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Single-Option Aversion

DANIEL MOCHON

This article documents single-option aversion, an increase in consumers' desire to search when faced with a single option. This effect can lead to a product being chosen more often when competing alternatives are included in the choice set, contrary to various rational models of search, as well as to recent research on choice conflict showing that additional options can lead to higher deferral rates. A series of lab studies document this effect, differentiate it from other context effects, and test some of its boundary conditions. The results suggest that single-option aversion is not driven by the information provided by the additional options, that the desire to search is critical for this effect to occur, and that the effects of single-option aversion are not limited to the immediate choice set. These results have both practical and theoretical implications for the understanding of consumer search and choice deferral.

Imagine that you are looking to buy a new DVD player and are faced with the decision of either purchasing a Sony model that you have been considering or searching for more options. How would the fact that you are only considering one option affect your propensity to search? This article documents an effect, labeled single-option aversion, which suggests that consumers are reluctant to pick an option—even one they like—when no other options are being considered. This increased desire to search when faced with single options can be strong enough that an option may be chosen more often when competing options are included in the choice set. This effect runs counter to rational models of choice, which assume that options cannot be chosen more often from larger choice sets. It is also inconsistent with prior work in consumer behavior suggesting that additional options, especially similar ones, can create choice conflict and lead to not choosing any of the options available (Dhar 1997; Iyengar and Lepper 2000; Tversky and Shafir 1992).

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Consumer Search and Choice Deferral

In many consumer decisions, the option to defer is an implicit or explicit alternative. A consumer who walks into Best Buy looking to buy a new DVD player can buy any of the options available, or she can continue searching. What factors might dissuade her from purchasing a DVD player from the set of options she currently faces, and how might the number of options presented affect this choice?

From a rational search perspective, consumers defer choice if they believe that the benefits of looking for more alternatives outweigh the costs. Like any other option in the consideration set, the option to search has a utility assigned to it (the expected utility of the best option one could find after controlling for the search costs). Whether consumers continue searching depends solely on how the utility of search compares to the utilities of the other options available (Ratchford 1982; Stigler 1961; Weitzman 1979). Since this perspective assumes that the utility of each option is known and context independent, it implies that an option—including the one to search—should not be chosen more often when more options are available.

Others have expanded the cost-benefit perspective by allowing for uncertainty of the options' utilities (Beatty and Smith 1987; Claxton, Fry, and Portis 1974; Greenleaf and Lehmann 1995; Moorthy, Ratchford, and Talukdar 1997; Srinivasan and Ratchford 1991; Zwick et al. 2003). Under this view, the decision to defer is subject to information and context effects that change the perceived value of the options. For example, consumers are more likely to defer a choice when the context highlights negative rather than positive attributes (Dhar and Nowlis 1999, 2004; Dhar, Nowlis, and Sherman 1999; Gunasti and Ross 2009). From this con-

structured preferences perspective, an option may be chosen more often from a larger choice set if the information provided by this larger choice set improves its perceived value. For instance, a music dictionary with 20,000 entries and a torn cover may be evaluated more positively when an alternative with 10,000 entries and a new cover is also available—since this later option provides a context to evaluate whether 20,000 entries is adequate (Bazerman, Loewenstein, and White 1992; Hsee 1996, 2000; Hsee and Leclerc 1998; Hsee et al. 1999; Nowlis and Simonson 1997). While such informational effects can affect deferral decisions (Hsee and Leclerc 1998), this article will argue that single-option aversion is not driven by purely informational effects. Even holding the information constant, consumers seem averse to choosing a lone option.

Choice deferral has also been studied as a means to avoid difficult trade-offs (Anderson 2003; Botti and Iyengar 2006; Schwartz 2004; Zhang and Mittal 2005). For example, consumers are likely to defer a choice that involves trading off emotionally laden attributes (such as car safety and price) because deferral allows them to avoid the negative feelings associated with such a decision (Luce 1998). From this perspective, larger choice sets can increase choice deferral by creating decision conflict (Dhar 1997; Iyengar and Lepper 2000; Tversky and Shafir 1992). In one such demonstration, participants who were told that a store had both a midrange Sony CD player and an expensive Aiwa CD player were more likely to defer the choice than those who were only told about the Sony option (Tversky and Shafir 1992).

While single-option aversion may seem to be contrary to the above results, there are important differences between the studies in this article and prior research. Previous research has often examined choice deferral in contexts where the cost of deferral was heightened. For example, Tversky and Shafir (1992) presented the options as part of a limited-time special offer involving large discounts, which can increase the cost of deferral to the point where it might overwhelm single-option aversion. The current research examines search behavior in situations where there is no pressure to make a purchase, as is commonly the case. These previous studies also used options designed specifically to induce choice conflict by including attributes that required difficult trade-offs (Bettman et al. 1993). The options used in the studies below do not share this feature. In fact, they were selected to be typical within their product category, often leading to very similar options with few attributes to trade off. Finally, while there are many different forms of choice avoidance (Anderson 2003), single-option aversion involves an increased desire to search for more options. Therefore, this effect should be sensitive to whether the deferral option involves further searching or not, which distinguishes it from some of the prior work in which deferral involved rejecting the options available or avoiding the decision altogether.

