Search Paradox: the Role of Feature Alignability in the Rise and Fall of Satisfaction

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This research challenges the notion that increased search effort results in greater satisfaction with the choice. The results of two studies demonstrate that people are more inclined to continue searching when options are nonalignable compared to alignable. Although initial search increases consumers’ probability of finding a good match to their preferences, further search among nonalignable options decreases desires congruency, causing people to feel worse about their choices in environments where tradeoffs are inherent. This dual effect of search on satisfaction causes people to experience an initial increase and then decline (inverted U shape) in satisfaction. This research demonstrates the paradox that people search more options precisely when further search is detrimental to subjective choice outcomes.

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reasons for option limitation may spill over to affect the judgments of the remaining items in the assortment. Existing research suggests individuals’ general impression about a target causes them to judge the target similarly on other dimensions (Solomonson and Lance 1997). As a result, individuals’ general impressions are relatively homogeneous across their evaluations. Likewise, the reasons for option limitation may influence individuals’ general impressions of the assortment such that consumers’ opinions of the remaining items in the set should reflect the favorability of the reason for option limitation. That is, judgments of the remaining items in an assortment should be higher when the reasons for option limitation are favorable than unfavorable (i.e., sold out vs. discontinued).

We test our predictions against these contrasting accounts in three experiments in which we vary the reasons for option limitation (i.e., sold out or discontinued) and assortment characteristics (i.e., assortment size and organization). In study 1, we reasoned that individuals would perceive greater similarity among items when the assortment size is large than small. In study 2, we held fixed assortment size and manipulated assortment organization, specifically the extent to which assortment items were organized in a manner that facilitated item-specific (i.e., attending to the differences between alternatives) or relational (i.e., attending to the similarities between alternatives) processing. Finally, in study 3, we tested an important moderator of these effects. Specifically, if our findings are indeed driven by consumers’ intuitions about relative demand for sold out versus discontinued items, then our effects should hold only for those with relatively high versus low knowledge about market forces (e.g., the economic logic of supply and demand). Across these studies, we find that judgments of the available items depended not only on the reasons provided for option limitation but also upon factors influencing the likelihood that assortment items were similar. Specifically, when assortment was perceived as containing similar items, judgments were more positive when the unavailable items were labeled as sold out versus discontinued. However, when the assortment was perceived to contain dissimilar items, judgments were more favorable when unavailable items were discontinued versus sold out (study 3). Furthermore, we find that this interactive effect is mediated by participants’ beliefs that they were able to choose the best option from the remaining items (study 2) and moderated by individual differences in market knowledge (study 3).

Theoretically, we contribute to the choice literature, which has examined the influence of adding items to a choice set on attitudes towards existing items in the set, but has devoted far less attention to understanding the impact of removing items from the choice set on evaluations of the existing choice items. We also contribute to the choice reduction literature by demonstrating that the influence of option limitation on judgments of the available assortment is moderated by the reasons for the reduction and whether other similar items are likely to exist in among the remaining alternatives.

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“Man is the only animal whose desires increase as they are fed; the only animal that is never satisfied.”

Henry George (1839-1897)

This research seeks to identify situations where people are compelled to search further in spite of diminishing satisfaction. Specifically, we examine the role feature alignability plays in search quantity and search outcomes. A set of options can be considered alignable when it contains options that vary along a comparable feature. In contrast, a nonalignable set contains options that vary along non-comparable or unique features (Markman 1999; Gourville and Soman, 2005).

Searching among nonalignable options can increase learning about different features and benefits, whereas searching among alignable options provides information on just a single dimension. Consequently, it is argued that search among nonalignable options is more informative and engaging than is search among alignable options. Therefore, we expect greater search among nonalignable options than among alignable ones.

The impact of search on satisfaction is subject to a dual effect. Considering more options increases the chances of finding a close match to preferences (Baumol and Ide 1956). This is the basic argument for the cost-benefit tradeoff to search (Stigler 1961) where more effort leads to greater reward, in this case higher satisfaction. However, increased search can also increase desires for various features of a product. When physical product constraints or budget constraints require difficult tradeoffs to be made, an increase in desires can increase the psychological cost of choosing, decreasing satisfaction. We anticipate that both effects occur simultaneously. Which effect will dominate depends on the type and the number of options considered.

Regardless of alignability, we expect an initial increase in satisfaction from search as a person finds the feature or level of the feature that is most appealing. Nonalignable options are inherently more dissimilar than alignable ones, so we would expect a greater initial increase in satisfaction as the chance of finding a good match to personal preferences increases substantially with the first few nonalignable options searched.

As search continues, desires increase and the psychological cost of choosing begins to mount as tradeoffs must be made. When choosing among alignable options, a person receives some level of the alignable feature regardless of the choice, so the psychological cost of choice is not too great. In contrast, a choice among nonalignable options is inherently associated with feelings of loss as people pre-attach to various features of the options during search (Carmon, Wertenerbrough, and Zeelenberg 2003) but cannot have them all. This would predict a greater decrease in satisfaction resulting from search among nonalignable than among alignable options.

The results of two studies support this dual effect of search on satisfaction for nonalignable but not for alignable options. Specifically, people experience an initial increase and then decline (inverted U shape) in satisfaction with continued search among nonalignable options, whereas satisfaction remains fairly flat for alignable options.

