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THE SLIPPERY SLOPE: THE IMPACT OF FEATURE ALIGNABILITY ON SEARCH AND SATISFACTION

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ABSTRACT

This research challenges the notion that increased search effort results in greater satisfaction with the choice. Specifically, we examine the impact of alignability on search quantity and search outcomes. Options that vary along comparable dimensions are characterized as alignable, whereas options that vary along unique dimensions are said to be nonalignable. The results of three studies demonstrate greater search among nonalignable than alignable options. Furthermore, satisfaction initially increases but then declines with further search among nonalignable options. Although choice difficulty is shown to impact search and satisfaction, the primary mechanism driving the inverted U shape in satisfaction for nonalignable options is shown to be feature learning. This research demonstrates the paradox that people continue to search more options precisely when further search is detrimental to satisfaction, falling down the slippery slope of search.

Key words: search, satisfaction, alignability, assortment, consumer decision making

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Consider the following example:

> Jim and Marjorie are looking to buy a house. The first one they visit has a pool. The second one doesn't have a pool, but it has a view of the city lights. The next one has neither a pool nor city lights view, but it does have a finished basement. As they consider each new prospective house, they encounter additional features they would like. Ideally, they would like a house with a pool, city lights view, and a basement. Such a house may not exist, or it may be beyond their budget. Their frustration is mounting because they can't get everything they want, yet they continue searching for just the right house.

In this example, Jim and Marjorie could cut their losses short, stop searching, and make a choice, but instead they are compelled to examine more houses. Such search would appear to be counter to the preponderance of literature suggesting that consumers are cognitive misers (Shugan 1980) who search very little (see Camerer 1995 for a review). Yet, the literature on assortment suggests extensive choice can be alluring in spite of negative consequences (Iyengar and Lepper 2000). In assortment research, choice sets are externally-generated by the experimenter or the retailer, and consequently the number of items is set. The goal of our research is to take the next important step of examining the role the consumer plays in constructing his or her own choice set through search and consideration (i.e., self-generated sets). Just as people are simultaneously attracted to and bothered by large assortments, would we

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expect them to continue searching and expanding their choice sets in spite of the fact that they may eventually feel worse about their decisions as a result?

We propose that alignability influences the degree of search and moderates the subsequent impacts on satisfaction with the choice. In the house search example, the houses that Jim and Marjorie examine are distinguished by nonalignable differences. A nonalignable difference is observed when the differences are along multiple, unique dimensions (i.e., a pool vs. a basement), whereas an alignable difference is observed when there is a difference related to a single dimension (i.e., 2 vs. 3 bedrooms) (Gourville and Soman 2005; Markman 1999). Alignability has been shown to be an important factor in consumer decision-making with consumers exhibiting greater difficulty processing nonalignable versus alignable features (Zhang and Markman 2001) and showing greater preference for using alignable information in choice (Zhang and Fitzsimons 1999). At the same time, nonalignable assortments contain information on multiple features and may draw consumers further into the search process, increasing what they desire in an ideal option. When tradeoffs must be made among these features, however, choice can become more painful and disappointing. We argue that the freedom to construct one's own choice set through search combined with the feature learning commonly associated with search among nonalignable options drives people to both search more and eventually feel worse, falling down the slippery slope of search.

ALIGNABILITY AND ASSORTMENT

Choosing from assortments has been shown to be a hierarchical process with consumers attracted to large product assortments in the first stage of choice (assortment choice) but subsequently hindered when selecting a final product in the second stage of choice (product choice) (Kahn and Lehmann 1991). Large assortments have positive effects on store choice (Arnold, Oum and Tigert 1981; Broniarczyk, Hoyer, and McAlister 1998), attraction to shelf displays as well as positive affect (Iyengar and Lepper 2000). However, extensive choice leads to negative effects in the second stage of product choice including decreased choice accuracy (Jacoby, Speller, and Kohn 1974; Payne 1976), greater difficulty (Huffman and Kahn 1998; Shugan 1980), and higher regret (Iyengar and Lepper 2000). Moreover, large assortments can heighten expectations of preference matching, resulting in satisfaction declines if expectations are not met (Diehl and Poynor 2009). These negative effects of extensive choice can ultimately diminish choice likelihood (Iyengar and Lepper 2000).

Recent research on assortment has identified alignability as a moderator of the negative impact of extensive choice (Chernev 2005; Gourville and Soman 2005). Specifically, Gourville and Soman (2005) compared choice between two brands, Brand A offering a single product option and Brand B offering up to five product options. When Brand B increased its product assortment from one to five options, its market share increased from 53% to 73% when the attribute differences were alignable but decreased from 53% to 40% when the attribute differences were nonalignable.

Gourville and Soman (2005) identified two mechanisms driving the negative effect of nonalignable features on product choice as assortment increased: cognitive load and regret. Choosing from nonalignable assortments places a greater cognitive load on consumers than choosing from alignable assortments, as comparisons among attributes are more difficult than comparisons across attribute levels. Compared to alignable features, nonalignable features are harder to evaluate (Zhang and Markman 2001), receive less attention and weight in choice

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(Lindemann and Markman 1996; Markman and Medin 1995), and are less likely to be remembered (Markman and Medin 1995). Moreover, choosing among nonalignable options introduces the potential for regret as tradeoffs must be made among features. Accordingly, choosing among nonalignable (vs. alignable) options is associated with a greater likelihood of defecting to a different brand (Gourville and Soman 2005), experiencing lower choice process satisfaction (Zhang and Fitzsimons 1999), or postponing choice altogether (Chernev 2005).

The general consensus emerging from this research is that people have a disutility for choosing among nonalignable options, preferring instead the simpler task of using alignable differences in comparison and choice. As cognitive misers, people are motivated to minimize the time and cognitive effort search requires (Shugan 1980). Faced with the task of generating their own option sets through search, people might be expected to search less among nonalignable than among alignable options. On the contrary, we propose that people will actually search more among nonalignable options than among alignable ones.

ALIGNABILITY AND SEARCH

Our focus is on consumer search in categories where people have limited knowledge. In such cases, we argue that the learning occurring during search among nonalignable options draws people into the search process, propelling them to search further. During search, two types of learning can occur: feature learning and option learning. First, search can expose consumers to the possible features or range of features for products in a category. Second, search can expose consumers to the combinations of features that exist in the available options, highlighting the tradeoffs necessary due to product or budget constraints. Both types of learning are argued to increase search more among nonalignable than alignable options.

Learning about product features through search may serve to build a knowledge base in the product category or may fulfill purely hedonic motives (Bloch, Sherrell, and Ridgway 1986; Putsis and Srinivasan 1994). Search among nonalignable options allows people to learn about additional features or dimensions, whereas search among alignable options only reveals different levels or values of the same features. Consequently, feature learning among nonalignable options is more engaging and provides greater hedonic value, adding to the allure of search. Furthermore, people search more extensively when relative uncertainty among options is high (Moorthy, Ratchford, and Talukdar 1997) and when familiarity with options is low (Urbany 1986). Distinguished by different dimensions, nonalignable options are inherently more dissimilar from one another than are alignable options. This greater variability among options increases the learning value of search, fueling an increase in search amount (Balvers 1990; Urbany 1986).

The option learning that occurs during search highlights the necessity of making tradeoffs. For nonalignable options, the number of possible dimensions increases during search, making it cognitively more difficult to evaluate the options. Additionally, nonalignable options inherently exhibit greater conflict as tradeoffs must be made across rather than within features (Gourville and Soman 2005). Greater conflict and difficulty can lead people to seek new alternatives as a means of postponing the taxing and sometimes painful process of weighing all the options and making a selection (Tversky and Shafir 1992; Luce, Bettman, and Payne 1997).

Due to both feature learning and option learning, we hypothesize that:

H1: Search amount will be greater among nonalignable than among alignable options.

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One main reason people search is to improve the choice outcome. Generally speaking, further search results in greater choice accuracy (Johnson and Payne 1985; Shugan 1980) or better match to preferences (Baumol and Ide 1956; Kahn and Lehmann 1991). This is the basis for the cost-benefit tradeoff to search (Stigler 1961) where more effort can lead to greater reward. Here, we are interested in subjective outcomes of search, namely satisfaction with the choice, and we argue that more effort does not necessarily lead to greater reward in this regard. Instead, we propose the impact of search on satisfaction depends upon the level of search and the alignability of the options.

Because nonalignable options are more dissimilar than alignable ones, individual preferences are more dispersed. Accordingly, we expect to see a greater initial increase in satisfaction as one examines options and hones in on the most preferred one. Moreover, each additional nonalignable option searched increases the potential for delight and gratification in uncovering something completely new and attractive. In contrast, as search among alignable features only reveals different levels of a single feature, the benefit to searching is more limited. As a result, we expect to see a greater initial increase in satisfaction for nonalignable compared to alignable options.

