIONS FROM SEQUENCES UNDER SEARCH

FIGURE 2
STUDY 1: THE JOINT EFFECT OF SEARCH AND ORDERING OVERALL EVALUATIONS

![Graph showing overall evaluation index by search and ordering]


Results

Amount of Search. As expected, search was higher for improving than for declining orderings \((F(1, 84) = 66.96, p < .0001)\). Size of the choice window did not have a significant effect on amount of search \((F(1, 83) = .39, p > .5)\); for descriptive statistics, see table 2).

Overall Evaluations. Greater search decreased overall evaluations \((b = -8.7, F(1, 82) = 8.1, p < .0001)\). Also, overall evaluations were significantly more positive for declining than for improving orderings \((F(1, 82) = 8.1, p < .0001)\). Supporting hypothesis 1, the ordering by apartments searched interaction qualified these main effects \((F(1, 82) = 52.9, p < .0001)\). When options were ordered in a declining ordering, more search decreased overall evaluations \((b = -15.2, F(1, 83) = 89.37, p < .0001)\). However, when options were ordered in an improving pattern, additional search led to more positive evaluations \((b = 6.0, F(1, 83) = 6.29, p < .02)\); for means see table 2). Size of the choice window did not interact with any key factors, though it did have a (theoretically irrelevant) main effect showing that the bigger window led to more positive evaluations \((F(1, 83) = 5.76, p < .02)\).

Objective Choice Quality. Participants chose better options from declining than from improving orderings \((F(1, 82) = 532, p < .0001)\). As a consequence of our design, we find a main effect of choice window \((F(1, 83) = 6.6, p < .02)\) and a significant interaction with ordering \((F(1, 82) = 23.6, p < .0001)\). The effect of choice window is significant for the declining ordering \((F(1, 83) = 24.74, p < .0001)\), but not for the improving ordering \((F(1, 83) = 3.37, p > .05)\). The same logic drives the interaction of ordering by apartments searched \((F(1, 82) = 25.6, p < .0001)\). More search from declining orderings reduced choice quality \((F(1, 83) = 677, p < .0001)\). More search from improving orderings, however, had the opposite effect \((F(1, 83) = 378, p < .0001)\).

Key Moments and Overall Evaluations. The second set of analyses disentangles the unique effects of key moments of the experience (trend and end) from the effect of average quality. Average quality seen had a positive and significant effect on overall evaluations \((b_{\text{Mean}} = 0.67, F(1, 190) = 70.03, p < .0001; \text{see table 3 for test statistics})\).

We compare this single-parameter base model to two different two-parameter models. First, a model with both average quality seen \((b_{\text{Mean}} = 0.49, t(189) = 5.9, p < .0001)\) and end \((b_{\text{End}} = 0.41, t(189) = 4.5, p < .0001)\) suggests that each measure significantly affects overall evaluations. Compared to the single-parameter model, adding end as a predictor significantly improved the overall model fit over average quality seen alone \((F(1, 190) = 22.4, p < .0001)\). Second, a model with both average quality seen \((b_{\text{Mean}} = 0.9, t(189) = 10.2, p < .0001)\) and trend \((b_{\text{Trend}} = 0.4, t(189) = 5.0, p < .0001)\) suggests that these two measures also significantly affect overall evaluations. Adding trend as a predictor significantly improved model fit over average quality seen \((F(1, 190) = 24.85, p < .0001)\). The coefficients for trend and end suggest that positive trends and better ends lead to more positive evaluations.

### TABLE 2

| STUDY 2 (APARTMENTS): MEANS, STANDARD ERRORS (IN PARENTHESES), AND REGRESSION COEFFICIENTS |
|-----------------------------------------------|-----------------------------------------------|
| Number of options searched | 7.8 | 13.8 |
| (6) | (.5) | |
| Overall evaluation index | 57.0 | 42.0 |
| (2.6) | (2.2) | |
| \(b = -15.2\) | \(b = 6.0\) | |
| Choice quality (objective) | 70.0 | 57.0 |
| (2.4) | (1.6) | |
| \(b = -3.7\) | \(b = 3.0\) | |

Note.—Regression coefficients \((b)\) indicate the effect of additional search on the dependent variable.