Study 1 is a mixed design: 2 (feature alignability) x 3 (number of options) x 2 (category). Feature alignability is a between-subjects factor with features being either alignable or nonalignable. Number of options is a between-subjects factor with participants viewing 3, 9, or 15 options in a category with negative attribute correlation. Category is a within-subjects factor including the categories of computers and mp3 players with order counterbalanced. Participants are directed to a website and instructed to examine options and select the one they would be most likely to purchase.

The results demonstrate that people are inclined to search further among nonalignable than among alignable options. Furthermore, alignability of options moderates the impact of search on desires congruency. An inverted U shape for satisfaction with respect to search is found for nonalignable options but not for
alignable options. Thus, we find evidence that people are more likely to continue searching even when choice satisfaction is declining as a result.

Study 2 extends Study 1 by examining free search where subjects can examine as many or as few options as they want. Additionally, we gain insight into the process underlying the effect of search on satisfaction by varying the timing of feature exposure. If the increase in desire resulting from search is due to feature exposure, we predict that exposure to features prior to search will negate the inverted U of satisfaction.

Participants in this study are assigned to one of three alignability conditions: alignable (A), nonalignable (NA), and nonalignable with feature pre-exposure (NAF). Participants are directed to a website containing 15 negatively correlated options. They search as few as many options as they want and make a choice in the category of computers.

Corroborating Study 1, the results of Study 2 demonstrate that people search more when options are nonalignable than when they are alignable. Additionally, satisfaction initially increases and then declines as search progresses among nonalignable options. As predicted, there is no such inverted U shape for satisfaction when people search among alignable options or when they search among nonalignable options with prior exposure to features. Taken together, these analyses provide support for the idea that exposure to features during search among nonalignable options drives the inverted U for satisfaction.

In summary, the results of two studies demonstrate the paradox of search, indicating that people desire to continue expending resources in search among nonalignable options even when they begin to feel worse as a result. Our findings have a number of theoretical implications for search behavior as well as option alignability. There are also significant implications for consumers hoping to maximize satisfaction with their choices and for retailers trying to determine which products to offer and what type of information to provide.

**BIBLIOGRAPHY**


Summary

Collecting data over the Internet seems like a solution to all an experimentalist’s problems. Responses can be collected from the far corners of the world, from people in all walks of life. Experiments that would take months and cost thousands in person can now be carried out in days for a pittance. But ours is not an ideal world. Researchers wrestle with fickle software and participants who falsify identities, respond randomly, and worse. This roundtable gathers together seven active Web-based researchers to share tips, tricks, and long-run strategies for building, running, and maintaining an online laboratory.

The roundtable will be structured by the moderator opening seven different topics for discussion. During discussion, the seven panelists as well as members of the audience can share experiences and ask questions.

The first topic will be online lab construction, and the following questions will be opened for discussion. How have the panelists constructed their online labs? What percentage of software used is built and what percentage purchased? Which hosting companies are being used? What are the advantages and disadvantages of using various online survey companies? How are the issues of joining data and transferring responses to statistical packages being carried out?

The second topic is subject recruitment. What is the approximate size of the various panelists’ pools? How were these participants recruited into the pool? How effective is advertising in building a pool? How effective is word of mouth? What is the impact of being listed? What strategies have been employed in reaching participants in other countries, of different age groups, and of different wealth levels?

Third is panel management. What percentage of emails bounce? What means are being used to clean dead entries from the database? How can a pool of participants be shared by many researchers in a department without causing conflict or ruining effects? How can one keep track of which participants have completed which studies?

Fourth comes payment. What means of payment are being used by the panelists? What are the pros and cons of direct payment, lotteries, or prizes? Are there types of studies that cannot have performance-based payment when carried out online? What means of direct payment are being employed? How best to pay participants in countries without online payment mechanisms? How can participants who wish to remain anonymous be paid?

Next comes an issue sure to get an emotional response: rule enforcement. How can we tell when participants are taking an experiment multiple times? How can we tell when participants aren’t reading instructions? How can we tell when respondents are responding randomly? How can we prevent unauthorized participants from taking an experiment? How can we make sure participants take the desired path through the experiment? Is there a way to ask general knowledge questions online, where subjects have easy access to all the knowledge of the Internet at their fingertips? How can we prevent participants from sharing answers and making parts of the experiment public? What are the various kinds of “angry customers” and what is the best way to handle them?

Sixth is data cleaning. What methods can we employ for detecting random responses? What methods can we use to enforce the one-submission-per-person rule? What methods are being used to clean data by response time? Should multiple responses per household be allowed? How can we treat incomplete surveys? At what point is a survey incomplete and at what point is it not started? Can we generate a priori rules for cleaning online data? What methods are most defensible from a journal’s point of view?

Last and perhaps most importantly experimental integrity issues. How best to pseudo-randomly assign participants to conditions? How to organize and re-use blocks without compromising the flow of the participant experience? What processes of item-level randomization are being employed? Can accurate response-time data be best collected online? How should we be reporting response rates: based on emails, visits to the site, or some other measure? What techniques can be used to obtain consent and to keep data private?

There will be an opportunity at the end of the session for panelists and attendees to exchange information and discuss collaborative possibilities. A signup list will be circulated for attendees to easily exchange contact information.