As search progresses, however, we expect an eventual decline in satisfaction for nonalignable but not alignable options. To begin with, processing each new option entails greater cognitive load for nonalignable than for alignable options (Gourville and Soman 2005; Zhang

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and Markman 2001). One would expect this cumulative difficulty to negatively impact satisfaction as it becomes more difficult to identify the most preferred option. Moreover, feature learning in search among nonalignable options can increase desires as each additional attractive feature encountered can be aggregated in a consumer's mind to construct an ideal option (Chernev 2005). Such ideals, whether attainable or not, may become highly salient and form a basis for comparison in determining satisfaction (Barsalou 1985). During option learning, the ideal becomes less and less attainable and the conflict among choices increases. As a result, the pain and disappointment associated with choosing increases, and satisfaction with the choice is expected to decline. For alignable options, on the other hand, one experiences neither the same increase in ideals from feature learning nor the same increase in conflict from option learning.

In summary, we predict that satisfaction follows an inverted U shape for search among nonalignable options, initially increasing and eventually declining. We expect that the initial allure combined with initial preference matching leads to an increase in satisfaction whereas the accruing difficulty and disappointment eventually undermine satisfaction for search among nonalignable options. In contrast, for alignable options we expect neither the same initial increase in satisfaction nor the same subsequent decrease in satisfaction upon continued search.

H2: Alignability moderates the impact of search on satisfaction such that choice satisfaction initially increases and then decreases for search among nonalignable options (inverted U) but not for search among alignable options.

Combining the prediction of greater search among nonalignable options with the initial increase and eventual decline for satisfaction when options are nonalignable, we have reason to suspect that people will search beyond the point where search is beneficial, ultimately undermining satisfaction. We refer to this as falling down the slippery slope of search.

There is another possibility that must be ruled out, however. Prior research has demonstrated avoidant behaviors such as deferral and defection with nonalignable assortments (Chernev 2005; Gourville and Soman 2005). It is possible people will realize when things are becoming worse and will stop searching. Indeed, information overload research has shown that people can become overloaded when forced to process too much information, but when given control over the information, they stop short of overloading themselves (Jacoby 1984).

Normative search models argue that the optimal amount of search should occur at the point where the marginal cost equals the marginal benefit (Ratchford 1982; Stigler 1961; Weitzman 1979). Thus, even if people search more among nonalignable options than among alignable ones, they should not search to their own detriment. In fact, a key finding from the search literature is that people have been shown to search too little compared to optimal levels (Camerer 1995; Furse, Punj, and Stewart 1984). Various field studies have further corroborated low levels of external search (Hoyer 1984; Johnson et al. 2004).

While the bulk of extant evidence suggests that people will not search too much, recent research has begun to identify conditions where consumers search beyond the optimal amount. For example, greater search among options ordered by a decision agent has been shown to lower consideration set quality, leading to ultimately worse choices (Diehl 2005). Additionally, when people are not well-calibrated to search costs, they can spend valuable time in search without commensurate choice improvement (Zwick, Rapoport, and Muthukrishnan 2003). We add to this

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nascent research stream by demonstrating that feature nonalignability may also lead people to search beyond the optimal point in terms of satisfaction.

In this research, we posit that the learning occurring during search among nonalignable options draws people into the search process, pushing them to continue searching further. After a point, however, learning about desired features and available options makes the decision more difficult and disappointing, eventually undermining satisfaction for nonalignable options and leading people to fall down the slippery slope of search. As a corollary to Hypotheses 1 and 2, we predict:

H3: For search among nonalignable options, people are likely to fall down the slippery slope, continuing to search in spite of the detrimental impact to choice satisfaction.

In a series of three studies, we examine our predictions regarding the impact of alignability on search amount and satisfaction. Study 1 examines the impact of search on satisfaction in a controlled setting where the amount of search is manipulated. Studies 2 and 3 examine free search where people elect to search as few or as many options as they like before committing to a choice. This allows us to test whether people actually search to their own detriment when options are nonalignable. The last two studies also examine whether feature learning drives the increase in search amount and the inverted U effect of search on satisfaction for nonalignable options.

STUDY 1

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Design

This study manipulates the level of search for each individual in order to specify the shape of the satisfaction curve at various search levels. Specifically, this study employs a 2 (alignability) x 3 (number of options) x 2 (category) mixed design. Alignability is a between-subjects factor with options being either purely alignable or mixed alignable/nonalignable. Since alignability can be construed as a continuum, we refer to option sets with all alignable features as alignable and option sets with some nonalignable and some alignable features as nonalignable. Number of options is a between-subjects factor with participants viewing 3, 9, or 15 options in a category. In these assigned search level conditions, we measure desire to search further as a proxy for search amount. Category is a within-subjects factor of computers and mp3 players with order counterbalanced.

<u>Stimulus Material</u> A pretest was conducted in which twenty-eight participants rated the attractiveness of each of the features on a 10-point scale. Nonalignable and alignable sets of 15 options were then created to exhibit the type of negative attribute correlation commonly associated with choice (i.e., options were ordered from most to least attractive on one feature and were then matched up with the other features in the reverse order of attractiveness). For computers (mp3 players), processor speed (song storage) was the common tradeoff feature. It was traded off against hard drive sizes (battery life) for alignable options and against various other features for nonalignable options. RAM (player size) was held constant across both sets of options. To ensure all options had the same feature structure, the midpoint level of hard drive size (battery life) was held constant for nonalignable options, whereas the midpoint attractive other feature was held constant for alignable options. Table 1 shows a sample of some of the options used in this study. A full listing of the options can be found in the web appendix.

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Insert table 1 about here

Procedure Participants were 213 undergraduates receiving extra credit for participating. They were directed to a website and instructed to examine options and select the one they would be most likely to purchase. The website listed all the options available by nondescript model numbers (i.e., B71T, M14Q, etc.). Five different sets of options were created for each condition to ensure that each option from the full set of 15 options would appear with equal likelihood in the sets of 3 and 9 options. A participant would be randomly directed to one of the five sets for the assigned condition. Furthermore, the order in which the models appeared on the websites was randomly determined to mitigate any order effects. Participants could click on a model number to see the description of that model.[1] They could click on the options in any order and as many times as they wished, but they were instructed to examine all options before making their choices in order to ensure that the correct number of options was searched. After making a selection, they answered questions about their choice.

Measures All measures utilized seven-point scale responses with the endpoints as noted in parentheses. The order in which the dependent measures were collected was: desire to search, choice satisfaction, and individual difference maximizer/satisficer scale. We examine the inclination to search using the sum of two self-report items: "If I had the opportunity, I would examine more options" (Completely Agree/Completely Disagree) and "I wish there were more options available to choose from" (Completely Agree/Completely Disagree) (α = .78). To gauge satisfaction with the choice, participants were asked to rate how happy they were with their choice (Extremely Unhappy/Extremely Happy), how satisfied they expected to be with the

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chosen product (Extremely Dissatisfied/Extremely Satisfied), and whether they felt disappointed with their choice (Completely Agree/Completely Disagree) (reverse coded) These items were summed to form a satisfaction score ($\alpha = .82$). Finally, a 13-item maximization scale developed by Schwartz et al. (2002) was administered to all participants to gauge the degree to which a person tends to try to find the best option (maximizer) versus an acceptable option (satisficer). The actual amount of search was captured via clickstream data.

Results

The data are analyzed using a linear regression model with two orthogonal contrast codes to test for linear and quadratic trends with respect to number of options searched (Keppel 1991). The independent variables in the model include alignability, the linear contrast code for search, the quadratic contrast code for search, and the interactions of the contrast codes with alignability. No significant effects related to the maximizer scale were found so it will not be reported further. Table 2 reports the regression results.

Insert table 2 about here

<u>Search Inclination</u> As the number of options available to search is a manipulated variable in this study, we use the reported inclination to search further as a proxy to indicate how much one might actually search given the possibility to do so. As one might expect, the desire to continue searching diminishes as more options are examined as seen by the significant linear [$b = -.92$, $t(207) = -4.64$, $p < .001$] and quadratic trends [$b = .36$, $t(207) = 3.17$, $p < .01$; $M_{3\text{ options}} = 11.81$, $M_{9\text{ options}} = 9.81$, $M_{15\text{ options}} = 9.94$]. Our central interest, however, is whether feature

alignability affects search desire. Consistent with Hypothesis 1, there is a main effect of alignability on the two-item measure of search inclination such that the inclination to search is greater among nonalignable than alignable options [$b = -.47$, $t(207) = -2.90$, $p < .01$; $M_{\text{nonalignable}} = 11.00$ vs. $M_{\text{alignable}} = 10.09$]. The greater search inclination among nonalignable than alignable options held regardless of the number of options examined [interaction between number of options and alignability for linear contrast: $b = -.29$, $t(207) = -1.44$, $p > .10$; for quadratic contrast: $b = -.08$, $t(207) = -.68$, $p > .40$]. Thus, the results support the prediction that people are inclined to search further among nonalignable than among alignable options (see Figure 1).

