MAXIMIZERS

by

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ABSTRACT

In decision making situations, maximizers are known to prefer choosing between larger sets of product options compared to satisficers. However, even with more options, maximizers often make worse decisions. This counterintuitive phenomenon is known by researchers as the "Maximization Paradox." This article explores how and when maximizers show more status quo bias. Additionally, I find that maximizers and satisficers respond to upward and downward counterfactual thinking different and maximizers are more likely to use processing fluency as evaluative information compared to satisficers.

When facing large or complex decisions, people naturally handle large option sets in two different ways. First, the maximizers want to carefully and deliberately examine as many possible options as they can find (Schwartz et al. 2002). Satisficers, on the other hand, don't feel comfortable spending more energy on a choice than what is necessary. This second group will look at a few alternatives, choose one, and ignore the rest.

As you can imagine, the first group spends a lot more time and effort on making choices than the second (Chowdhury, Ratneshwar, and Mohanty 2009). They even go out of their way to find options that were not presented to them originally (Schwartz et al. 2002). However, all this extra effort does not necessarily pay off for maximizers. Maximizers are more likely to experience negative outcomes compared to satisficers (Polman 2010). They are more likely to feel regret (Schwartz et al. 2002) and have lower levels of choice satisfaction (Dar-Nimrod et al. 2009).

In study 1, I establish that, in high product depth conditions (information load), maximizers are more biased towards status quo choices. In study 2 I illustrate that maximizers and satisficers have a near opposite reaction to upward and downward counterfactual thinking when exhibiting status quo bias. I believe that these results demonstrate that counterfactual thinking can explain some of the variation between maximizers and satisficers when it comes to status quo bias in high product depth conditions. Finally, in study 3 I find that maximizers are more influenced by processing fluency effects compared to satisficers.

MAXIMIZATION

Gaining all information about all available options in a choice set is impossible. There is not enough time, and the amount of effort necessary to seek out all available input would be exhausting. Even when there are a few options to choose from, most people choose the options that they are more familiar with, precluding the likelihood of any new information to be gathered for another decision later (Schwartz 2000).

Some rational decision theorists (Payne 1982; Payne, Bettman, and Johnson 1993) have hypothesized that there is a threshold of "good enough" in information seeking; there is a balance between the benefits of seeking more information and the costs of time and effort. Once the threshold is crossed, the decision maker will decide he or she has enough information and stop looking. Schwartz et al. (2002), however, were not satisfied with this overarching one-size-fits-all model. They believed that, when given more options, different people would respond differently. Some people might be satisfied with a small assortment of information. Others, though, may need more data before they feel comfortable.

The authors identified a personality trait, maximization, that determines where that threshold lies (Schwartz et al. 2002). On one end of the spectrum, maximizers seek out as much information as possible when making judgments. They have a desire to examine every option and alternative. To be comfortable when making a decision, maximizers "maximize" the amount of data available to them. In addition to processing more available information, maximizers are more likely to seek out more information that was not available to them at the time. Satisficers, on the other hand, have a lower threshold when seeking information (Schwartz et al. 2002). They look for information that they judge adequate to make a decision and ignore any additional information. Schwartz and his colleagues developed a 13 item scale to measure where any individual falls on the maximization-satificing continuum.

MAXIMIZERS AND PRODUCT DEPTH

In their quest to find the "best" possible outcome, maximizers have been known to prefer larger choice sets compared to satisficers. Schwartz et al. (2002) found the tendency to maximize was positively correlated with seeking larger choice sets and spending more time considering choices. For example, maximizers are more likely to report seeking more expert and friendly advice when considering changing careers than satisficers (Iyengar, Wells, and Schwartz 2006); they are more likely to fixate on additional options, apply for more jobs, wish for more options, and even regret the lack of options. Even within time constraints, maximizers are more willing to browse/consider a larger choice assortment (Chowdhury et al. 2009). They engage in more prepurchase browsing behavior and feel more pressure to consider all choice sets, even in situations with limited time resources.

This added propensity to consider more alternatives has not always meant that maximizers make "better" choices. Many studies have focused on the fact that maximizers are more likely to make choices with negative outcomes compared to satisficers. In one study (Polman 2010), maximizers were more likely to seek out more alternatives and exert more effort than satisficers when making a decision. However, they were more likely to seek out lower quality alternatives, leading to greater losses. Maximizers scored lower than their satisficing counterparts in both the Adult-Decision-Making Competence and Decision Outcomes Inventory (Bruine de Bruin, Parker, and Fischhoff 2007), a pair of indices that score competence in decision making skills such as resistance to framing, recognizing social norms, and resistance to sunk costs. Maximizers scored particularly low in under and over confidence consistency in risk

perception (or estimating event probabilities. They also scored marginally worse in resistance to framing effects; irrelevant information has a greater effect on maximizers' value assessments.

The counterintuitive phenomenon that maximizers, who sacrifice time and cognitive resources to seek out larger choice sets, make poorer choices has been termed by researchers as the "Maximization Paradox" (Dar-Nimrod et al. 2009). Maximizers, who seek out more alternatives to make a decision, ultimately are less satisfied with those decisions. Some of the decrease in satisfaction might be explained by the "too-much-choice" effect (Scheibehenne, Greifender, and Todd 2009): having too many choices decreases motivation for making decisions and ultimately leads to poor decision making. Information load is often associated with decision avoidance (Huang 2000); when faced with too many choices, people often feel overwhelmed and choose to defer their decision, go with a default option, or not decide at all, walking away from the problem.

Maximizers naturally seek more alternatives (Polman 2010), while satisficers limit themselves to a few choice options. If you combine this with the too-much-choice effect (Sheibehenne et al. 2009), it's easy to see how maximizers might show more adverse effects of the too-much-choice effect or information load. They seek many more options than their counterparts, and then, feeling overwhelmed by the larger assortment size or more alternatives, defer the decision or give up. They might choose the default or just walk away; they suffer from "analysis paralysis," in the words of Mosteller (2007), maximizers "analyze many options carefully to the point where he/she becomes overwhelmed and avoids making a decision."