The Current Research

The present research demonstrates the existence of single-option aversion and examines some of its boundary con-

ditions and implications. While single-option aversion involves an increased desire to search when consumers are faced with only one option, it is not possible to cleanly test the existence of this effect by looking at the search rates across conditions. Adding a second option to the choice set can reduce searching both because it eliminates single-option aversion and because there is a second option that can also be chosen. For example, fewer consumers may choose to search when presented with both a Sony and Philips DVD player than when presented with only a Sony player because some of them may want to buy the Philips DVD player. Because of this, the studies presented in this article use a cleaner but much more conservative test of single-option aversion. They examine whether the choice share of a particular option increases when a second option is included in the choice set. That is, do more people choose the Sony DVD player when a Philips DVD player is also included in the choice set? This violation of regularity provides strong evidence for single-option aversion, since it shows that some people are unwilling to choose a lone option, even though they would be willing to buy that same item if an additional, but not chosen option were included in the choice set.

Experiments 1A and 1B demonstrate the existence of single-option aversion, for both real and hypothetical choices, and argue that this effect is different from previously studied context effects. Experiment 2 tests information-based accounts. It suggests that there is something unique about choices between single options and continued searching that does not appear to be driven by informational effects. Experiments 3 and 4 test some of the boundary conditions of single-option aversion. Experiment 3 suggests that this effect is driven by an increased desire to search, rather than by a general avoidance of the decision or of the options presented. Experiment 4 builds on this finding to show that the effect of single-option aversion can be moderated by shifting consumers' focus away from the search alternative. Finally, experiment 5 examines some of the practical implications of single-option aversion by showing that it can affect subsequent decisions. Having avoided a lone option, consumers continue to have an increased desire to search even after more alternatives are added to the choice set. Taken together, these findings have important practical implications for marketing strategy, as well as theoretical implications for the understanding of consumer search behavior.

EXPERIMENT 1A

Experiment 1A demonstrates single-option aversion. The existence of this effect is examined by testing whether participants are less likely to choose a specific option (e.g., a Sony DVD player) when it is the only option presented than when an attractive alternative (e.g., a Philips DVD player) is also included in the choice set.

Method

One hundred twenty-nine participants were recruited on Craigslist.org to complete a brief online survey. Respon-

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dents were presented with a choice scenario in which they were asked to imagine that they were looking to buy a new DVD player and that they were considering the option(s) presented. Participants were randomly assigned to one of three conditions, which manipulated the options in the consideration set. Participants were shown a Sony DVD player, a Philips DVD player, or both of these options. Each option was presented with a picture and a list of its features (see the appendix for an illustration of the conditions). Participants were then asked to indicate whether they would buy one of the presented options or defer their decision in order to look for more options. Both of the DVD players and their features were taken from Best Buy's website and thus represented typical options consumers might have encountered in the marketplace.

Results and Discussion

Participants were significantly less likely to pick each option when it was presented alone than with a competing alternative (see table 1). Only 9% of participants indicated that they would purchase the Sony DVD player when it was the sole option, whereas 32% indicated that they would purchase this option when the Philips DVD player could also be selected ($\chi^2(1) = 6.7, p = .01$). Similarly, fewer participants indicated they would buy the Philips DVD player when it was presented alone than when it was presented alongside the Sony model (10% vs. 34%; $\chi^2(1) = 7.5, p < .01$). These results provide initial evidence for single-option aversion. Participants' propensity to search when faced with a single option was so large that they were more likely to pick an option when an attractive competitor was included in the choice set.

Importantly, the choice share of both options increased when presented together. This suggests that single-option aversion is distinct from the attraction effect (Huber, Payne, and Puto 1982; Huber and Puto 1983), in which one option benefits from its dominance relationship over the added (and not chosen) decoy (Simonson 1989; Wedell 1991; Wedell and Pettibone 1996). Single-option aversion is also a distinct effect from the similarly named "lone-alternative effect" (Glazer, Kahn, and Moore 1991; Kahn, Moore, and Glazer 1987). The lone-alternative effect demonstrates that consumers prefer stores with larger choice sets. Consequently, if consumers are first forced to pick a store and then an option within a store, a store with few options (or even a single option) will be avoided, reducing the likelihood of choosing one of the options carried by this store. Single-

option aversion does not require this two-step choice process. It is an effect dependent entirely on the number of options available in a consumer's choice set.

EXPERIMENT 1B

Experiment 1B replicates single-option aversion in an incentive compatible setting, using a different set of products. This study also provides evidence that weighs against one potential account for the effect observed in experiment 1A—that the similarity of the DVD players suggests there is no point in searching, since all alternatives are effectively the same.

Method

Two hundred forty-one students from Tulane University were brought in to the lab to complete this study, as well as other unrelated studies, as part of an introductory course requirement. Seven participants were removed from the analyses because they completed this study more than once, and it was not possible to tell which was their first response.

Participants were told that at the end of the experiment they would receive a small candy bar as a token of appreciation for their participation in the lab session. They were then presented with a "Mini Snickers" chocolate (a typical option for American undergraduates), a "Serenata de Amor" bonbon (an atypical option for American undergraduates), or both of these options. The options were presented on the computer with a picture and brief description. Participants chose whether they wanted one of the options presented, or whether they would like to defer the choice to see what other options were available. Participants were told that if they chose to defer, they would pick their candy bar at the end of the session (after completing the other studies). It was made clear to them that new options would be available at the end of the session but also that the options presented to them initially may no longer be available. This was done to capture the costs associated with search. Participants who deferred were presented at the end of the session with three options (the two above plus a marzipan candy) and were asked to pick one. All participants received their chosen candy at the end of the lab session.