Satisfaction Hypothesis 2 predicts that search leads to an initial increase and then decline in satisfaction for nonalignable but not for alignable options. Examining the interaction of the quadratic contrast code and alignability [$b = .20$, $t(207) = 1.938$, $p = .054$], we find support for this prediction. Table 3 reports simple effects using separate regressions in each condition. For nonalignable options, the quadratic is significant with satisfaction initially increasing then declining [$b = -.47$, $t(99) = -3.17$, $p < .01$; $M_{3\text{ options}} = 15.10$, $M_{9\text{ options}} = 16.70$, $M_{15\text{ options}} = 15.47$]. For alignable options, neither the quadratic [$b = -.08$, $t(108) = -.56$, $p > .50$] nor the linear trend is significant [$b = .22$, $t(108) = .92$, $p > .30$; $M_{3\text{ options}} = 15.62$, $M_{9\text{ options}} = 16.07$, $M_{15\text{ options}} = 16.05$]. See Figure 1. Thus, there is support for an inverted U shape for satisfaction only with search among nonalignable options as predicted in Hypothesis 2.

Insert table 3 and figure 1 about here

We hypothesized that when search exposes a person to new features but no single option has all of the desired features, the pain of choosing increases and satisfaction ultimately declines.

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An alternate explanation could be that mere elaboration on the options increases attachment and makes the decision more painful (Carmon, Wertenbroch, and Zeelenberg 2003). If this is true, then we should find similar satisfaction effects as people spend more time in search regardless of the number of options examined. To test whether the inverted U for satisfaction will emerge as a result of mere elaboration among nonalignable options, similar analyses were run using search time from the clickstream data as the search measure rather than using the number of options searched. Neither the main effect of the quadratic for search time [$t(207) = -.53$, $p > .50$] nor the interaction of alignability and the quadratic for search time [$t(207) = -.75$, $p > .40$] was significant. Thus, it seems that search time is not enough to drive the inverted U in satisfaction. Our data suggest that such an effect is only found when unique options are searched or, in other words, as people learn about or are exposed to more features.

Discussion

In summary, Study 1 examined the role alignability plays in motivation to search and in the subsequent impact of search on satisfaction. Corroborating predictions, the results indicate a greater inclination to search among nonalignable than alignable options. Furthermore, this study demonstrates that satisfaction follows an inverted U shape with satisfaction first increasing and then falling as the number of nonalignable options searched increases. Finally, this study shows that only further search of additional options (not increased search time) leads to the inverted U of satisfaction. This indicates a role of feature learning in the effect of search on satisfaction.

The data in Study 1, though, did indicate an overall decline in search inclination as more options were examined, so it is possible people might recognize the mounting pain of greater search among nonalignable options and might limit search accordingly. Study 2 is therefore

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designed to take the next critical step of examining whether the greater intent to search among nonalignable (vs. alignable) options demonstrated in Study 1 will translate into a greater number of options searched and whether people will actually search enough to fall down the slippery slope of diminished satisfaction. Additionally Study 2 seeks to examine the role feature learning plays in the impact of alignability on search amount and satisfaction. By definition, nonalignable options vary along unique dimensions, so search among nonalignable options provides an opportunity to learn about product features or dimensions each step of the way. However, it is possible for search among nonalignable options to be construed in such a way that it does not reveal any new features. One way that this could happen is if people are exposed to all the features prior to search (i.e., through product research that explains possible product features or through a salesperson explaining possible features). Carlson and Bond (2006) examine such feature pre-exposure as a means of limiting the effect of context on choice. Similarly, by manipulating feature pre-exposure we can gain a better understanding of feature learning as a mechanism underlying the impact of search on satisfaction.

We anticipate that the degree of search could be impacted by feature pre-exposure in two opposing manners. When people are exposed to features prior to search, then search itself will not reveal any new features or dimensions. With the learning value of search diminished through feature pre-exposure (i.e., feature learning), we might expect the level of search to diminish. On the other hand, pre-exposure to features may draw people into the search process more as they know what features they would like and they continue searching to find the best combination of them in a single product option (i.e., option learning). Hence, we will not make an a priori prediction regarding feature pre-exposure on search amount.

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Notably, though, we expect feature pre-exposure to mitigate the impact of search among nonalignable options on satisfaction by reducing the initial incline as well as the subsequent decline. With feature pre-exposure, the realm of possible features is known prior to search, so there is not as much to gain from the feature learning aspect of search. The search task becomes one of merely finding the most preferred combination of already known features through option learning. As a result, the initial incline of satisfaction is small due to limited discovery of more preferred features. Furthermore, we anticipate that feature pre-exposure will also reduce the impact of search on the eventual decline in satisfaction for nonalignable options by taking away the effect of search on building up the dimensionality of the ideal. Feature pre-exposure, in essence, separates feature learning from the search process, leaving only the detrimental impact of option learning on satisfaction. Thus, we predict that feature pre-exposure reduces both the initial incline as well as the subsequent decline of satisfaction with search, mitigating the inverted U.

H4: Feature pre-exposure mitigates the inverted U of satisfaction for nonalignable options.

To further isolate feature learning, we will also measure and control for choice difficulty. Greater choice difficulty may lead people to search more as a choice avoidance mechanism (Tversky and Shafir 1992). However, we also expect the greater hedonic and informational aspects of feature learning for nonalignable compared to alignable options to exert an effect on search beyond that of choice difficulty. In terms of satisfaction, we expect greater choice difficulty will contribute to diminished satisfaction, partially accounting for the declining part of the satisfaction curve. Feature learning, on the other hand, is expected to contribute to both the

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increasing desires and accruing disappointment that arise during search of nonalignable options, accounting for both the initial rise and the subsequent decline in satisfaction

Study 2 has five key goals. First, H1 is tested in a free search scenario where people generate their own choice sets. Second, we seek to replicate the initial increase and then decline of satisfaction for search among nonalignable options (H2). Third, we test the slippery slope hypothesis (H3) to determine whether people will search enough among nonalignable options to become worse off. Fourth, we manipulate feature pre-exposure to illuminate the role of feature learning in the impact of search on satisfaction (H4). Lastly, we control for choice difficulty to isolate the role of feature learning in search amount and satisfaction.

STUDY 2

Design

Participants were assigned to one of three alignability conditions: Alignable (A), Nonalignable (NA), and Nonalignable Feature Pre-exposure (NAF). Search was a measured variable. All options were presented on websites, and people could search as few or as many options as they wanted. The category used was computers.

Stimulus Material As in study 1, alignable and nonalignable sets of 15 options were created to exhibit negative attribute correlation with tradeoffs based upon attractiveness ratings from a pretest. For the alignable options processor speed was traded off against hard drive size, whereas for nonalignable features, processor speed was traded off against other features.

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Options were listed on websites with links to product description pages. Participants could click on an option to see all the features associated with it. Then, they could select that option or return to the main product listing page. To ensure that people would not feel compelled to search all 15 options, the options were sorted in decreasing order on the feature rated most important in the pretest—processor speed. This kind of sorting is commonly found on websites that allow people to sort by features.

Procedure Participants were 256 undergraduates receiving extra credit for participating. As a way to manipulate feature pre-exposure and separate feature learning from the search task, participants in the NAF condition were asked to rate the attractiveness of each of the 15 possible nonalignable features prior to searching on the website. They rated each feature on a scale from 1 to 7 with 1 being 'extremely undesirable' and 7 being 'extremely desirable'. Participants in the A or NA conditions were not asked to rate the options in advance. After rating the features, participants were then directed to the appropriate website and instructed to select the option they would be most likely to purchase. They then answered questions about their choice.

Measures Amount of search was measured by examining the clickstream data for number of unique options searched. Total search time was also captured in the clickstream data. Participants also completed the same measures on satisfaction and maximization that were used in study 1. Additionally, two 7-point items were used to probe choice difficulty: "How difficult was it for you to decide which option to choose?" and "How complex did you find it to make your decision?" ($\alpha = .89$).

Results

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Search Amount To examine the search results, we use ANOVA with a dummy variable representing the three conditions (A, NA, and NAF) as the independent variable, choice difficulty as a covariate, and number of unique options searched as the dependent variable. We find that the difficulty covariate is marginally significant [$F(1, 252) = 2.77$, $p < .10$], indicative of greater difficulty leading to higher search levels. However, even after controlling for choice difficulty, we find significant differences among the three conditions in number of unique options searched [$F(2, 252) = 16.80$, $p < .001$, $M_{NA} = 11.66$, $M_{NAF} = 10.27$, $M_{A} = 7.58$]. Hypothesis 1 predicts greater search among nonalignable than alignable options. Supporting this hypothesis, planned comparisons reveal that for nonalignable options (NA) compared to alignable options (A), people do in fact search more unique options [$t(168) = -5.76$, $p < .001$]. We find that feature pre-exposure results in a reduction on search amount among nonalignable options [$t(166) = -1.956$, $p = .052$]. This result suggests that the decreased learning value due to feature pre-exposure outweighed the potential search increase to locate a specific feature. See figure 2 for results.

Insert figure 2 about here

Satisfaction The satisfaction data are analyzed using a linear regression model with a dummy variable representing the three conditions (A, NA, and NAF), linear and quadratic variables for the number of options searched, the higher order interactions of the dummy variable with the linear and quadratic search variables, and a choice difficulty covariate. The regression results for the complete model are presented in Table 4. There were no significant effects related to maximization.