Product breadth (number of products), product depth (number of attributes per product), and product density (words per page in a product description) are three dimensions of product information load (Lurie 2002; Lee and Lee 2004). Early work into information load in marketing

found that information load is positively associated with positive outcomes (satisfaction, certainty, and less confusion) (Jacoby, Speller, and Berning 1974). However, after a certain point, higher levels of information load decrease decision accuracy (Eppler and Mengis 2004). Specifically when number of attributes exceeds 15 and number of alternatives exceeds 10, the probability of making a correct or best choice declines (Malhotra, Jain, and Lagakos 1982).

STATUS QUO BIAS

Status quo bias, along with omission bias, inaction inertia, and deferral bias, is one dimension of decision avoidance (Anderson 2003). The status quo bias refers to decision makers' propensity to choose whichever option is pre-selected within a choice set. For example, when given a choice of classes to choose, students in an early experiment of the phenomena were found to be more likely to choose courses that were indicated as the default or status quo option than they would have without any indication (Samuelson and Zeckhauser 1988). The same effects were observed in choosing health care plans and retirement accounts (Samuelson and Zeckhauser 1988). If an option is preselected, that option will be preferred more often than if no preselected option was provided.

Loss aversion (Tverksy and Kahneman 1991) forms the basis of status quo bias effects. In the minds of decision makers, losses are weighted more heavily than gains. If you consider the option of retaining the status quo as a reference point, choice makers will see movement away from that reference point as more costly (Samuelson and Zeckhauser 1988); switching away from the status quo reference point are more psychologically costly than benefits from potential gains. Status quo bias persists even when there is no explicit gain or loss framing (Samuelson and Zeckhauser 1988).

These losses can come from the distance to any reference point the decision maker adopts (Schweitzer 1994) and can include default or status quo points. Even if that reference point is randomly generated or selected by an outside actor, the status quo bias holds. Participants are reluctant to move away from their starting points in choose versus reject situations (Huber, Nealem, and Northcraft 1987; Levin et al. 2002; Park, Jun, and MacInnis 2000; Yaniv and Schul 1997). In two decision sets of the same number of attributes for a target product, the studies show fewer attributes selected in conditions with no preselected attributes (choose condition) and more attributes retained in conditions with all attributes preselected (reject condition). Participants were biased towards the number of attributes preselected.

This article (study 1) seeks to illustrate that maximizers are more prone to status quo bias than satisficers in high product depth conditions. As depth increases, maximizers will show more status quo bias compared to satisficers. I am looking to demonstrate that as maximizers consider more and more attributes they become overwhelmed by the additional information. Satisficers, on the other hand, should not show the same level of overload as they tend to ignore information that is deemed unimportant. High and low preselected attribute values will act as anchors at different levels within the attributes list. Reluctance to move away from these anchor points gives us a good indication of status quo bias.

Hypothesis 1: Maximizers will show a stronger status quo bias than satisficers in high product depth condition than in low product depth condition.

COUNTERFACTUAL THINKING

Counterfactual thinking is a mental state in which a real outcome is compared to a better or worse alternative. Comparisons between reality and a more desirable outcome ("If I had studied longer I might have passed my test") are called upward counterfactuals, whereas comparisons to a less desirable outcome ("I'm glad I studied longer or I might have failed") are called downward counterfactuals (see Roese and Olson 1997). One difference between upward and downward counterfactual thinking is that upward counterfactual thinking is associated with more spontaneous elaboration than downward counterfactual thinking (Dhar and Wertenbroch 2000). Participants conditioned with upward counterfactuals elaborate more frequently on future decision outcomes.

In an experimental study two groups of participants were asked how likely they were to join a frequent flyer program for an airline (Tykocinsi, Pittman, and Tuttle 1995). All participants were told that they had previously declined joining the program; however, some participants were told they had forgone more points than others. In the experiment, the group that "lost" the most points by not joining earlier were also less likely to sign up given the second opportunity as well. The authors further demonstrated that the group saw their initial inaction as a greater loss and that loss framing was an integral part of status quo bias.

Counterfactual thinking forms the basis of this example of status quo bias. In the airline example, the participants did not see their two decisions as independent of each other. Recalling the "losses" from not signing up earlier, the high discrepancy individuals constructed a more severe upward counterfactual ("If I had signed up earlier, I would have more points"). Because of this upward counterfactual thinking, the participants chose to forgo the second opportunity to sign up in order to avoid more regret (Tykocinsi et al. 1995). They choose the status quo instead by choosing to remain non-members or continuing to decline membership. By framing the initial

action as a greater loss, the participants were more reluctant to provoke additional regret and therefore showed more status quo bias than the other group. The participants are using the status quo option to avoid additional psychological loss.

While directional counterfactual thinking and its relationship to maximization has not been empirically investigated, Schwartz et al. (2002) did study the differences between maximizers and satisficers in terms of a different type of directional comparison thinking: social comparison thinking. Social comparison, like counterfactual thinking, is a behavior in which people compare their own situations with others. It too is directional: upward (comparison to those better off) and downward (comparisons with those worse off) (Schwartz et al. 2002). Schwartz et al. found that both upward and downward social comparison were associated with regret, though the effect was stronger for upward social comparisons. Furthermore, this relationship was even stronger among maximizers compared to satisficers satisficers. Using a median split, the authors discovered that for maximizers, only upward social comparisons were predictive of regret while downward was not. According to the authors, the findings indicated that social comparisons stimulated counterfactual thoughts which led to regret (Schwartz et al. 2002).

The second purpose of this article (study 2) is to establish that the effects of counterfactual thinking will trigger status quo bias in maximizers. In Schwartz et al. (2002), maximizers showed more regret under upward social comparison. For maximizers, upward counterfactual thinking will also lead to more regret. Just as in the Tykocinsi et al. (1995) airline rewards example, this heightened regret within maximizers will lead to greater status quo bias. The more regretful maximizers in upward counterfactual thinking conditions will attempt to mitigate their regret by choosing the status quo. As in study 1, high and low preselected attribute

values will act as anchors at different levels within attributes lists. Reluctance to move away from these anchor points gives us a good indication of status quo bias.