\(^2\)Note that we were unable to include the effect of “peak” in this analysis, since it is constant for declining sequences and equivalent to end in improving sequences.
We also examine whether end and trend have unique effects on overall evaluations when they are both included in the model. We compare a three-parameter model with mean quality, trend, and end to each of the two-parameter models reported above. Adding end to a model based on mean quality and trend significantly improved model fit ($F(1, 189) = 6.56, p < .02$), as did adding trend to a model based on mean quality and end ($F(1, 189) = 8.8, p < .01$). These results demonstrate that both moments, end and trend, each have unique effects over and above the effect of mean quality.

**Discussion**

In this study we again demonstrate that amount of search moderates the effect of ordering on overall evaluations (hypothesis 1). Any additional search from declining orderings led to more negative evaluations; the opposite was true for improving orderings. Importantly, extending prior findings, our analyses distinguish between the effects of key moments of the experience and average quality seen (hypothesis 2). Supporting the applicability of the snapshot model to search experiences, we find that key moments of the experience (trend and end) affect overall evaluations beyond the effect of mean quality. Therefore, changes in average quality of the set are not the sole drivers of our results. Further, since end and trend are both unique key moments when forming overall evaluations, recency effects alone (i.e., end) cannot account for our findings. Finally, we find an effect of the search experience on overall evaluations, even though providing monetary incentives to find the best option clearly makes this a goal-directed task.

**GENERAL DISCUSSION**

This article focuses on the joint effects of search and orderings on overall evaluations. While consumers are commonly exposed to declining product orderings, we propose that such orderings do not always lead to more positive evaluations. Rather, we demonstrate with two studies that amount of search is an important moderator of consumers’ evaluations. Declining orderings lead to more positive evaluations under limited search, however; when search is extensive, evaluations are more positive for improving orderings.

This article extends the literature on evaluations of sequences in several ways. Prior research has either investigated how ordering affects amount of search, disregarding consumers’ perceptions of the set, or focused on consumers’ perceptions of orderings, disregarding search. We contribute to existing literature by combining these two disjoint streams. We demonstrate that the effect of orderings on overall evaluations depends on extent of search, where search is partially determined by the ordering itself. Search from different orderings affects the key psychological moments (trend and end) as well as quality levels of the set. By altering characteristics of the exposed set, search changes overall evaluations. Consequently, improving orderings are evaluated more positively than declining orderings under exhaustive search, but the opposite is true under limited search. Our analyses show that trend and end of an experience uniquely affect overall evaluations, over and above changes in quality. While average quality influences evaluations, it is not the sole driver of these findings.

Consistent with prior research that held the experience constant, we find that under exhaustive search improving orderings are evaluated more positively than declining orderings. However, we demonstrate these effects in the novel context of a goal-directed experience where participants had to select a single option from an ordered set and were given monetary incentives to maximize choice quality. In addition, we obtain these effects using a broad evaluation index that includes retrospective judgments of the chosen option, the observed set, and the provider, as well as a prospective measure of purchase likelihood.

**Limitations, Extensions, and Future Research**

We maintain that the psychological processes underlying our findings are attentional in nature. We argue that people incorporate salient moments in memory when forming overall evaluations; however, we do not have direct evidence of these psychological processes. Because of the experimental setup we were limited to distinguish only between two key moments, trend and end, and to disregard other moments, such as start and the peak. Further, following prior research, we rely on objective characteristics of the set to test whether they affect overall evaluations. But since we do not solicit subjective representations of these moments, we do not have direct evidence of the way participants’ perceptions affect overall evaluations. Future research should investigate a more comprehensive set of key moments and should elicit psychological representations for these key moments.