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Insert table 4 about here

As one would expect, the choice difficulty covariate was significant with greater choice difficulty leading to lower satisfaction overall [$b = -.21$, $t(249)$ -3.78, $p < .001$]. Importantly, even after controlling for choice difficulty, we still find a significant interaction of the dummy variable for condition and the quadratic variable for search [$b = .04$, $t(249) = 2.65$, $p < .01$].

We next examine the simple regression effects within each condition. Hypothesis 2 predicts an inverted U in satisfaction for search among nonalignable but not alignable options. Supporting this hypothesis, we find a significant quadratic effect [$b = -.06$, $t(80) = -2.85$, $p < .01$] with satisfaction initially increasing and then diminishing as search progresses for nonalignable (NA) options. In contrast, there is no such quadratic effect of search on satisfaction for alignable (A) options [$b = .00$, $t(83) = -.18$, $p > .80$]. Hypothesis 4 predicts that search will lead to an inverted U for satisfaction only when there is feature learning during search. In support of H4, there is no such quadratic effect of search on satisfaction for nonalignable options with feature pre-exposure (NAF) [$b = .03$, $t(81) = 1.56$, $p > .10$]. Thus, it is only when feature learning occurs during search among nonalignable options (NA) that we find an inverted U in satisfaction, corroborating Hypothesis 4. Table 5 presents the results of each of the separate regressions analyzed here, and Figure 2 graphs the predicted values from these regressions.[2]

Insert table 5 about here

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To test whether similar satisfaction effects emerge as a result of mere elaboration among nonalignable options, we examine search time and find no support for a quadratic effect of search time on satisfaction for nonalignable options [$t(81) = .60$, $p > .50$]. Once again, it seems that merely elaborating on the options is not enough to drive the inverted U in satisfaction, suggesting that such an effect is only found as people are exposed to more features through search of unique options.

Finally, since this study allows people to generate their own option sets through search, we can examine whether people actually search too much when options are nonalignable (H3). Estimating the regression coefficients of the inverted U for nonalignable options (NA) ($Y = 13.02 + 1.17^{*}\text{ Search} - .07^{*}\text{ Search}^2$) and solving for the maximum point, we find that satisfaction peaks and begins to decline at 8.4 options in this study. In support of H3, we find that 71.4% of the participants searched 9 or more options, showing that many people do continue to search in spite of lower product satisfaction. This demonstrates that given the opportunity to generate their own set of options through search, people are likely to fall down the slippery slope of search.

Discussion

This study makes the important step of showing that when given the opportunity to construct self-generated choice sets through search, people search more when options are nonalignable (vs. alignable). Furthermore, we replicate the finding that increased search among nonalignable options leads to an initial increase and eventual decline for satisfaction. This effect is only found for search of unique options (not for search time), still remains when we control for choice difficulty, and it goes away when people are exposed to the features prior to search. This illuminates the role of feature learning in the effect of search on satisfaction. Finally, this study

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finds that many people fall down the slippery slope of search, continuing to search beyond the point where satisfaction declines when options are nonalignable.

STUDY 3

This study is designed to test the robustness of the search and satisfaction results using improved alignability and feature-exposure manipulations. First, in study 2, the alignability manipulation varied different features. To rule out the possibility that differences in the importance of these features may be driving the search or satisfaction results, we introduce a new manipulation that varies the alignability of a single feature. Second, the feature pre-exposure procedure of study 2 not only exposed subjects to the features but also asked them to indicate preferences by rating them. Study 3 introduces a new feature pre-exposure manipulation that does not encourage preference formation prior to search. Additionally, we examine whether search leads to the same inverted U for process satisfaction as for choice satisfaction.

Design

This study employs a 2 (control vs. feature pre-exposure) X 2 (alignable vs. nonalignable) between-subjects design. All options are presented on websites that allow people to search as few or as many options as they wanted. The category used was computers.

Stimulus Material As in studies 1 and 2, alignable and nonalignable sets of 15 options were created to exhibit negative attribute correlation with tradeoffs based upon attractiveness ratings from a pretest. The computers were described along four features (Processor, Memory, Hard Drive, and Monitor). Alignability was manipulated on a single feature, monitors, in this study to avoid any confound with the importance of the features varying in each condition. In

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both alignable and nonalignable conditions, processor speed was traded off against monitors. In the alignable condition, the monitors varied in size (i.e., 13 inch monitor, 15 inch monitor, etc.), whereas in the nonalignable condition the monitors varied in other ways (i.e., multimedia monitor, antiglare monitor, etc.) Table 6 shows a sample of the options used in this study. A complete listing of the options can be found in the web appendix.

Insert table 6 about here

Options were listed on websites with links to product description pages. Participants could click on an option to see all the features associated with it. Then, they could select that option or return to the main product listing page. Similar to study 2, options were sorted in decreasing order on processor speed.

<u>Procedure</u> Participants were 269 undergraduates receiving extra credit for participating. To manipulate feature pre-exposure without encouraging preference development, participants in the feature pre-exposure condition were shown each monitor type one at a time in random order prior to searching on the website. Specifically, subjects clicked to see each monitor type and then were required to write each one down on a provided worksheet. In the control condition, participants did not process the monitor features before search.[3]

<u>Measures</u> As in study 2, the number of unique options searched was captured in the clickstream data. Participants also completed the same measures on satisfaction, maximization, and choice difficulty as in Study 2. Additionally, process satisfaction was measured using the 7-

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point item: "How satisfied/dissatisfied were you with the process of selecting a product?" (Extremely Satisfied/Extremely Dissatisfied).

Results

Search Amount Search amount was analyzed using Analysis of Variance with alignability and feature exposure as the independent variables and choice difficulty as a covariate. The choice difficulty covariate was significant, [F (1,264) = 10.45, p < .01] indicating that subjects searched more when they encountered greater choice difficulty. Corroborating results from study 2 and supporting hypothesis 1, we find a significant main effect of alignability for number of unique options searched [F (1,264) = 17.56, p < .001; M_{NA} = 8.32, M_A = 5.88]. Even after controlling for choice difficulty, we see that people examine more nonalignable than alignable options when allowed to search freely.

There was neither a significant effect of feature pre-exposure [F(1,264) = 1.55, p > .20] nor a significant interaction of feature pre-exposure and alignability [F(1,264) = 2.28, p > .10; M_{NA} = 7.52, M_{NAF} = 9.13, M_A = 5.96, M_{AF} = 5.80]. As expected, feature pre-exposure had no effect for alignable options [F(1,264) = .04, p > .80]. Interestingly, though, among nonalignable options, there is a significant increase in search when people process the features before search [F(1,264) = 3.94, p < .05; M_{NA} = 7.52, M_{NAF} = 9.13]. See Figure 3. Thus, in contrast to Study 2, the effect of feature pre-exposure drawing people into searching for just the right combination of known and desired features appears to dominate the countervailing force of diminished feature learning value.

Satisfaction In order to examine the satisfaction results, we use a linear regression model with satisfaction as the dependent variable and alignability, feature pre-exposure, linear

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and quadratic variables for the number of options searched and the higher order interactions of all of these as the independent variables. Choice difficulty was also included as a covariate. Regression results for the complete model are presented in Table 7. There were no significant effects related to maximization, so it will not be reported further.

Insert table 7 about here

As expected, the choice difficulty covariate is significant with greater difficulty resulting in lower satisfaction [b = -.37, t(256) = -5.97, $p < .001$]. Hypothesis 2 predicts a quadratic effect of search on satisfaction for search among nonalignable but not alignable options. Hypothesis 4 predicts the inverted U will occur only when there is feature learning during search. Hence, we expect to detect a quadratic effect only when options are nonalignable and when there is no feature pre-exposure. Accordingly, we find a significant 3-way interaction of alignability, feature pre-exposure, and the quadratic variable for search [$b = -.77$, $t(256) = -2.57$, $p < .05$]. Separate regressions for each of the four conditions show that the quadratic effect of search on satisfaction is significant for nonalignable options in the control condition [$b = -.03$, $t(100) = -2.33$, $p < .05$] and not significant in nonalignable options with feature pre-exposure [$b = .06$, t(33) = 1.58, $p > .10$], alignable options in the control condition [$b = .03$, $t(89) = 1.49$, $p > .10$], or alignable options with feature pre-exposure [$b = -.04$, $t(31) = -.69$, $p > .40$]. Table 8 presents the results of these regressions. This demonstrates that satisfaction initially increases and then declines as search progresses only when options are nonalignable and when feature learning occurs during search rather than before search.

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Insert table 8 about here

As in studies 1 and 2, we examine whether mere elaboration can account for the inverted U in satisfaction. As expected, we find no support for a quadratic effect of search time on satisfaction for nonalignable options [$t(101) = -.35$, $p > .70$], highlighting once again the role of feature learning in search among nonalignable options.