Results and Discussion

As shown in table 2, participants chose the Snickers more often when it was presented with the Serenata de Amor than when presented alone ($\chi^2(1) = 5.1, p < .05$) and also chose the Serenata de Amor more often when it was presented with the Snickers than alone ($\chi^2(1) = 3.9, p < .05$). These results show single-option aversion using an incentive compatible choice. These findings are also of theoretical interest. They replicate the effect using one option that is typical for the category and one that is atypical, suggesting that the effect is not driven by participants inferring that there is no value in further search based on the similarity of the options

TABLE 1

PERCENTAGE OF PARTICIPANTS CHOOSING EACH OPTION IN EXPERIMENT 1A

Condition	Sony	Philips	Defer
Sony ($n = 43$)	9%		91%
Philips ($n = 42$)		10%	90%
Both ($n = 44$)	32%	34%	34%

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TABLE 2
PERCENTAGE OF PARTICIPANTS CHOOSING EACH
OPTION IN EXPERIMENT 1B

Condition	Snickers	Serenata de Amor	Defer
Snickers (<i>n</i> = 79)	13%		87%
Serenata (<i>n</i> = 69)		10%	90%
Both (<i>n</i> = 86)	27%	22%	51%

(as might have been the case in experiment 1A in which both DVD players were nearly identical).

EXPERIMENT 2

The first two studies show the existence of single-option aversion. While it is proposed that these studies reflect an increased desire to search when consumers are faced with single options, the observed violation of regularity would be consistent with rational models of search if the increased likelihood of picking an alternative in the two-option condition were driven by the information provided by the additional option. The comparison between two options may allow participants to better evaluate their attributes (Hsee 1996; Hsee et al. 1999), provide information about what other options are available in the market (Moorthy et al. 1997), or facilitate reason-based choice (Shafir, Simonson, and Tversky 1993; Simonson 1989). Experiment 2 tests these information-based accounts for single-option aversion, by including a condition in which participants were first presented with two options but ultimately had to choose between a single option and further search. It is predicted that, even under these circumstances, participants will be reluctant to choose the single option, suggesting that something psychologically unique occurs for choices involving single options.

Method

One hundred fifty-nine participants were recruited using Amazon Mechanical Turk (Mturk) to complete a brief online study. Participants were asked to imagine that they were shopping for a new DSLR camera and were randomly assigned to one of four conditions. Three of the conditions replicated those of the previous studies. They were presented with a Canon camera, a Sony camera, or both of these options and were asked whether they would buy one of the options presented or search for other options. Both of the options and their features were taken from the Best Buy website.

In the fourth condition (single option plus comparison condition), participants were first presented with both the Sony and Canon options (also with their full set of features) and were asked: "which of the two options below would you prefer, if you were looking to buy a new DSLR camera?" (deferral was not an option in this initial choice).

Following this decision, they were shown only the camera they selected and were told: "Imagine that you are looking to buy a new DSLR camera. Below is an option that you are considering" (as in the single-option conditions) and were asked to choose whether they would purchase the camera they were considering or search for other options. Thus, participants in this condition had all of the information and options available to those in the both-options condition but had to ultimately make a choice between a single option and further search, as in the single-option conditions. If the effect observed in the prior studies is driven by the information provided by the second option, participants' choices in this condition should be similar to those in the both-options condition. However, if there is something psychologically unique about single options, participants' choices in this condition should be similar to those in the single-option conditions.

Results and Discussion

Replicating the prior two studies, participants were significantly less likely to select the Canon ($\chi^2(1) = 9.9, p < .01$) and Sony ($\chi^2(1) = 9.5, p < .01$) cameras when they were presented alone than when they were presented together (see table 3). More importantly, this effect persisted in the single-option plus comparison condition. Inconsistent with information-based accounts, participants were significantly less likely to select the Canon ($\chi^2(1) = 6.0, p = .01$) and Sony ($\chi^2(1) = 10.1, p < .01$) cameras in this condition than in the both-options condition, even though in both of these conditions they saw the two cameras, could compare them, and were allowed to pick the one they preferred. In this condition, there was no strong preference for one of the options in the forced choice (56% chose the Canon camera, while 44% chose the Sony option in the initial choice).

A follow-up study was run to further test information based accounts. This study followed the exact design of study 1A, except that the features of the DVD players were modified so that they had no features in common (neither price nor brand were included as features for either option). For example, while "DVD player A" had a "multibrand remote control," the corresponding feature of "DVD player B" was "4:3 and 16:9 aspect ratios." Therefore, little could be learned about the attributes of one option from the attributes of the other one when both were presented together.

TABLE 3
PERCENTAGE OF PARTICIPANTS CHOOSING EACH
OPTION IN EXPERIMENT 2

Condition	Canon	Sony	Defer
Canon (<i>n</i> = 39)	13%		87%
Sony (<i>n</i> = 39)		3%	97%
Both (<i>n</i> = 40)	45%	28%	28%
Single option + comparison (<i>n</i> = 41)	20%	2%	78%

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Nonetheless, single-option aversion was replicated in this informationally poor setting. Participants chose both “option A” (7% vs. 18%; $\chi^2(1) = 5.7, p < .05$) and “option B” (13% vs. 27%; $\chi^2(1) = 5.4, p < .05$) less often when they were presented alone than together.