Hypothesis 2: Maximizers will show a stronger status quo bias in upward versus downward counterfactual thinking conditions while satisficers will show a stronger status quo bias in downward versus upward counterfactual conditions.

ASSIMILATION AND CONTRAST

When an individual is exposed to new information, contextual information either creates an assimilation or contrast effect during encoding (Martin & Achee 1992; Martin 1986; Martin, Seta, and Crelia 1990). If the new information shares similar features with other known objects, the new information will be grouped in a category (Herr 1989; Herr, Sherman, and Fazio 1983). This assimilation effect will influence later evaluation of the of both the new information and the category as a whole (Cohen and Basu 1987; Schwarz and Bless 1992; Schwarz, Münkel, and Hippler 1990). However, if the new information shares little with the category, the new information will not be grouped and a contrast effect may occur. In these cases, the new information will not affect the evaluation of the category.

For example, Herr (1989) exposed participants to either moderate or extreme contextual stimuli of cars. The moderate condition participants were shown stimuli of moderately expensive or inexpensively priced cars while the extreme condition group was shown either very expensive or very inexpensive cars. The participants were then asked to estimate the price of a fictitious car. The moderate group showed an assimilation effect: their estimations were higher if they were exposed to a moderately expensive car and lower if exposed to the moderately inexpensive car.

However, in the extreme condition, participants exposed to the extremely expensive car judged the new car to be cheaper than the group exposed to the extremely inexpensive car. The extreme group showed a contrast effect. The unfamiliar object did not share qualities with the familiar target; the participants did not attempt to group the two together when asked to judge the price of the fictitious car. In this case, the estimations were reversed; this is sometimes called "overcorrection."

Motivation plays a moderating role to assimilation and contrast effects. Martin et al. (1990) found that when participants were motivated, participants assimilated appropriate information and contrasted inappropriate information to a target. However, when participants were not motivated, the assimilation effects were observed more frequently for dissimilar information. Unmotivated people categorized inappropriate information with a target more often than motivated people. These results indicate that motivation moderates both perceived similarity between two objects, but also when assimilation or contrast will occur.

Under some conditions, availability of cognitive resources also moderates the role to assimilation and contrast effects. Meyers-Levy and Tybout (1997) found that when cognitive resources were sufficient, participants showed assimilation effects with appropriate information and contrast effects with inappropriate information. However, when resources were low, participants exposed to dissimilar information were more likely to show assimilation effects as well. They were not able to correct for contextual influence and so categorized the inappropriate new information with the target category. Furthermore, the inappropriate contextual information had an effect on later evaluation of the target.

PROCESSING FLUENCY

Processing fluency is the subjective ease or difficulty experienced when processing information about an object (Novemsky et al. 2007) and has been shown to elicit either positive or negative affect towards that same object (Schwartz 2004; Winkielman and Cacioppo 2001; Winkielman et al. 2003). For example, descriptions of products lead to more positive feelings about that product when the description is written in a readable font (Novemsky et al. 2007; Shen, Jiang, and Adaval 2010). Difficult to read fonts lead to more negative feelings and more negative evaluations of the product or attribute it is describing.

According to affect-as-information theory (Schwartz and Clore 1983), positive and negative feelings can lead to positive and negative evaluations. For example, participants attribute their current mood to reports of life satisfaction (Schwartz and Clore 1983); they reported more life satisfaction on good weather days than bad weather days. Evaluations of novel Chinese ideographs were influenced by positive or negative affective primes (Murphy and Zajonc 1993). The affect-as-information effect can also influence evaluations of subsequent experiences. Participants exposed to lice-killing shampoo were more likely to rate a subsequent product more negatively (Lee and Labroo 2004).

However, positive and negative subjective experiences sometimes have the opposite effect; contrast effects can occur. In some studies, the initial context provides a perspective or adopted level (Helson 1964) from which subsequent evaluations are contrasted against (Adaval and Monroe 2002). A common example of perceptual contrast is water feeling warmer after coming from a cold environment. People who form negative initial evaluations due to difficult to read information (Reber, Winkielman, and Schwartz 1998) sometimes contrast this evaluation with subsequent evaluations (Lingle and Ostrom 1979; Shen 2010). The negative evaluation serves as a standard of evaluation.

When dealing with two or more experiences that are thematically or temporally related, people manage these groups of thoughts as a single unit (Adaval et al. 2006; Wyer, Adaval, and Colcombe 2002; Radvansky et al. 1997). For example, if when reading a magazine the reader encounters an ad that is thematically similar to the article, then the reader will likely store the memories of both the article and the ad together. However, if the ad and article are not thematical similar, the memories will be stored separately.

Shen et al. (2010) found that thematic similarity played a role in determining when process fluency might lead to an assimilation or contrast effect. In situations where thematical similarity was high, the fluency of the first item drove the evaluation of the second in the appropriate direction; high fluency lead to more positive evaluations and low fluency lead to lower evaluations indicating assimilation. However, in thematically dissimilar situations, they saw more contrast; low evaluations following high fluency and high evaluations following low fluency.

The final goal of this article (study 3) is to demonstrate that maximizers and satisficers respond to processing fluency differently. I predict that maximizers will be more susceptible to affect-as-information (Schwartz and Clore 1983). Maximizers seek out and use more sources of information in decision making. They will be more likely to use processing fluency as a source of information that will ultimately influence their evaluations. Based on the work of Shen et al. (2010) I predict that two thematically similar items will create an assimilation effect while thematically dissimilar items will create a contrast effect in maximizers due the adaption level theory (Adaval and Monroe 2002). For similar items, low fluency will lead to lower evaluations and high fluency will lead to higher evaluations. But for dissimilar items, first stimuli will create an adoption level from which the maximizers will contrast their evaluation from; low fluency

will lead to higher evaluations and high fluency will lead to lower evaluations. Satisficers on the other hand, will be less susceptible to affect-as-information. They are less likely to be influenced by additional information; I predict that satisficers will show no assimilation or contrast effect or show information distortion.