Examination also reveals that the inverted U of satisfaction for nonalignable options occurs only for satisfaction with the product choice and not for process satisfaction. Process satisfaction was analyzed using a linear regression model with alignability, feature pre-exposure, linear and quadratic variables for search, and their higher order interactions as the independent variables. Choice difficulty was included as a covariate. We observe a marginally significant effect of difficulty on process satisfaction [$b = .06$, $t(256) = -1.75$, $p < .10$]. However, no other effects were significant (*p*'s >.10), indicating that the inverted U of satisfaction result for search among nonalignable options appears to be outcome-specific rather than process-related.

Hypothesis 3 posits that people do not stop searching before declining satisfaction sets in. Estimating the regression coefficients of the inverted U for nonalignable options in the control condition ($Y = 15.01 + .44^* \text{ NumOps} -.03^* \text{ NumOps}^2$) and solving for the maximum, we discover that satisfaction declines when search is greater than 8.41 options in this study. In support of Hypothesis 3, we find that 42.3% searched 9 or more options, going beyond the point where satisfaction begins to decline.

Discussion

Study 3 replicates findings from study 2 of greater actual search among nonalignable vs. alignable options even after controlling for choice difficulty. Furthermore, results corroborate findings from studies 1 and 2 of an inverted U of product satisfaction for search among nonalignable options using another method of feature pre-exposure that manipulates alignability within a single feature. This inverted U for nonalignable options is only found with choice satisfaction and not for satisfaction with the process. Furthermore, when features are processed ahead of time, the inverted U disappears. Thus, the feature learning that occurs during search among nonalignable options seems to drive the inverted U shape of choice satisfaction. Finally, this study demonstrates that when options are nonalignable and feature learning occurs during search, many people continue searching in spite of diminishing satisfaction, falling down the slippery slope of search.

GENERAL DISCUSSION

The results of three studies demonstrate that for search among nonalignable options, there is a slippery slope of satisfaction down which many people slide. In Study 1, search levels are manipulated to show that satisfaction initially increases and then declines for search among nonalignable but not alignable options. In spite of such an effect, people express a greater desire to continue searching among nonalignable vs. alignable options, even after the point where satisfaction is shown to decline. In studies 2 and 3, people are allowed to generate their own choice sets through free search. These studies clearly demonstrate greater search for nonalignable vs. alignable options and replicate the initial increase and subsequent decline of satisfaction for search among nonalignable options. Furthermore, the inverted U of satisfaction is only found when feature learning occurs during search, and it persists even when controlling for choice difficulty. Importantly, both of these studies also demonstrate that people can and often

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do continue searching to their own detriment as a result of the feature learning inherent in search among nonalignable options.

Theoretical Implications

These findings contribute to the literature on alignability, assortment, and search. First, prior research has shown a general disutility for nonalignable differences in choice (Chernev 2005; Gourville and Soman 2005; Lindemann and Markman 1996), yet we find that people are compelled to search further among nonalignable than alignable options. We argue that the increased search for nonalignable options is due to their greater hedonic and informational value combined with the use of continued search as a means to postpone making difficult tradeoffs.

Second, our research helps resolve the competing assortment findings that examining more options increases satisfaction due to finding a better match to preferences (Baumol and Ide 1956) versus diminishes satisfaction due to increased choice complexity (Iyengar and Lepper 2000, Huffman and Kahn 1998). Whereas assortment research typically examines behavior in small vs. large choice sets without considering how many options a person examines from these sets, we examine exactly how many options are searched and link satisfaction directly to this search amount. Our approach allows us to see that satisfaction initially increases and then decreases for nonalignable options.

Finally, these findings contribute to the theory of search behavior, highlighting the role feature learning plays in search and satisfaction when options are nonalignable. Prior work in the search literature mainly examined search for the best price. As such, this type of search could be construed as search among alignable options. In sharp contrast with prior research demonstrating that people generally search very little (Johnson et al. 2004; Moorthy, Ratchford, and Talukdar

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1997), we find that feature learning among nonalignable options leads people to search beyond the point that maximizes their personal well-being. During search, people seem to be unable to predict the decline in product satisfaction they will experience as they learn about new features but cannot have them all in a single option.

Managerial Implications`

An important goal of manufactures, retailers, and consumers is to maximize product satisfaction. Our results offer some indication that peak product satisfaction may be higher with nonalignable than alignable options. Empirically in our three studies of computers and mp3 players, satisfaction was highest between eight and nine nonalignable options. The satisfaction for nonalignable conditions at this peak was directionally higher than for alignable conditions, although it was only significantly higher in study 2 and not studies 1 and 3 [Study 1: $F(1,69) = 1.62$, $p > .20$, $M_{NA} = 16.70$, $M_A = 16.07$; Study 2: $F(1,63) = 12.34$, $p < .001$, $M_{NA} = 17.07$, $M_A = 14.69$; Study 3: $F(1,31) = 1.59$, $p > .20$, $M_{NA} = 18.00$, $M_A = 16.62$]. Ascertaining this optimal number of nonalignable options though is a challenge as it likely varies by product category, context, and consumer.

Importantly, our results warn that if consumers search beyond the peak for nonalignable options, they will fall down the slippery slope of search. If people are aware of the possibility of diminishing satisfaction, then they might be able to limit search accordingly. By adopting a satisficing rule rather than continuing to search for the very best choice, they might be able to avoid searching too much. Interestingly, we did not find the individual difference variable of maximization to impact search behavior. Future research is needed to better understand how

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maximization impacts search amounts and whether it differentially affects satisfaction with the choice outcome versus satisfaction with the choice process.

Companies could reduce the potential for declining satisfaction by minimizing nonalignable differences among the various options, focusing only on the key differentiators. Alternately, they could simply restrict the number of nonalignable options available to a moderate amount to mitigate possible feelings of disappointment over features not selected. Both retailers and manufacturers could also try to limit consumer search through time-based incentives or by providing assistance in the decision. In these ways, they could potentially help consumers reach a higher level of satisfaction and prevent them from falling down the slippery slope.

Another consideration for managers is that the same hedonic aspects of feature learning that draw consumers into the search process for nonalignable options might actually increase purchase likelihood. Future research should examine the impact of option alignability and search on purchase likelihood. There is a likely a delicate balance between offering enough choice to engage consumers in the search process and increase chances they will make a purchase but not overwhelm them and lead them to search too much.

Future Research

Our results showed equivocal effects of feature pre-exposure on search amount for nonalignable options with Study 2 finding it reduced search whereas Study 3 found it increased search. On the one hand, feature pre-exposure reduces the hedonic and learning value of features (i.e., feature learning), and hence one might expect reduced search. On the other hand, though, feature pre-exposure may also lead individuals to continue searching until they find their desired features available in a specific product option (i.e., option learning). The differential results may

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be due to the Study 2 feature pre-exposure manipulation also requiring preference articulation which has been shown to lead to more focused search (Chernev 2003). Another potential explanation is that the monitor options of Study 3 may be perceived as more integral or more important than the peripheral features of Study 2. This may increase the draw of searching for just the right combination of known and desired features. Future research should further explore the dual components of feature learning and option learning on stimulating greater search among nonalignable compared to alignable options.

Recent assortment research suggests that consumers may be more likely to desire larger assortments if the choice outcome rather than the choice process is made salient (Bulbul and Meyvis 2006). Our research suggests that people do not limit their free search even in the face of diminishing satisfaction with the choice outcome. An unresolved question from this research is whether people actually realize that choice satisfaction is diminishing with search. To begin to address this question, we conducted a study employing a 2 (alignability: nonalignable vs. alignable) by 2 (number of options: 3 vs. 9) by 2 (category: mp3 player vs. computer) factorial design, assessing perceptions of the benefit of search and feature learning for 251 participants. We examined whether people felt the benefit of searching more would be worth the effort and found a significant interaction of alignability and number of options [$F(1, 247) = 6.74$, $p < .01$]. For nonalignable options, the belief that searching more will be worth the effort decreased as the number of options increased [$F(1,247) = 7.11$, $p < .01$, $M_{3options} = 6.66$, $M_{9options} = 6.28$] whereas it did not change for alignable options [$F(1,247) = 1.05$, $p > .10$]. This suggests that people may fall down the slippery slope of search since they continue searching even when they feel the benefit of search is diminishing. Interestingly, the motivation to learn about features was not reported to be significantly higher for nonalignable than alignable options [$F(1,247) < 1$]. This

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suggests people may not be aware of the impact that feature learning has on drawing them into search and ultimately making them feel worse for nonalignable options. Future research should examine search motivations at various points in the search process to see what drives people to oversearch and whether they realize they are searching too much.

In conclusion, this research highlights the role feature alignability plays in search amount and the resulting satisfaction with the choice. Compared to alignable features, nonalignable features were shown to increase search. Although satisfaction initially increases, the choice becomes more painful and satisfaction ultimately declines when people learn about features during the process of searching among nonalignable options. In spite of diminishing satisfaction, people continue to search more options, falling down the slippery slope of search.