The above results suggest that single-option aversion does not occur because the added alternative provides information about the options (Moorthy et al. 1997), makes the attributes easier to evaluate (Hsee et al. 1999), or facilitates reason-based choice (Shafir et al. 1993). Rather, these results suggest that there is something psychologically unique about being presented with a single option, which increases consumers’ propensity to search. Interestingly, these results imply that the meaning of a “single option” depends more on how the choice set is partitioned and presented and less on the actual number of options available. Isolating an option, even temporarily, seems sufficient to generate the effect.

EXPERIMENT 3

Experiment 3 tests whether the observed effect is driven by an increased desire to search, or whether it involves an overall rejection of single options. Since it is proposed that single-option aversion reflects an increased desire to search, it is predicted that this effect will not be present when the deferral option does not involve further search.

Method

One hundred thirty-two participants were recruited using Amazon Mturk to complete a brief online study. Participants were asked to imagine that they were shopping for a new dishwasher and were randomly assigned to one of four conditions based on a 2 number of options (one vs. two) \times 2 deferral option frame (search vs. nonsearch) between-subjects design. As in the prior studies, participants were presented with one option (a Whirlpool dishwasher) or two options (the Whirlpool and a GE dishwasher). Both options were presented with a picture and a list of features. Participants were asked to indicate whether they would purchase one of the presented options or defer the choice. The framing of the deferral option was manipulated between subjects. For participants in the search condition, the deferral option was: “I would look at other options before making a purchase” (similar to previous studies), while for participants in the nonsearch condition, the deferral option was: “I would not buy this (either of these) dishwasher(s).”

Results and Discussion

As shown in table 4, single-option aversion was moderated by the framing of the deferral option. When the deferral option involved search, participants chose the Whirlpool dishwasher more often when it was presented with a competing option than when it was presented alone ($\chi^2(1) = 7.6, p < .01$). However, there was no single-option aversion in the nonsearch conditions ($\chi^2(1) = .1, p = .8$). A logistic regression of the probability of picking the Whirlpool dish-

TABLE 4

PERCENTAGE OF PARTICIPANTS CHOOSING EACH OPTION IN EXPERIMENT 3

Condition	Whirlpool	GE	Defer
One-option search (<i>n</i> = 33)	24%		76%
Two-options search (<i>n</i> = 31)	58%	29%	13%
One-option nonsearch (<i>n</i> = 34)	68%		32%
Two-options nonsearch (<i>n</i> = 34)	65%	35%	0%

washer showed a main effect of search condition ($B = 1.1, SE = .37, p < .01$) and a marginally significant effect of number of options ($B = .67, SE = .37, p = .08$). These two main effects were qualified by the predicted interaction between them ($B = -1.6, SE = .75, p < .05$).

These results suggest that the underlying mechanism of single-option aversion stems from search-related behavior. It would be difficult for explanations based purely on undervaluing a lone option to account for the pattern observed in this study. From a practical perspective, this study also suggests that salespeople should be mindful of how they frame the deferral option to consumers. Asking consumers whether they would like to see more options after having shown them a highly attractive option may lead to higher deferral rates than simply asking them if they want the product or not.

EXPERIMENT 4

Experiment 3 provides evidence suggesting that single-option aversion is driven by an increased desire to search. Experiment 4 builds on this result and examines whether, holding the deferral option constant, the effect can be moderated by manipulating how much consumers focus on further search. To this end, some participants were asked to create an internal standard of comparison, which should reduce the attention devoted to the search option and, in turn, reduce single-option aversion.

Method

Two hundred forty-seven participants were recruited from an online panel run by the Yale School of Management to complete a brief online survey. Participants were asked to imagine that they were looking to buy a new LCD TV and were randomly assigned to one of four conditions based on a 2 number of options \times 2 focus of comparison between-subjects design. Half of the participants were presented with one option, a Samsung LCD TV, while the other half were presented with the Samsung TV and an LG LCD TV. The focus of comparison was manipulated orthogonally to the number of options presented. Half of the participants were presented the option(s) and asked whether they would buy one of them or defer the choice to look for more alternatives,

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as in all of the previous studies (control condition). The other half of the participants were presented the option(s) (with no price listed) and were asked to state the maximum they would be willing to pay (WTP) for each. After generating this judgment, the prices of the options were presented, and the participants were asked to decide whether they would buy one of them or defer the choice to look for more alternatives (internal focus condition). This manipulation was intended to shift the focus of the comparison toward internal standards, reducing the focus on the search alternative, which should attenuate single-option aversion. Participants in the control condition were asked for their WTP estimates after they made their choice.

Results

Table 5 displays the WTP estimates for the four conditions. Because the distribution of the estimates was heavily skewed, the statistical analyses were run on log dollars, and the table presents the corresponding geometric means. A 2 number of options (one vs. two) \times 2 focus of comparison (control vs. internal focus) ANOVA was run on the WTP estimates for the Samsung TV. Neither of the main effects nor the interaction approached significance ($p > .6$), suggesting that the actual valuation of the options was not affected by the experimental manipulations.