Hypothesis 3: Compared to satisficers, maximizers will show stronger effects from processing fluency: two thematically similar objects will create an assimilation effect while two thematically dissimilar objects will create a contrast effect.

STUDY 1

The purpose of study 1 is to test Hypothesis 1. I wish to demonstrate that as alternative depth increases, maximizers will show status quo bias in a reluctance to move away from anchored starting points (low in the choose and high in the reject conditions). In a neutral condition, participants are reluctant to move away from their starting points (Huber et al. 1987; Levin et al. 2002; Park et al. 2000; Yaniv and Schul 1997).

Methodology

Participants. 549 anonymous U.S. based participants were recruited using Amazon Mechanical Turk. The median age of the respondents was 29, approximately 77% had some college to a four year degree, and nearly 55% were female. They were randomly assigned to one of four conditions in a 2 (product depth high vs. low) X 2 (choose vs. reject) between subjects design.

Procedure. All participants took Schwartz's et al. (2002) 13 item maximization scale. Then, participants were asked to imagine that they were shopping online for a new computer for college and had selected a model. The participants were given a list of additional options that could be included with the computer purchase.

Product Depth. Participants were randomly assigned to either high or low product depth conditions manipulated by changing the number of alternatives that appeared. Since Lee and Lee (2004) had previously found that, at a minimum, changing product depth between 9 and 18 was sufficient to manipulate information load levels in quality choice experiments, I used product depths of 8 and 24 to manipulate information load between low and high. The options, as well as the order of the options, were randomized to prevent preference bias.

Choose Versus Reject. Participants were also randomly assigned into choose or reject conditions where the list of options were unchecked or fully checked by default. In the choose condition, none of the options were pre-selected but in the reject group all options were pre-selected.

Dependent Variable. The raw number of options selected served as our primary dependent variable.

Results

Using multiple regression, I was able to find that the three way interaction between maximization, product depth, and choose versus reject was partially significant ($p = .11$). Furthermore, I performed a general linear model at the one standard deviation above and below the mean of maximization which shows the interaction between maximizers and satisficers, information load, and choose versus reject was significant ($F = 4.75$, $p = .03$). By mean shifting the maximization data up and down one standard deviation we can have a better understanding of the interaction, specifically by focusing the analysis at the levels of maximization in question. Researchers call this "spotlight" analysis, as it gives greater focus on the regions of interest in the data compared to dichotomous splits (Fitzsimmons 2008). The resulting analysis of the top and bottom groups alone means the three following three way results are of a smaller sample size.

Hypothesis 1 was fully supported. As product attribute depth increased there was a stronger status quo bias in the maximizer group ($M = 10.80$) than the satisficer group $M = 6.25$) as measured by the difference between the choose and reject groups. Among maximizers, those in the high depth condition selected more attributes ($M = 18.40$) than satisficers ($M = 15.14$) in the reject group and selected less ($M = 7.06$) than satisficers ($M = 8.90$) in the choose group. In the low product depth groups, the difference between maximizers ($M = 1.96$) and satisficers ($M = 1.71$) was less pronounced when measuring the difference between choose and reject conditions.

Insert table 1 about here

Insert figure 1 about here

Insert figure 2 about here

Furthermore, while maximization alone was not a predictor of attributes selected ($F = 2.35$, $p = .13$), both choose versus reject conditions ($F = 110.30$, $p = .00$) as well as product depth ($F = 281.66$, $p = .00$) were. Additionally, there were significant interaction effects between choose versus reject and maximization ($F = 5.93$, $p = .02$) and choose versus reject and product depth ($F = 45.96$, $p = .00$) although the interaction between maximization and product depth was not significant ($F = .21$, $p = .65$).

Discussion

Study 1 supports the argument that product attribute depth has a stronger effect on status quo bias among maximizers compared to satisficers. As anticipated, when product attribute depth was high there was a stronger status quo bias in the maximizer group than the satisficer group. These results confirm part of the maximization paradox: more information among maximizers can lead to negative behaviors. In this case, product attribute depth leads to status quo bias. I theorize that at some point, maximizers become overwhelmed and, instead of making their own choice, choose the status quo option.

STUDY 2

The purpose of study 2 is to test Hypothesis 2. Maximizers have shown to be less influenced by downward comparison thinking compared to satisficers (Schwartz et al. 2002) but

more influenced by upward maximization. Under upward counterfactual conditions, I believe that maximizers will be more sensitive to the effects of status quo bias. However, in downward counterfactual conditions, it will be the satisficers who exhibit more status quo bias.

Methodology

Participants. 453 anonymous U.S. based participants were recruited using Amazon Mechanical Turk. The median age of the respondents was 38, approximately 89% had at least some college or more, and 59% were women. They were randomly assigned to one of four conditions in a 2 (upward vs. downward counterfactual thinking) X 2 (choose vs. reject) between subjects design.

Procedure. In this study, participants were also told they were shopping for a computer, much like study 1. However, in this scenario the participants were told the model they had wanted was not available. After answering the Schwartz (2002) 13 point maximization scale, each participant was randomly assigned to one of the two counterfactual conditions.

Counterfactual Thinking. The participants were primed with upward or downward counterfactual thinking by elaborating on a counterfactual thinking situation. Participants in the upward counterfactual condition were asked to imagine that they were buying a computer but their preferred model was not available and in the downward counterfactual condition participants asked to imagine that they were buying a computer but their preferred model was not available but would be replaced with a better alternative.

*Choose Versus Reject.*Next, participants were shown a list of options that they could select or reject from depending on their condition as they did in study 1.

Results

Using multiple regression, I found that the three way interaction between maximization, product depth, and choose versus reject was significant ($p = .05$). Furthermore, just as in study 1, I performed a general linear model at the one standard deviation above and below the mean of maximization which shows the interaction between maximizers and satisficers, information load, and choose versus reject was significant ($F = 3.71$, $p = .03$). As in study 1, the resulting analysis of the top and bottom groups alone means the three following three way results are of a smaller sample size.