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FOOTNOTES

1. Each model description contained a list of that model's features. Although not specifically told, participants could assume that a feature present in one option was absent in another unless specifically listed.
2. We also note that neither the linear trend for alignable [b = .11, t(83) = 0.42, p > .60] nor nonalignable feature awareness [b = -.53, t(81) = -1.58, p > .10] is significant.
3. The control condition collapses two conditions of no feature pre-exposure and brief pre-exposure. In the no feature pre-exposure condition, subjects were not shown any features whereas in the brief pre-exposure condition, the monitor types were quickly flashed on the screen (4 seconds). During the study, we realized the monitor types were shown too quickly for participants in the brief pre-exposure condition to process them. There we no significant differences between the two conditions on search amount or satisfaction (all p values > .20).

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TABLE 1

SAMPLE OF OPTIONS FROM STUDY 1

Alignable Computers

Processor Speed	Hard Drive	Memory	Other
3.0 GHz	120 GB	1 GB	Wireless Networking Card & Router
2.66 GHz	200 GB	1 GB	Wireless Networking Card & Router
2.4 GHz	300 GB	1 GB	Wireless Networking Card & Router

Nonalignable Computers

Processor Speed	Hard Drive	Memory	Other
3.0 GHz	200 GB	1 GB	Surround Sound Speakers
2.66 GHz	200 GB	1 GB	Wireless Networking Card & Router
2.4 GHz	200 GB	1 GB	High Speed Internet - 1 year

Alignable MP3 Players

Song Storage	Battery Life	Size	Other
3000 Songs	13 Hours	Compact	Track Programming
1500 Songs	16 Hours	Compact	Track Programming
500 Songs	19 Hours	Compact	Track Programming

Nonalignable MP3 Players

Song Storage	Battery Life	Size	Other
3000 Songs	16 Hours	Compact	2 Inch Photo Display
1500 Songs	16 Hours	Compact	Track Programming
500 Songs	16 Hours	Compact	High Definition Headphones

TABLE 2

STUDY 1: NONALIGNABILITY LEADS TO GREATER SEARCH BUT EVENTUAL DROP IN SATISFACTION

	Search Inclination			Satisfaction		
Model	**B**	***t*-value**	**Sig.**	**b**	***t*-value**	**Sig.**
Intercept	10.542	65.046	<.001	15.836	110.213	<.001
Align	-0.470	-2.901	0.004	0.078	0.544	0.587
Search: Linear	-0.922	-4.642	<.001	0.201	1.139	0.256
Align X Search: Linear	-0.287	-1.444	0.150	0.017	0.098	0.922
Search: Quadratic	0.364	3.175	0.002	-0.274	-2.703	0.007
Align X Search: Quadratic	-0.078	-0.680	0.497	0.197	1.938	0.054

TABLE 3

STUDY1: SLIPPERY SLOPE OF SATISFACTION FOR NONALIGNABLE FEATURES UNDER MANIPULATED SEARCH

	Model	b	t-value	Sig.
Nonalignable	Intercept	15.758	74.338	<.001
	Search: Linear	0.183	0.701	0.485
	Search: Quadratic	-0.471	-3.167	0.002
Alignable	Intercept	15.914	81.694	<.001
	Search: Linear	0.218	0.919	0.360
	Search: Quadratic	-0.078	-0.561	0.576

TABLE 4

STUDY 2: SLIPPERY SLOPE OF SATISFACTION FOR NONALIGNABLE OPTIONS UNDER FREE SEARCH

Model	b	t-value	Sig.
(Constant)	18.430	29.329	<.001
Difficulty	-0.214	-3.777	<.001
Search	-0.174	-1.904	0.058
Condition	-1.010	-2.685	0.008
search X condition	0.135	2.001	0.047
search squared	-0.038	-2.274	0.024
search squared X condition	0.035	2.651	0.009

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TABLE 5

STUDY 2: FEATURE LEARNING DURING SEARCH OF NONALIGNABLE OPTIONS LEADS TO SLIPPERY SLOPE OF SATISFACTION

[redacted]

TABLE 6

SAMPLE OF OPTIONS FROM STUDY 3

Alignable Computers

Processor Speed	Hard Drive	Memory	Monitor
2.40 GHz	500 GB	2 GB SDRAM	13" Monitor
2.00 GHz	500 GB	2 GB SDRAM	15.0" Monitor
1.60 GHz	500 GB	2 GB SDRAM	17.0" Monitor

Nonalignable Computers

Processor Speed	Hard Drive	Memory	Monitor
2.40 GHz	500 GB	2 GB SDRAM	Gaming Monitor
2.00 GHz	500 GB	2 GB SDRAM	TV Tuner Monitor
1.60 GHz	500 GB	2 GB SDRAM	Color Bright Monitor

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TABLE 7

STUDY 3: SATISFACTION FOLLOWS INVERTED U FOR SEARCH AMONG NONALIGNABLE OPTIONS WITHOUT FEATURE PRE-EXPOSURE

[redacted]

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TABLE 8

STUDY 3: SLIPPERY SLOPE OF SATISFACTION OCCURS
WITH FEATURE LEARNING DURING SEARCH

[redacted]