In our studies options were observed in a prescribed improving and declining ordering. One may argue that (1) con-
consumers rarely encounter improving orderings and (2) they do not follow the provided ordering when searching options. First, as discussed earlier, different patterns can naturally occur because of heterogeneity in attribute weights (Diehl et al. 2003). Presenting an identical set of options can represent an improving ordering for one person and a declining ordering for another. In a study available from the authors, our findings replicate in a situation where options were not reordered but rather were presented in the same sequence to consumers with different preference structures, creating opposite orderings.

The second criticism suggests that those who noted that a long list of options was improving in quality might tend to skip to the end. We constrained the order of search to magnify the power of our manipulations. Relaxing this constraint may weaken our effects because it weakens the perception of a sequence but should not alter our overall findings. Future research should investigate the effect of different orderings under less constraint search behavior.

Future research might also examine other potential moderators pertaining to both the extent of search and the effect of ordering on evaluations. We maintain that it is important to understand the dual effect of ordering on overall evaluations and endogenously determined search. Nevertheless, there could also be exogenous factors that determine search, such as search costs (Urbany 1986), involvement, and accountability (Lee et al. 1999), or need for cognition (Levin, Huneke, and Jasper 2000). In addition, future research should also investigate how characteristics of the ordering affect overall evaluations, for example, by manipulating the perceived cohesiveness of the ordering. To reap the benefits from improving orderings one needs to enhance perceived cohesiveness. When using declining orderings, lower perceived cohesiveness could mitigate the negative effect of the ordering.

Conclusions

This article highlights the important interplay between orderings and search. Prior research on evaluations of sequences has held the experience constant. Our research shows that whether declining or improving orderings lead to more positive evaluations depends on the extent of search consumers engage in. Searching ordered sets exposes consumers to a distinct sequence of items, characterized by different key psychological moments. These moments are the critical components of consumers’ overall evaluations.

APPENDIX A

ILLUSTRATION OF THE EFFECT OF SEARCH ON MOMENTS OF THE EXPERIENCE

<table>
<thead>
<tr>
<th>Observed set sizes</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Set size = 1</td>
<td>Set size = 2</td>
<td>Set size = 3</td>
<td>Set size = 4</td>
<td>Set size = 5</td>
<td></td>
</tr>
<tr>
<td>Set A: 5</td>
<td>Set A: 5 4 3</td>
<td>Set A: 5 4 3 2</td>
<td>Set A: 5 4 3 2 1</td>
<td>Set A: 5 4 3 2 1</td>
<td></td>
</tr>
<tr>
<td>Set B: 1</td>
<td>Set B: 1 2 3</td>
<td>Set B: 1 2 3 4</td>
<td>Set B: 1 2 3 4 5</td>
<td>Set B: 1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>P</td>
<td>E</td>
<td>T</td>
<td>M</td>
<td>P</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>4</td>
<td>-1</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>4</td>
<td>-1</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15</td>
<td>2</td>
<td>2</td>
<td>+1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Note.—Numbers in table reflect consumers’ psychological moments of a given set. Letters in column headings represent characteristics of the set: M = mean quality seen; P = peak, the quality of the best option seen; E = end, the quality of the last option seen; T = trend, the difference in quality between first and last option seen.

APPENDIX B

DEPENDENT MEASURES

Measures were taken on 100-point scales, with higher numbers indicating greater assessment of a characteristic. Hotels were used as stimuli in study 1, and apartments were used in study 2.

1. Considering all hotels [apartments] you looked at, how well did this set of hotels [apartments] match the taste of the person whom you were deciding for?
2. Considering all hotels [apartments] you looked at, how satisfied were you with this set of apartments, keeping in mind the preferences of the person you were deciding for?
3. How satisfied were you with the overall hotel [apartment] search experience?
4. If you had to search again for a hotel [an apartment] for this person in the future, what is the likelihood that you would use this site again to look for another apartment?
5. How satisfied are you with the hotel [apartment] you chose for this person?

[Copyright © 2007, Journal of Consumer Research]

REFERENCES

active Home Shopping: Consumer, Retailer, and Manufacturer Incentives to Participate in Electronic Marketplaces,” *Journal of Marketing*, 61 (July), 38–53.