Hypothesis 2 was fully supported. As measured by the difference between choose and reject groups, maximizers in the upward counterfactual condition ($M = 8.55$) showed more status quo bias than maximizers in the downward counterfactual condition ($M = 6.32$). Among the reject group, maximizers selected more attributes in the upward condition ($M = 15.71$) than the downward condition ($M = 13.00$). One unexpected outcome of the experiment was the high level of status quo bias as measured by the difference between chose and reject groups among satisficers in the downward counterfactual condition ($M = 11.67$). The same satisficers exposed to downward counterfactual thinking showed much less status quo bias ($M = 6.00$). In the downward counterfactual condition, the satisficers selected fewer ($M = 3.92$) in the choose condition and more in the reject condition ($M = 15.59$) compared to those primed with upward counterfactuals ($M_{reject} = 13.50$ and $M_{choose} = 7.50$).

Insert table 2 about here

Insert figure 3 about here

Insert figure 4 about here

Furthermore, while maximization ($F = 2.51$, $p = .62$) and counterfactual thinking ($F = 1.31$, $p = .23$) were not predictors of alternatives selected, choose versus reject ($F = 62.84$, $p = .00$) was. Interactions between counterfactual thinking and choose versus reject ($F = .70$, $p = .40$), counterfactual thinking and maximization ($F = .17$, $p = .68$), and choose versus reject and maximization ($F = .47$, $p = .50$) were all not significant.

Discussion

Maximizers in the upward counterfactual condition showed more status quo bias than in the downward counterfactual condition. Upward primed maximizers selected more attributes in the reject and fewer in the choose conditions compared to maximizers in the downward counterfacual condition. This patten indicates that was maximizers in the upward condition are exhibiting more regret than the downward maximizers. This regert is leading to more status quo bias. The satisficers on the other hand, do not show this pattern. In fact, they show an unexpected

reversal, downward coutnerfactual thinking primed satisficers exhibit more status quo bias than upward counterfactual satisficers. This result seems to suggest that something is causing more status quo bias in satisficers would are primed with downward status quo thinking.

STUDY 3

The purpose of study 3 is to test the differences between maximizers and satisficers when responding to processing fluency. Shen et al. (2010) found that thematic similarity played a role in when processing fluency creates an assimilation or contrast effect in later advertising evaluations. When thematic similarity was high, processing fluency led to an assimilation effect (high fluency in one prompt led to high evaluations of a similar advertisement) and when similarity was low, processing fluency led to a contrast effect (high fluency led to lower evaluations). I believe that maximizers will show stronger effects from processing fluency (both as an assimilation in high thematic similarity conditions and a contrast from low thematic similarity conditions). This is due to maximizers' greater frequency of using more sources of information in making evaluations.

Methodology

Participants. 600 anonymous U.S. based participants were recruited using Amazon Mechanical Turk. The median age of the respondents was 26, approximately 88% had at least some college education or a degree, and 50% were female. The participants were randomly assigned to one of four stimuli conditions similar to Shen's et al. (2010) fluency experiment. Study 3 was a 2

(processing fluency easy vs. difficult) X 2 (thematic similarity high vs. low) between subjects design with measured maximization.

Processing Fluency.   Participants were exposed to a movie review first, where the review was either easy or difficult to read. This stimuli was modeled on Shen et al. (2010) experimental manipulation of processing fluency.

Thematic Similarity.   After reading the movie review, the participants were shown an ad for popcorn. In the thematically similar condition the advertisement explicitly states the product show is a sponsor of the movie shown in the previous page. In the thematically dissimilar condition there is no mention of the movie or previous stimuli. The stimuli was modeled on Shen et al. (2010) experimental manipulation of thematic similarity.

Dependent Variable.   Our dependent variable was the participants' evaluation of the second advertisement. It was measured using as the index of a four item seven point Likert scale.

Results

I performed a general linear model at the one standard deviation above and below the mean of maximization which shows the interaction between maximizers and satisficers, processing fluency, and thematic similarity was partially significant ($F = 2.71$, $p = .10$). The hypothesis was partially supported. Maximizers were more likely to assimilate thematically similar information and contrast dissimilar information. For maximizers in the thematically

similar condition, mean evaluations were higher for high fluency ($M = 5.25$) than for low fluency ($M = 5.05$). In the dissimilar condition, evaluations were lower in the high processing fluency condition ($M = 5.32$) than the low fluency condition ($M = 5.32$). Among satisficers, the mean evaluations were similar in both thematically similar conditions ($M_{\text{high frequency}} = 4.71$ vs. $M_{\text{low frequency}} = 4.70$), however there was an unexpected result among the satisficers exposed to thematically dissimilar stimuli. Within those participants, the high processing fluency group recorded much higher evaluations ($M = 5.30$) than the low processing fluency group ($M = 4.40$).

Insert table 3 about here

Insert figure 5 about here

Insert figure 6 about here

Maximization alone was predictor of advertisement evaluations ($F = 5.00$, $p = .03$) though both fluency ($F = .96$, $p = .37$) and thematic similarity ($F = .83$, $p = .36$) were not. Additionally, the interaction effects between maximization and fluency ($F = .75$, $p = .39$), maximization and thematic similarity ($F = .10$, $p = .75$), and fluency and thematic similarity ($F = .71$, $p = .40$) were all not significant.

Discussion

I was able to confirm that maximizers show stronger processing fluency effects than satisficers. Largely based on the work of Shen et al. (2010), I found that among maximizers, thematically similar stimuli created a assimilation effect while dissimilar stimuli created a contrast. I did not find these same results with satisficers. As expected, with the thematically similar group, there was little to no effect from the processing fluency at all. However, I did find one unexpected outcome. Satisficers appear to show a strong assimilation in the dissimilar condition. This effect among satisficers is a strong candidate for future research.