Nonetheless, as shown in table 6, the percentage of participants choosing the Samsung TV depended on both the number of options presented as well as the focus of comparison. Fewer participants chose the Samsung TV when it was presented alone in the control condition than in the other three conditions. A logistic regression on the probability of selecting the Samsung TV was run to confirm the observed pattern, with separate factors for the number of options, the focus of comparison and their interaction. This regression revealed a significant main effect for the focus of comparison ($B = .77$, $SE = .36$, $p < .05$) and a marginally significant main effect for the number of options ($B = .66$, $SE = .36$, $p = .07$), which were qualified by a significant interaction effect ($B = -1.81$, $SE = .73$, $p = .01$). While participants in the control condition chose the Samsung TV significantly less often when it was presented alone than when it was presented with another option ($\chi^2(1) = 7.9$, $p < .01$), the number of options presented had no effect on this choice when participants were forced to form an internal standard ($\chi^2(1) = .3$, $p > .5$).

TABLE 5

WILLINGNESS TO PAY IN THE FOUR CONDITIONS
OF EXPERIMENT 4

Condition	Samsung	LG
One-option control ($n = 63$)	\$335	
Two-options control ($n = 61$)	\$353	\$374
One-option internal focus ($n = 60$)	\$347	
Two-options internal focus ($n = 63$)	\$357	\$379

TABLE 6

PERCENTAGE OF PARTICIPANTS CHOOSING EACH
OPTION IN EXPERIMENT 4

Condition	Samsung	LG	Defer
One-option control ($n = 63$)	6%		94%
Two-options control ($n = 61$)	25%	33%	43%
One-option internal focus ($n = 60$)	27%		73%
Two-options internal focus ($n = 63$)	22%	30%	48%

Discussion

Experiment 4 shows another moderator of single-option aversion and further supports the notion that this effect is driven by a heightened desire to search when consumers are faced with a single alternative. Participants who formed an internal standard of comparison before making the choice were more likely to choose a lone option than those who were not guided to generate such a standard. It is therefore likely that this manipulation moderated the effect by reducing the focus on the search option, which experiment 3 established as a necessary component of single-option aversion.

An additional important finding of this study is that the WTP estimates for the Samsung TV seemed unaffected by whether this option was presented alone or with another option. Prior work has shown that under some circumstances the valuation of options can improve when they are presented together rather than alone. Specifically, if both options are perceived as highly unattractive, their valuations tend to be higher when presented jointly. This occurs because, when judged in isolation, the options are compared to a typical member of the category (which is much better than the unattractive options). However, when presented jointly, the unattractive options are compared to each other (Hsee and Leclerc 1998). This is an unlikely explanation for single-option aversion, since the options in the studies are typical for their category—a situation in which Hsee and Leclerc's (1998) theory would predict no change in valuation from separate to joint evaluation. The WTP estimates in this study further support this.

EXPERIMENT 5

Experiment 5 explores some of the practical implications of single-option aversion by examining whether this effect can affect subsequent choices. It is proposed that, because of momentum (Dhar, Huber, and Khan 2007) or the activation of a search mind-set (Xu and Wyer 2007), consumers who have chosen to search when faced with a single option may continue to do so even after additional options have been added to the choice set. Consequently, single-option aversion may have broad implications for search behavior that go beyond the initial choice set encountered.

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Method

One hundred thirty-one participants were recruited using Amazon Mturk to complete a short decision-making task. Participants in this study were told that we were going to donate some money to charity, and that each of them would decide to which charity we would donate \$1 of the overall amount. It was made clear to them that this was a real choice, and that the charity they chose would in fact receive the money. The three charities chosen for this study were the American Red Cross, the Wounded Warrior Project, and Susan G. Komen for the Cure. These organizations were chosen because they were among the top 10 most viewed charities at the time, according to charitynavigator.org.

Participants were randomly assigned to one of two conditions, which manipulated the number of options they initially saw. Participants in the single-option condition were presented with the option of donating \$1 to the American Red Cross or deferring to find out what other charities were available. If they chose to see more options, the Wounded Warrior Project was added to the choice set, and they were again asked to either select one of the charities or to defer in order to find out what other options were available. If they chose to defer the choice again, Susan G. Komen for the Cure was added to the choice set, and they were then forced to pick one of the three options (deferral was no longer an option). If at any point in the sequence of choices participants chose one of the charities, the experiment concluded, and they were not presented with any other options. Participants in the two-options condition were initially presented with both the American Red Cross and the Wounded Warrior Project, and if they chose to defer, then all three options were presented and they were forced to choose one.

Therefore, conditional on deferring the first choice, participants in the single-option condition were exposed to the same sequence of decisions as those in the two-options condition (see fig. 1 for an illustration of the design).

As in previous studies, it is predicted that participants will show single-option aversion. That is, they will be less likely to donate the money to the American Red Cross when it is the only option presented than when it is initially presented with a competing option. Moreover, it is predicted that single-option aversion will have a lasting effect on choice. Even after a second option is added to the choice set, participants in the single-option condition will continue to search.

Results and Discussion

Table 7, part A shows the percentage of participants choosing each option in the first choice set they were exposed to. These results provide another demonstration of single-option aversion in a new domain with consequential choices. Participants were less likely to donate to the American Red Cross when it was the only option presented than when it was presented with a competing charity ($\chi^2(1) = 4.4, p < .05$).