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FIGURE 1

STUDY 1: NONALIGNABILITY INCREASES SEARCH BUT LEADS TO EVENTUAL DROP IN SATISFACTION

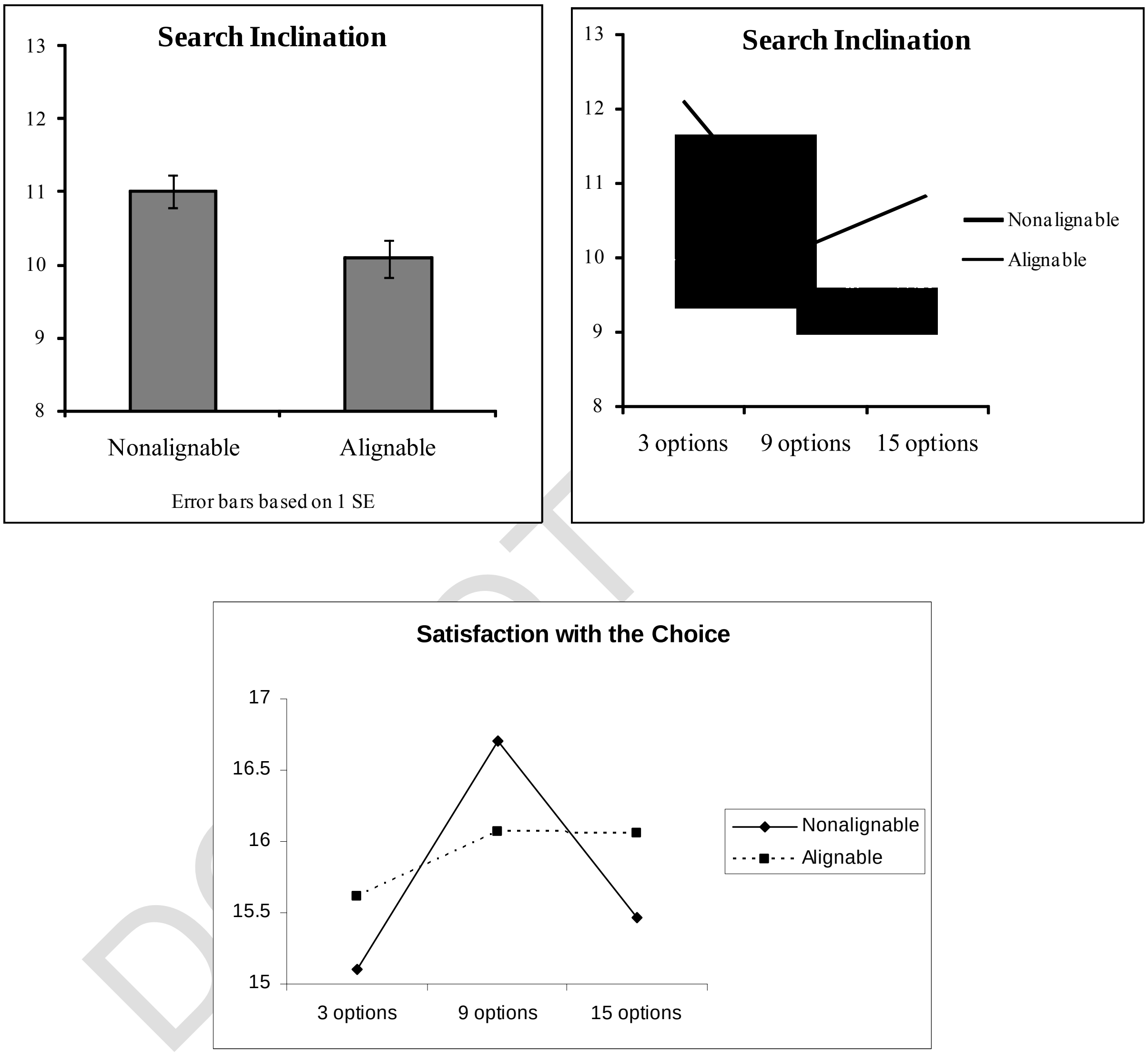

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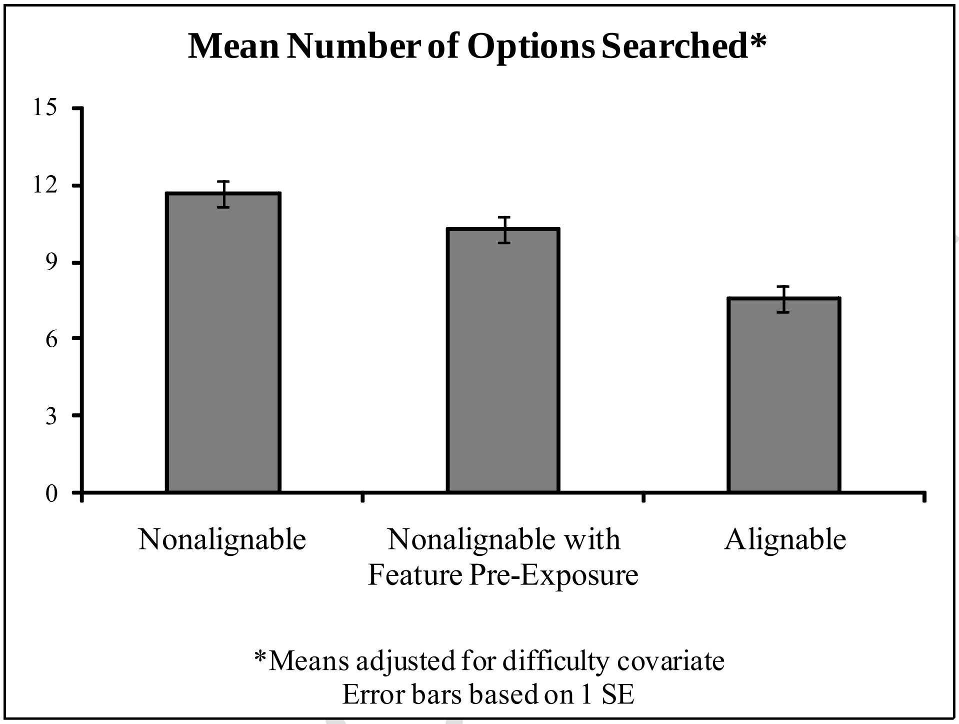
FIGURE 2

STUDY 2: FEATURE PRE-EXPOSURE MITIGATES INVERTED U OF SATISFACTION FOR NONALIGNABLE OPTIONS



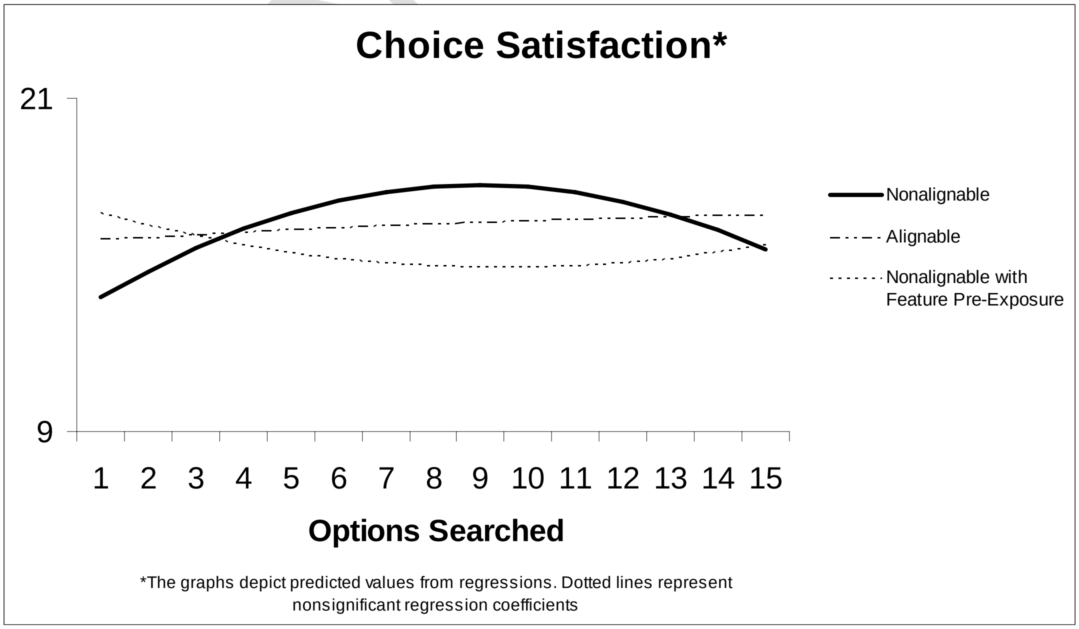


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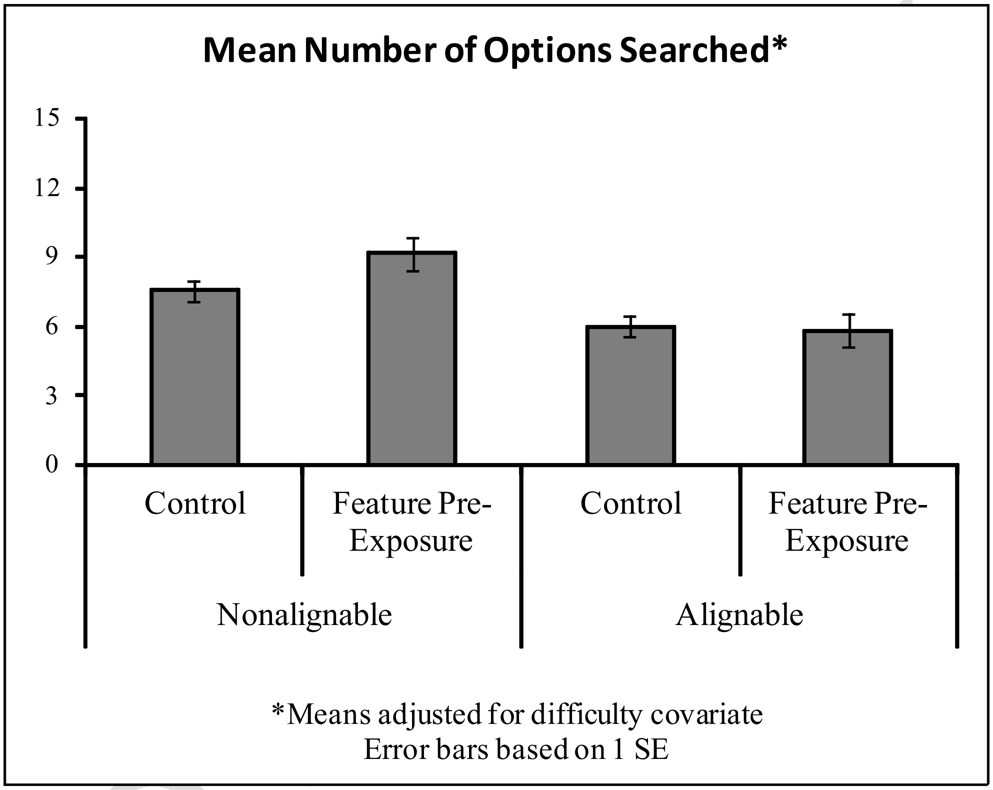
FIGURE 3

STUDY 3: NONALIGABLE OPTIONS ASSOCIATED WITH GREATER SEARCH



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The Slippery Slope:
The Impact of Feature Alignability on Search and Satisfaction

Jill G. Griffin and Susan M. Broniarczyk

WEB APPENDIX

Study 1 Computer Options

COMPUTER OPTION SETS		
	Alignable Options	**Nonalignable Options**
Processor Speed	Common tradeoff feature	Common tradeoff feature
Hard Drive	Alignable tradeoff feature	Held constant at mid-attractive level
Other Features	Held constant at mid-attractive level	Nonalignable tradeoff feature
RAM	Common constant feature	Common constant feature

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Alignable Computers

	Model Number	Processor Speed	HD Size	RAM	Other
1	H72R	3.6 GHz	40 GB	1 GB	Wireless Networking Card & Router
2	C26L	3.4 GHz	60 GB	1 GB	Wireless Networking Card & Router
3	T89N	3.2 GHz	80 GB	1 GB	Wireless Networking Card & Router
4	G16K	3.06 GHz	100 GB	1 GB	Wireless Networking Card & Router
5	B71T	3.0 GHz	120 GB	1 GB	Wireless Networking Card & Router
6	J57M	2.9 GHz	150 GB	1 GB	Wireless Networking Card & Router
7	K61G	2.8 GHz	180 GB	1 GB	Wireless Networking Card & Router
8	R36F	2.66 GHz	200 GB	1 GB	Wireless Networking Card & Router
9	M14Q	2.60 GHz	220 GB	1 GB	Wireless Networking Card & Router
10	N23P	2.53 GHz	250 GB	1 GB	Wireless Networking Card & Router
11	P65B	2.4 GHz	300 GB	1 GB	Wireless Networking Card & Router
12	L82C	2.3 GHz	320 GB	1 GB	Wireless Networking Card & Router
13	S45D	2.2 GHz	350 GB	1 GB	Wireless Networking Card & Router
14	D93Z	2.08 GHz	400 GB	1 GB	Wireless Networking Card & Router
15	V49S	2.0 GHz	500 GB	1 GB	Wireless Networking Card & Router