GENERAL DISCUSSION

In Study 1, the author showed that in high product depth conditions, maximizers are more influenced by the status quo bias. In those cases, maxmizers are more reluctant to move away from the status quo or default options. However, in low product depth conditions I did not see evidence of strong status quo bias differences between maximizers and satisficers. These results indicate that maximizers are more sensitive to information load in such a way that leads to status quo bias. This should be a useful designation for researchers studying the varying behavioral outcomes of maximizers; depending on experimental information load, results may vary. One practical implication to this result would suggest that adding product attributes may, for some shoppers, ilicit a status quo bias. Mangers might want to consider this before adding too many attribute to their own products.

Study 2 was designed to investigate directional counterfactual thinking. Building off of Schwartz's et al. (2002) work on maximizers and social comparison, I was able to illustrate that

maximizers and satisficers respond differently to upward and downward counterfactual thinking. Under upward counterfactual thinking, maximizers showed more status quo bias (another dimension of decision avoidance) than satisficers. There are plenty of research implciations to these results for maximization, status quo bias, and counterfactuals. Researchers dealing with counterfactual thinking may benefit from the knowledge that maximizers show a stronger status quo bias when exposed to upward counterfactuals. This extends Schwartz et al. (2002) by demonstrating that like upward social comparison, maximizers are more sensitve to upward counterfactuals.

The main purpose of this study 3 was to test whether processing fluency effects different between maximizers and satisficers. According to affect-as-information theory (Schwartz and Clore 1983), positive and negative feelings can lead to positive and negative evaluations. However, positive and negative subjective experiences sometimes have the opposite effect. In some studies, the initial context provides a perspective or adopted level (Helson 1964) from which subsequent evaluations are contrasted against (Adaval and Monroe 2002). Thematic similarity has been identified as a key driver in determining whether positive or negative affect might lead to likewise evaluations (Shen et al. 2010). I found that maximizers were more likely to assimilate thematically similar information and contrast dissimilar information.

This article suggests that maximizers show a stronger status quo bias but only in high product attribute conditions. Status quo bias, a dimension of decision avoidance, can be added to the list of other behaviors included the Maximization Paradox (Dar-Nimrod et al. 2009). More importantly, my work illustrates that product attribute depth plays a moderating role in the relationship between maximizers and status quo bias. Future research will confirm if product

attribute depth or other forms information load might contribute to other decisional outcomes attributed to maximization such as regret or risk perception.

One limitation to my work is that while counterfactual thinking was tied to status quo bias, I did not directly measure regret as the factor the led to the bias. Upward counterfactual thinking has been shown to contribute to status quo bias by way of regret (Tykocinsi et al. 1995). Another limitation is that while we see strong results in study 3, we did not find a significant three way interaction at the .05 confidence ($p = .10$). My hope is that in future studies I will find stronger results.

Two unexpected results among my studies warrant further investigation. The first was the unusual amount of status quo bias among satisficers exposed downward counterfactual thinking in study 2. Is there a reason this group is exhibiting stronger status quo bias? Are satisficers more prone to regret in a downward counterfactual? Future study should work towards explaining this strange phenomenon among satisficers. The second unexpected result was found in study 3. Satisficers exposed to the dissimilar ad exhibited strong assimilation, a reversal of outcome Shen et al. (2010) would have predicted. This unusual result warrants more investigation.

APPENDIX

SCHWARTZ ET EL. (2002) 13 ITEM MAXIMIZATION SCALE ITEMS

1. I treat relationships like clothing: I expect to try a lot on before I get the perfect fit.
2. I often find it difficult to shop for a gift for a friend.
3. Renting videos is really difficult. I'm always struggling to pick the best one.
4. I never settle for second best.
5. I find that writing is very difficult, even if it's just writing a letter to a friend, because it's so hard to word things just right. I often do several drafts of even simple things.
6. Whenever I'm faced with a choice, I try to imagine what all the other possibilities are, even ones that aren't present at the moment.
7. When I watch TV, I channel surf, often scanning through the available options even while attempting to watch one program.
8. When I am in the car listening to the radio, I often check other stations to see if something better is playing, even if I'm relatively satisfied with what I'm listening to.
9. No matter how satisfied I am with my job, it's only right for me to be on the lookout for better opportunities.
10. I often fantasize about living in ways that are quite different from my actual life.
11. I'm a big fan of lists that attempt to rank things (the best movies, the best singers, the best athletes, the best novels, etc.).
12. When shopping, I have a hard time finding clothing that I really love.
13. No matter what I do, I have the highest standards for myself.

STUDY 1 EXPERIMENT PRODUCT ALTERNATIVES LIST

- Processor upgrade, 3.2Ghz Intel Core i5
- All-in-One 22 Inch Monitor
- Windows Professional Support Package
- Microsoft Office 365 One Year Subscription
- 8GB Ram
- Logitech 3-Piece Speakers
- 500 GB Solid State HD
- NVIDIA GeForce GTX 960
- DVD Burner
- Blu-ray
- 3 Months Hulu Subscription
- 3 Months Netflix Subscription
- $50 Steam Gift Card
- Steam Game Controller
- McAfee LiveSafe 12 Month Subscription
- 2 Year Extended Warranty
- 12 Month Dell Professional Support
- Wireless Dell Premium Keyboard
- Wireless Dell Premium Mouse
- Adobe Photoshop Premier
- Adobe After Effects Pro
- 3 Year Accidental Damage Protection
- 802.11bgn + Bluetooth 4.0, 2.4 GHz, 1x1 Wireless Card
- 4 Month Spotify Premium

List was randomized for all participants. Participants in the low depth condition were shown eight of the randomized items. Participants in the high depth condition were shows a random order of all 24 items.

STUDY 2 EXPERIMENT STIMULI, UPWARD COUNTERFACTUAL

<u>WHAT IF</u>

"If only I were more prepared, I might **<u>not have failed</u>** the exam."

"I bet if I had asked, the salesperson might have given me a **<u>better</u>** deal."

People often have thoughts like **<u>"if only"</u>** or **<u>"what if"</u>** when thinking about past performances. Sometimes these thoughts can be about things that are **<u>turn out worse than what was expected</u>**.