Adding a second option had little effect on the choices of participants in the single-option condition. Table 7, part B shows the cumulative percentage of participants choosing each charity after being exposed to two options (for participants in the single-option condition, this reflects the total number of participants choosing one of the charities either in the first or second choice). Participants in the single-option condition continued to prefer to search, even after having been exposed to the exact same choice set as those

TABLE 7
PERCENTAGE OF PARTICIPANTS CHOOSING EACH OPTION IN EXPERIMENT 5

	A. First choice		
	American Red Cross	Wounded Warrior	Defer
Condition:			
Single option ($n = 65$)	14%		86%
Two options ($n = 66$)	29%	30%	41%
	B. Cumulative choice after seeing two options		
	American Red Cross	Wounded Warrior	Defer
Condition:			
Single option ^a ($n = 64$)	14%	5%	81%
Two options ^b ($n = 66$)	29%	30%	41%
	C. Final choice		
	American Red Cross	Wounded Warrior	Susan G. Komen
Condition:			
Single option ($n = 65$)	49%	29%	22%
Two options ($n = 66$)	44%	42%	14%

^aOne participant in the single-option condition left the second choice blank.

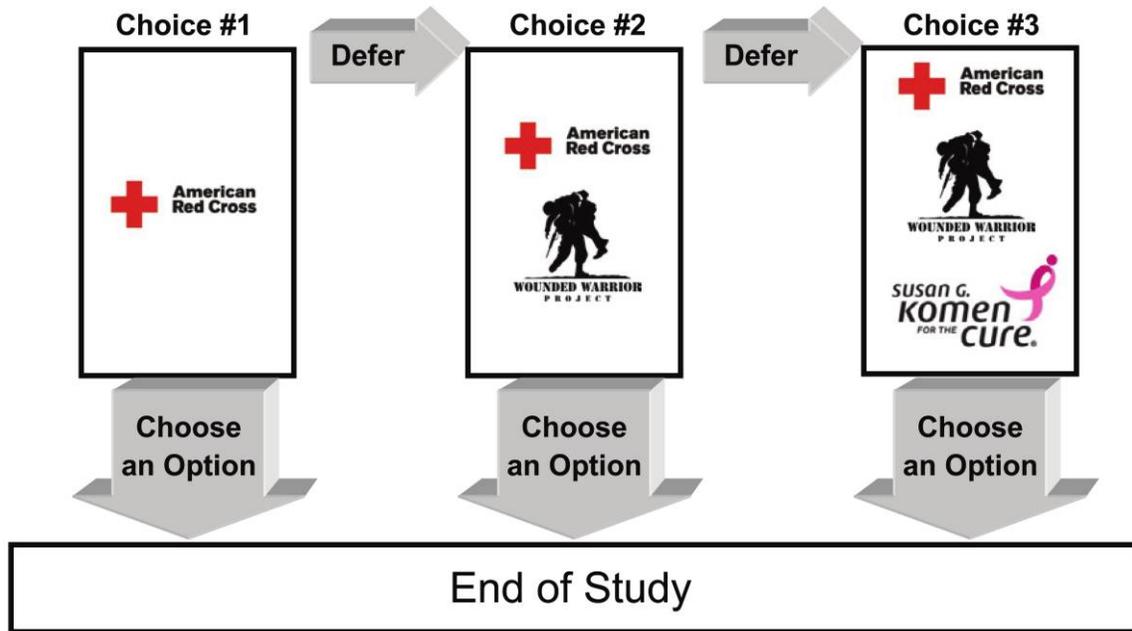
^bIn the two-options condition, the first choice and cumulative choice after seeing two options represent the same choice. The results are replicated in this table for expositional purposes.

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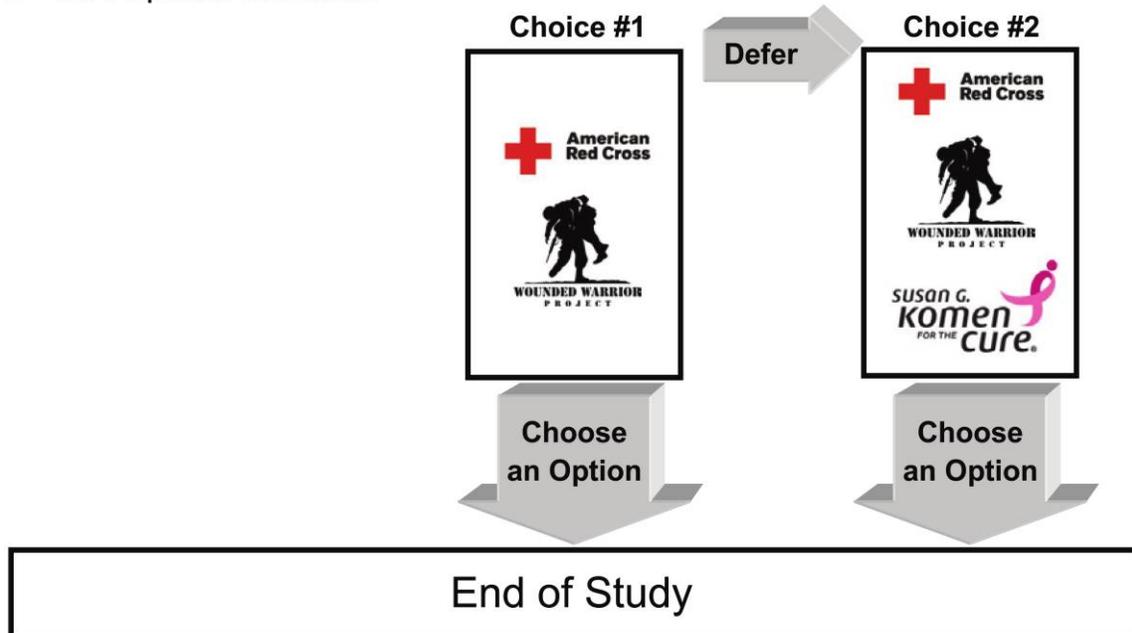
FIGURE 1