Nonalignable Computers

	Model Number	Processor Speed	HD Size	RAM	Other
1	H72R	3.6 GHz	200 GB	1 GB	Web Camera
2	C26L	3.4 GHz	200 GB	1 GB	1 Year Internet Security Subscription
3	T89N	3.2 GHz	200 GB	1 GB	Surge Protector
4	G16K	3.06 GHz	200 GB	1 GB	Wireless Keyboard
5	B71T	3.0 GHz	200 GB	1 GB	Surround Sound Speakers
6	J57M	2.9 GHz	200 GB	1 GB	Wireless Mouse
7	K61G	2.8 GHz	200 GB	1 GB	Express Tech Support
8	R36F	2.66 GHz	200 GB	1 GB	Wireless Networking Card & Router
9	M14Q	2.60 GHz	200 GB	1 GB	Scanner
10	N23P	2.53 GHz	200 GB	1 GB	Flat Panel with TV Tuner
11	P65B	2.4 GHz	200 GB	1 GB	High Speed Internet - 1 year
12	L82C	2.3 GHz	200 GB	1 GB	DVD Rom Drive
13	S45D	2.2 GHz	200 GB	1 GB	CD-RW Drive
14	D93Z	2.08 GHz	200 GB	1 GB	Color Laser Printer
15	V49S	2.0 GHz	200 GB	1 GB	3 Year Extended Warranty

Study 1 MP3 Player Options

MP3 PLAYER OPTION SETS		
	Alignable Options	**Nonalignable Options**
Song Storage	Common tradeoff feature	Common tradeoff feature
Battery Life	Alignable tradeoff feature	Held constant at mid-attractive level
Other Features	Held constant at mid-attractive level	Nonalignable tradeoff feature
Size	Common constant feature	Common constant feature

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Alignable MP3 Players

	Model Number	Song Storage	Battery Life	Size	Other
1	H72R	15,000 songs	4 hours	Compact	Track programming
2	C26L	14,000 songs	10 hours	Compact	Track programming
3	T89N	5000 songs	11 hours	Compact	Track programming
4	G16K	4000 songs	12 hours	Compact	Track programming
5	B71T	3000 songs	13 hours	Compact	Track programming
6	J57M	2500 songs	14 hours	Compact	Track programming
7	K61G	2000 songs	15 hours	Compact	Track programming
8	R36F	1500 songs	16 hours	Compact	Track programming
9	M14Q	1000 songs	17 hours	Compact	Track programming
10	N23P	800 songs	18 hours	Compact	Track programming
11	P65B	500 songs	19 hours	Compact	Track programming
12	L82C	250 songs	20 hours	Compact	Track programming
13	S45D	200 songs	21 hours	Compact	Track programming
14	D93Z	150 songs	22 hours	Compact	Track programming
15	V49S	100 songs	23 hours	Compact	Track programming

Nonalignable MP3 Players

	Model Number	Song Storage	Battery Life	Size	Other
1	H72R	15,000 songs	16 hours	Compact	Demonstration Video
2	C26L	14,000 songs	16 hours	Compact	Car cassette adapter
3	T89N	5000 songs	16 hours	Compact	3-band stereo equalizer
4	G16K	4000 songs	16 hours	Compact	Docking station
5	B71T	3000 songs	16 hours	Compact	2 inch photo display
6	J57M	2500 songs	16 hours	Compact	FM transmitter
7	K61G	2000 songs	16 hours	Compact	Wireless remote control
8	R36F	1500 songs	16 hours	Compact	Track programming
9	M14Q	1000 songs	16 hours	Compact	FM stereo tuner with 20 station presets
10	N23P	800 songs	16 hours	Compact	Hardshell protective case
11	P65B	500 songs	16 hours	Compact	High definition headphones
12	L82C	250 songs	16 hours	Compact	Wireless PC link
13	S45D	200 songs	16 hours	Compact	Car charger
14	D93Z	150 songs	16 hours	Compact	Advanced skip protection
15	V49S	100 songs	16 hours	Compact	3 Year Extended warranty

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Study 2 Options

Alignable Computers

Processor Speed	RAM	HD Size
3.60 GHz	1 GB	20 GB
3.40 GHz	1 GB	100 GB
2.80 GHz	1 GB	110 GB
2.70 GHz	1 GB	120 GB
2.66 GHz	1 GB	130 GB
2.60 GHz	1 GB	140 GB
2.53 GHz	1 GB	150 GB
2.40 GHz	1 GB	160 GB
2.33 GHz	1 GB	180 GB
2.20 GHz	1 GB	200 GB
2.08 GHz	1 GB	220 GB
2.00 GHz	1 GB	250 GB
1.80 GHz	1 GB	300 GB
1.60 GHz	1 GB	320 GB
1.50 GHz	1 GB	400 GB

Nonalignable Computers

Processor Speed	RAM	Other
3.60 GHz	1 GB	Web Camera
3.40 GHz	1 GB	1 Year Internet Security Subscription
2.80 GHz	1 GB	Surge Protector
2.70 GHz	1 GB	Wireless Keyboard
2.66 GHz	1 GB	Surround Sound Speakers
2.60 GHz	1 GB	Wireless Mouse
2.53 GHz	1 GB	Express Tech Support
2.40 GHz	1 GB	Wireless Networking Card & Router
2.33 GHz	1 GB	Scanner
2.20 GHz	1 GB	Flat Panel with TV Tuner
2.08 GHz	1 GB	High Speed Internet - 1 year
2.00 GHz	1 GB	DVD Rom Drive
1.80 GHz	1 GB	CD-RW Drive
1.60 GHz	1 GB	Color Laser Printer
1.50 GHz	1 GB	3 Year Extended Warranty

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Study 3 Options

Alignable Computers

Model Number	Processor Speed	Hard Drive	Memory	Monitor
H72R	2.40 GHz	500 GB	2 GB SDRAM	13.0" Monitor
C26L	2.30 GHz	500 GB	2 GB SDRAM	13.5" Monitor
T89N	2.20 GHz	500 GB	2 GB SDRAM	14.0" Monitor
G16K	2.10 GHz	500 GB	2 GB SDRAM	14.5" Monitor
B71T	2.00 GHz	500 GB	2 GB SDRAM	15.0" Monitor
J57M	1.90 GHz	500 GB	2 GB SDRAM	15.5" Monitor
K61G	1.80 GHz	500 GB	2 GB SDRAM	16.0" Monitor
R36F	1.70 GHz	500 GB	2 GB SDRAM	16.5" Monitor
M14Q	1.60 GHz	500 GB	2 GB SDRAM	17.0" Monitor
N23P	1.50 GHz	500 GB	2 GB SDRAM	17.5" Monitor
P65B	1.40 GHz	500 GB	2 GB SDRAM	18.0" Monitor
L82C	1.30 GHz	500 GB	2 GB SDRAM	18.5" Monitor
S45D	1.20 GHz	500 GB	2 GB SDRAM	19.0" Monitor
D93Z	1.10 GHz	500 GB	2 GB SDRAM	19.5" Monitor
V49S	1.00 GHz	500 GB	2 GB SDRAM	20.0" Monitor

Nonalignable Computers

Model Number	Processor Speed	Hard Drive	Memory	Monitor
H72R	2.40 GHz	500 GB	2 GB SDRAM	Gaming Monitor
C26L	2.30 GHz	500 GB	2 GB SDRAM	Photography Deluxe Monitor
T89N	2.20 GHz	500 GB	2 GB SDRAM	Full 90 Degree Tilt Monitor
G16K	2.10 GHz	500 GB	2 GB SDRAM	Web Optimized Monitor
B71T	2.00 GHz	500 GB	2 GB SDRAM	TV Tuner Monitor
J57M	1.90 GHz	500 GB	2 GB SDRAM	Multimedia Monitor
K61G	1.80 GHz	500 GB	2 GB SDRAM	Wireless Monitor
R36F	1.70 GHz	500 GB	2 GB SDRAM	Widescreen Monitor
M14Q	1.60 GHz	500 GB	2 GB SDRAM	Color Bright Monitor
N23P	1.50 GHz	500 GB	2 GB SDRAM	Surround Sound Monitor
P65B	1.40 GHz	500 GB	2 GB SDRAM	Monitor w/ Built-in Webcam
L82C	1.30 GHz	500 GB	2 GB SDRAM	Energy Saver Monitor
S45D	1.20 GHz	500 GB	2 GB SDRAM	Ultra High Resolution Monitor
D93Z	1.10 GHz	500 GB	2 GB SDRAM	Lightweight Monitor
V49S	1.00 GHz	500 GB	2 GB SDRAM	Ultra Thin Monitor