In the spaces below, please tell us about a recent experience where things turned out **<u>worse</u>** than you had expected. Why were they **<u>worse</u>**? Could you have changed the outcome?

<u>COMPUTER PURCHASE</u>

Imagine that you are a Freshman preparing for college. You want to bring a **<u>new computer</u>** with you to set up in your dorm room. You find a model that is within your price range.

You add the model to your online cart only to be faced with the following message: **<u>"Sold Out."</u>**

In its place, the site offers you on suitable terms a **<u>lesser model</u>**, one with a **<u>slower</u>** processor and **<u>older</u>** design.

You are a little disappointed, but select it anyway (you need it soon).

STUDY 2 EXPERIMENT STIMULI, DOWNWARD COUNTERFACTUAL

<u>WHAT IF</u>

"I'm glad that I sudied more, I **<u>passed</u>** the exam because of that extra effort."

"I'm glad that I asked, the salesperson gave me a **<u>better</u>** deal."

People often have thoughts like **<u>"if only"</u>** or **<u>"what if"</u>** when thinking about past performances. Sometimes these thoughts can be about things that are **<u>turn out better than what was expected</u>**.

In the spaces below, please tell us about a recent experience where things turned out **<u>better</u>** than you had expected. Why were they **<u>better</u>**? Could you have changed the outcome?

<u>COMPUTER PURCHASE</u>

Imagine that you are a Freshman preparing for college. You want to bring a **<u>new computer</u>** with you to set up in your dorm room. You find a model that is within your price range.

You add the model to your online cart only to be faced with the following message: **"Sold Out."**

In its place, the site offers you on suitable terms a **<u>higher model</u>**, one with a **<u>faster</u>** processor and **<u>newer</u>** design.

You are **excited and select it right away** (you need it soon).

STUDY 3 EXPERIMENT STIMULI, EASY TO READ PROMPT

Imagine that you are reading your favorite local newspaper. Being a **huge movie fan**, one article catches your interest. A local cinema will be screening past Academy Award winning films all this month. As part of the promotion, they have published the paper's review for the best picture winning "Argo" just as it appeared in 2012.

Please read the review carefully as you will have to answer questions about it **later in the survey**. Read the review in full and move to the next page.

Fusing suspense and humor in a political thriller is a tricky prospect, but Argo is more than up to the task. Whether six Americans are rescued alive from Iran in 1980 is the engine behind the drama in this political thriller. And even though most people know the outcome, this movie still will have you on the edge of your seat. Argo is the rare nail-biter that's also riotously funny as it focuses on a real-life incident that was not exactly ripped from the headlines. Affleck, whose talents as a filmmaker have come to overshadow his acting roles, shines in both categories here. He nails the part of Mendez, the savvy, shaggy-haired rescuer, captures the feel of the era and establishes a thoroughly credible sense of urgency. He doesn't show off with his direction or the performances, going for detail instead of bombast with eerie silences, traded glances, trembling gestures and beaded sweat. Equal parts great escape caper, Hollywood satire, and political commentary, Argo is easily one of the year's best films.

STUDY 3 EXPERIMENT STIMULI, DIFFICULT TO READ PROMPT

Imagine that you are reading your favorite local newspaper. Being a **huge movie fan**, one article catches your interest. A local cinema will be screening past Academy Award winning films all this month. As part of the promotion, they have published the paper's review for the best picture winning "Argo" just as it appeared in 2012.

Please read the review carefully as you will have to answer questions about it **later in the survey**. Read the review in full and move to the next page.

Fusing suspense and humor in a political thriller is a tricky prospect, but Argo is more than up to the task. Whether six Americans are rescued alive from Iran in 1980 is the engine behind the drama in this political thriller. And even though most people know the outcome, this movie still will have you on the edge of your seat. Argo is the rare nail-biter that's also riotously funny as it focuses on a real-life incident that was not exactly ripped from the headlines. Affleck, whose talents as a filmmaker have come to overshadow his acting roles, shines in both categories here. He nails the part of Mendez, the savvy, shaggy-haired rescuer, captures the feel of the era and establishes a thoroughly credible sense of urgency. He doesn't show off with his direction or the performances, going for detail instead of bombast with eerie silences, traded glances, trembling gestures and beaded sweat. Equal parts great escape caper, Hollywood satire, and political commentary; Argo is easily one of the year's best films.

STUDY 3 PRODUCT EVALUATION

- I like this popcorn.
- This popcorn is good.
- I have a favorable opinion of this popcorn.
- This popcorn is attractive.

Seven point Likert scale anchored by "Strongly disagree" and "Strongly agree."

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TABLES

TABLE 1: STUDY 1 RESULTS

Source	SS	df	MS	F	p
Corrected Model	5263.00[a]	7	751.86	72.79	.00
Intercept	24.60	1	24.60	2.38	.13
Simple Effects					
Choose versus Reject	1139.29	1	1139.29	110.30	.00
Maximization	24.27	1	24.27	2.35	.13
Product Depth	2909.19	1	2909.19	281.66	.00
Two-way Interaction Effects					
Choose x Maximization	61.24	1	61.24	5.93	.02
Choose x Depth	474.74	1	474.74	45.96	.00
Maximization x Depth	2.15	1	2.15	.21	.65
Three-way Interaction					
Choose x Maximization x Depth	49.07	1	49.07	4.75	.03
Error	1766.21	171	10.33		
Total	7042.02	179			
Corrected Total	7029.21	178			

TABLE 2: STUDY 2 RESULTS

Source	SS	df	MS	F	p
Corrected Model	2359.73[a]	7	337.10	10.05	.00
Intercept	13729.55	1	13729.55	409.56	.00
Simple Effects					
Counterfactual Thinking	43.79	1	43.79	1.31	.26
Choose versus Reject	2106.69	1	2106.69	62.84	.00
Maximization	8.40	1	8.40	.25	.62
Two-way Interaction Effects					
Counterfactual x Choose	23.61	1	23.61	.70	.40
Counterfactual x Maximization	5.80	1	5.80	.17	.68
Choose x Maximization	15.69	1	15.69	.47	.50
Three-way Interaction					
Counterfactual x Choose x Maximization	124.29	1	124.29	3.71	.03
Error	4223.87	126	33.52		
Total	21023.00	134			
Corrected Total	6583.59	133			