ILLUSTRATION OF THE PROCEDURE OF EXPERIMENT 5

A - Single-option condition



B - Two-options condition



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in the two-options condition. Indeed, participants in the single-option condition were significantly less likely to pick the American Red Cross ($\chi^2(1) = 4.2, p < .05$) and the Wounded Warrior Project ($\chi^2(1) = 14.6, p < .001$) than those in the two-options condition.

The final percentage of participants donating to each charity, which is based on a forced choice for some participants, does not differ significantly between the two conditions ($\chi^2(1) = 3.0, p = .23$; table 7, part C). This null effect depends both on the final set of options presented and on the fact that participants were not allowed to search further after being shown three options. Therefore, the theoretical implications of the final choice are unclear.

These results illustrate how single-option aversion can affect the deferral rate of a wide array of consumer choices. Because this effect is not limited to the immediate choice set involving a single option, it may affect consumer choice in any context where a single option is separated from the rest of the choice set, even temporarily. Thus, featuring items or presenting products sequentially rather than simultaneously may lead consumers to consider more options prior to making a purchase (relative to the number of options they would have considered had one of them not been initially isolated).

GENERAL DISCUSSION

The current article demonstrates single-option aversion, an increased desire to search when consumers are faced with a single option. As shown, this effect can lead to a violation of regularity, whereby an option is chosen more often when the choice set includes other alternatives. The results of experiment 2 suggest that this effect is not driven by the information of the additional options but rather that there is something unique about the decision between a single option and further search—which experiments 3 and 4 show to be a critical component of the effect. Finally, experiment 5 demonstrates that this increased need to search can affect subsequent decisions, broadening the set of circumstances where single-option aversion may affect consumer choice. Taken together, these findings have important practical, as well as theoretical implications for the understanding of consumer search and choice deferral.

Theoretical Implications

Single-option aversion is difficult to reconcile with the most commonly invoked theories of consumer search and choice deferral. Purely rational models of search (Weitzman 1979) do not allow for the violation of regularity observed in all of the studies presented. Even models of search that would allow for such a pattern rely on information-based explanations (Moorthy et al. 1997), which experiment 2 weighs against. Moreover, the pattern of results observed runs counter to recent work in psychology and consumer behavior showing that additional options can increase choice deferral (Tversky and Shafir 1992). As a whole, these find-

ings suggest that there may be some other unexplored psychological force driving consumer search behavior.

Although the experiments presented do not test any specific theory for single-option aversion, the results do constrain what such a theory might look like. Experiments 3 and 4 show that single-option aversion is related to search behavior. Thus, any theory explaining this effect must focus on an increased motivation to search, rather than on a devaluation of the option presented. One potential explanation for this effect is that consumers rely on a rule (Amir and Ariely 2007; Prelec and Herrnstein 1991) or personal norm of behavior (Ajzen and Fishbein 1977; Baron 1994; Cialdini, Reno, and Kallgren 1990; Schwartz 1977), which dictates that they should search in certain contexts—such as when faced with a single option. Prior research has shown that such rules can override cost-benefit analyses and lead consumers to avoid a favored option (Amir and Ariely 2007; Hsee et al. 2003). Decision rules are also sensitive to framing manipulations (Amir and Ariely 2007), consistent with experiments 3 and 4, and once invoked can influence subsequent decisions (Reno, Cialdini, and Kallgren 1993), consistent with experiment 5. Another potential explanation is that being exposed to only one option might spark consumers' curiosity or their hope of finding an ideal option (Mogilner, Shiv, and Iyengar 2013), in a way that seeing more than one option does not. It is also possible that single options create a feeling of uncertainty that increases consumers' propensity to search (independent of the actual amount of information available). Indeed, subjective feelings of fluency while making a choice can affect deferral rates (Novemsky et al. 2007). Future research should examine why single-option aversion occurs, as well as the implications of its underlying mechanism for search behavior.

Understanding the underlying mechanism behind the effect will also help clarify its normative implications. While the effect is named single-option aversion, this should not be interpreted to indicate that those in the single-option condition are behaving nonnormatively. Rather, the inconsistency in choices between the two conditions is what violates most models of rational choice. Knowing why this effect occurs will help illuminate whether those in the single-option condition are searching “too much” or whether those in the two-option condition are searching “too little.”