TABLE 3: STUDY 3 RESULTS

Source	SS	df	MS	F	p
Corrected Model	20.36[a]	7	2.91	1.40	.21
Intercept	4903.27	1	4903.27	2354.58	.00
Simple Effects					
Fluency	2.01	1	2.01	.96	.33
Similarity	1.73	1	1.73	.83	.36
Maximization	10.42	1	10.41	5.00	.03
Two-way Interaction Effects					
Fluency x Similarity	1.49	1	1.49	.71	.40
Fluency x Maximization	1.55	1	1.55	.75	.39
Similarity x Maximization	.21	1	.21	.10	.75
Three-way Interaction					
Fluency x Similarity x Maximization	5.63	1	5.63	2.71	.10
Error	462.30	222	2.08		
Total	6559.67	230			
Corrected Total	482.67	229			

FIGURES

FIGURE 1: STUDY 1 RESULTS

NUMBER SELECTED

■ CHOOSE
■ REJECT

- HIGH DEPTH (MAXIMIZERS (+1 SD)): CHOOSE 7.06, REJECT 18.40
- LOW DEPTH (MAXIMIZERS (+1 SD)): CHOOSE 3.52, REJECT 5.48
- HIGH DEPTH (SATISFICERS (-1 SD)): CHOOSE 8.90, REJECT 15.14
- LOW DEPTH (SATISFICERS (-1 SD)): CHOOSE 3.11, REJECT 4.82

MAXIMIZERS (+1 SD)   SATISFICERS (-1 SD)

FIGURE 2: STUDY 1 RESULTS

NUMBER SELECTED IN REJECT - NUMBER SELECTED IN CHOOSE
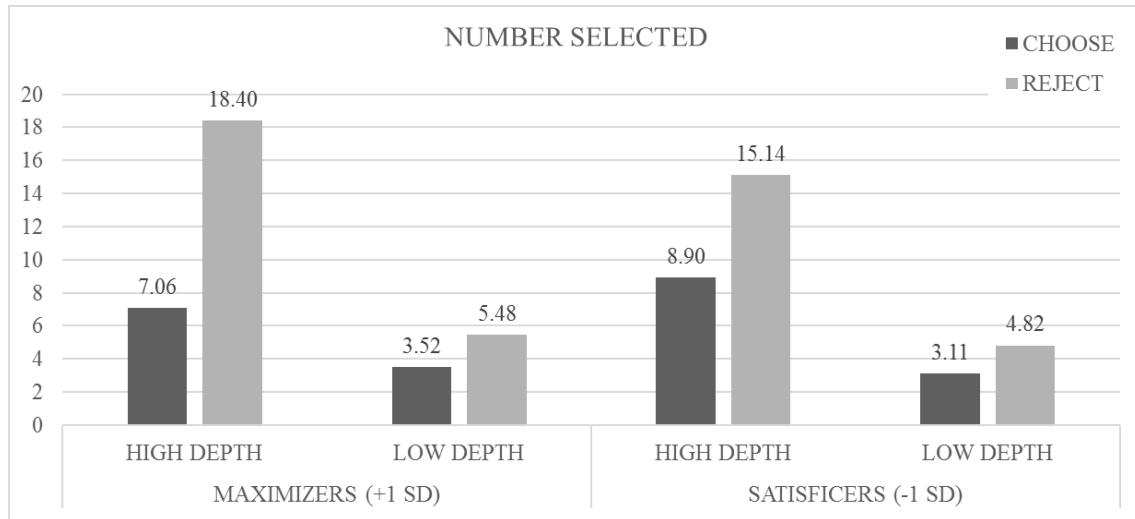
FIGURE 3: STUDY 2 RESULTS
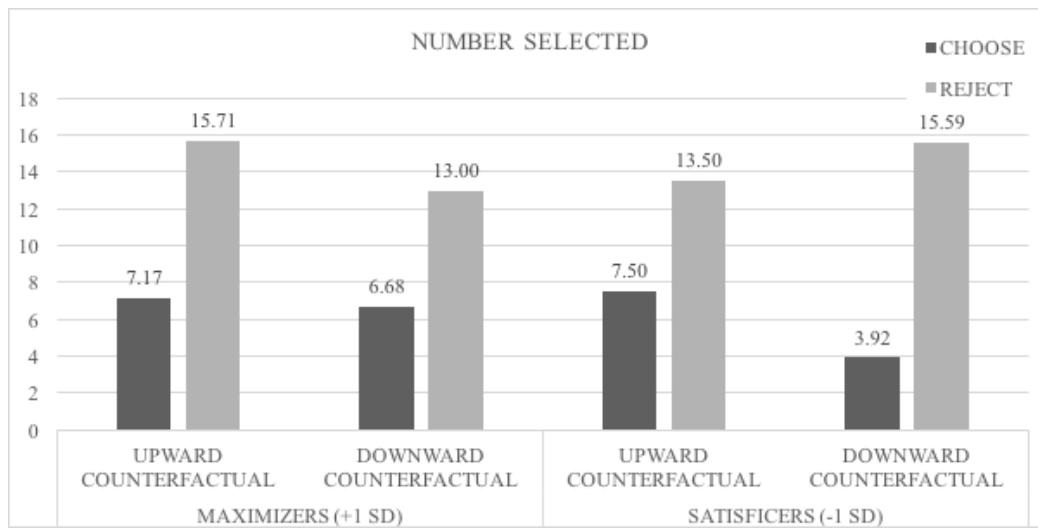
FIGURE 4: STUDY 2 RESULTS

NUMBER SELECTED IN REJECT - NUMBER SELECTED IN CHOOSE

■ UPWARD COUNTERFACTUAL ■ DOWNWARD COUNTERFACTUAL

FIGURE 5: STUDY 3 RESULTS

MEAN EVALUATION OF ADVERTISEMENT