Practical Implications

This research suggests that stores should be mindful of offering too few options. Even if consumers can find an option that they like, they may be unwilling to purchase it without considering other similar options first. This might explain why stores like Best Buy have entire walls of nearly identical TVs and cameras, despite recent research on the perils of too much choice (Dhar 1997; Iyengar and Lepper 2000; Tversky and Shafir 1992). Indeed, one Best Buy store surveyed displayed 114 different TVs in their store. While preference heterogeneity likely accounts in part for this vast array of options, it is unlikely that consumers' preferences are so refined that they require 15 different models of 32-inch visions, sug-

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gesting that something else may be at play here. More broadly, this article joins the emerging literature in consumer behavior showing that consumers react negatively to decisions that appear too simple (Labroo and Kim 2009; Schrift, Netzer, and Kivetz 2011).

The results also suggest that consumers are not just sensitive to the total number of options available but also to how the choice set is partitioned—in particular, whether one option is isolated from the rest, even temporarily. Thus, featuring an item or presenting options sequentially versus simultaneously may lead to different purchase rates. This has important implications for settings such as online retailing, in which companies are striving to present customized experiences that best meet the expected needs of each customer. For example, suppose that H&R Block was designing a landing page on its website for customers who searched for the “Basic” version of its product. Should this landing page only feature this product or should other options be included on this page? While previous research suggests that additional unwanted options may increase search costs and choice conflict, the results presented in this article suggest that that it might still be beneficial to do so. Fewer consumers may be willing to purchase the Basic option if no other options are shown.

Experiments 3 and 4 suggest that single-option aversion depends on consumers’ desire to search, and thus should be moderated by any factor which can influence it. One such factor is product category. While consumers might have a strong desire to search for some categories, they may be much less interested in doing so for others, either because they have a lot of prior experience with the category or because it is not an important enough category to merit search—a consumer entering Best Buy looking to buy batteries might be perfectly happy to purchase a pack of AA batteries, even if only one brand is available. Indeed, store behavior is consistent with this prediction. While Best Buy carries hundreds of models of televisions, they only carry two brands of AA batteries.

Beyond its implications for consumer choice, single-option aversion has implications for the measurement of consumer preferences. Conjoint designs now frequently include a “no-choice” option, which generally leads to more accurate predictions (Anderson and Wiley 1992; Louviere and Woodworth 1983). One of the drawbacks of including a no-choice option in conjoint designs is that no preference information is recorded for the choices in which neither option is selected. This has led some researchers to suggest the implementation

of the dual response design, in which participants first indicate which option they prefer and then decide whether they would prefer the selected option or none (Brazell et al. 2006). The results of experiment 2 suggest that such a design might increase the propensity to pick the no-choice option. Moreover, the results of experiment 3 suggest that conjoint results will depend on how the no-choice option is framed. Future research should examine which of the potential configurations lead to the most accurate predictions of future market shares.

It is important to note that, while the studies presented in this article use a very conservative test of single-option aversion, there may be real world examples of single-option aversion that do not satisfy this stringent test. Suppose that 30% of consumers choose a Sony DVD player when it is the lone option and 30% of consumers choose a Philips DVD player when it is the lone option, while 30% choose Sony and 30% choose Philips when the two options are presented together. Though not a strict violation of regularity, many more customers would be buying a DVD player when two are available, a result consistent with single-option aversion. One could argue that this effect is driven by brand preference. However, this explanation could only account for the entirety of the effect if there was perfect brand loyalty (none of the consumers purchasing one brand would be willing to purchase the other one), which is unlikely. Thus, single-option aversion may be affecting choice, even when no violation of regularity is observed. It is also important to note that in many choice contexts both options may not benefit equally from the inclusion of a competitor. In the studies presented, this occurred by design in order to control for alternate explanations such as the asymmetric dominance effect (Huber et al. 1982). However, this is not a requirement for single-option aversion. Indeed, from a practical perspective, adding a dominated option may have the largest effect, since the dominant option would benefit both from the reduced effect of single-option aversion and the effect of asymmetric dominance.

In conclusion, this research documents single-option aversion, an effect with practical and theoretical implications for consumer search. While the current research has focused on isolating and documenting this effect, in real world settings, single-option aversion is likely to interact with other established forces that affect consumer search—such as conflict-based deferral and information-based search. Future research should examine the relative contribution of these forces to search, as well as the moderators of their isolated and joint effects.

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APPENDIX

Both-Options Condition

We are interested in understanding consumers' purchase decisions. For the following question, imagine that you are looking to buy a new DVD player. Below are two options that you are considering:

 Sony DVD player	 Philips DVD player
Features: Progressive scan video output 1080p video output Precision cinema progressive technology delivers smooth, true-to-life images \$69.99	Features: Progressive scan video output 1080p video output Dolby digital and DTS decoding for cinematic sound quality \$64.99

Please indicate which alternative you would choose:

I would buy the Sony DVD player.

I would buy the Philips DVD player.

I would delay the decision to look for more options.

Sony Condition

We are interested in understanding consumers' purchase decisions. For the following question, imagine that you are looking to buy a new DVD player. Below is an option that you are considering:

 Sony DVD player
Features: Progressive scan video output 1080p video output Precision cinema progressive technology delivers smooth, true-to-life images \$69.99

Please indicate which alternative you would choose:

I would buy the Sony DVD player.

I would delay the decision to look for more options.

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