

# Regulatory Focus, Regulatory Fit, and the Search and Consideration of Choice Alternatives

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This research investigates the effects of regulatory focus on alternative search and consideration set formation in consumer decision making. Results from three experiments yield two primary findings. First, promotion-focused consumers tend to search for alternatives at a more global level, whereas prevention-focused consumers tend to search for alternatives at a more local level. Second, promotion-focused consumers tend to have larger consideration sets than do prevention-focused consumers. Building on these two findings, it is additionally shown that whereas promotion-focused consumers attach relatively greater value to options chosen from hierarchically structured sets, prevention-focused consumers attach relatively greater value to options chosen from nonhierarchically structured item lists. Finally, whereas promotion-focused consumers attach significantly greater value to options chosen from a larger set than to options chosen from a smaller set, prevention-focused consumers do not attach significantly less value to options chosen from a larger set than to options chosen from a smaller set.

Consumer decision making can be conceptualized as a series of stages progressing from the recognition of a need to a search for information about alternatives, the formation of a consideration set, a formal evaluation of the considered alternatives, a choice, and, finally, postchoice processes such as satisfaction or disadoption. In recent years, a number of studies have shown that the later stages of this process, especially the evaluation stage and choice stage, can be influenced by a consumer's regulatory focus (Aaker and Lee 2001; Kirmani and Zhu 2007; Monga and Zhu 2005; Pham and Avnet 2004, 2009a; Sengupta and Zhou

2007; Zhou and Pham 2004; see Pham and Higgins [2005] for a review). A person's regulatory focus is a specific strategic and motivational orientation that the person adopts during goal pursuit (Higgins 1997). Two types of regulatory focus can be distinguished: a promotion focus, which emphasizes approach-oriented strategies (e.g., attending a tennis camp in order to become a better player), and a prevention focus, which emphasizes avoidance-oriented strategies (e.g., refraining from smoking to become a better tennis player). The purpose of this article is to investigate how promotion and prevention influence two earlier stages of the decision-making process: the search for information about alternatives and the formation of a consideration set.

This article reports three experiments (and two replications) documenting two primary findings. First, promotion-focused consumers tend to search for alternatives at a more global or abstract level, whereas prevention-focused consumers tend to search at a more local or concrete level. Second, promotion-focused consumers tend to have larger consideration sets than do prevention-focused consumers. Building on these two primary findings, two corollary findings are further identified. First, whereas promotion-focused consumers attach relatively greater value to options chosen from hierarchically structured decision environments, prevention-focused consumers attach relatively greater value to options chosen from nonhierarchically structured lists. This result is consistent with the notion that hierarchically struc-

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ured decision environments provide a greater regulatory fit with promotion, whereas simple item lists provide a greater regulatory fit with prevention—resulting in a “value-from-fit” effect (Higgins 2000, 2006). Finally, the total size of the choice set has asymmetrical effects on the valuations of promotion- and prevention-focused consumers. Whereas promotion-focused consumers attach significantly greater value to options chosen from a larger set than to options chosen from a smaller set, prevention-focused consumers attach comparable value to options chosen from either set. Compared to smaller option sets, larger option sets may therefore be more instrumental and “fitting” to the eager strategic orientation of promotion-focused consumers than they are detrimental and “misfitting” to the vigilant strategic inclination of prevention-focused consumers.

## REGULATORY FOCUS, SEARCH, AND CONSIDERATION

### Promotion-Focused Eagerness and Prevention-Focused Vigilance

According to regulatory focus theory (Higgins 1997), the promotion system of self-regulation originates in the regulation of growth and nurturance needs and is especially active under the pursuit of “ideals” (i.e., wishes, dreams, and aspirations). In contrast, the prevention system originates in the regulation of protection and security needs and is more active under the pursuit of “oughts” (i.e., duties, responsibilities, and obligations). Because promotion-focused self-regulation is based on approaching matches to desired end states, and prevention-focused self-regulation is based on avoiding mismatches to desired end states, the former typically fosters greater eagerness in goal pursuit, whereas the latter typically triggers greater vigilance. A major aspect of promotion-focused eagerness is a strong concern for seizing opportunities. In contrast, prevention-focused vigilance is characterized by a strong concern for avoiding mistakes. For example, in signal-detection tasks, promotion-focused individuals tend to maximize “hits” and minimize “misses” (errors of omission), whereas prevention-focused individuals tend to maximize “correct rejections” and minimize “false alarms” (errors of commission; Crowe and Higgins 1997). Similarly, in tasks involving trade-offs between speed and accuracy, promotion-focused individuals tend to emphasize speed over accuracy, whereas prevention-focused individuals tend to do the reverse (Förster, Higgins, and Bianco 2003).

The greater eagerness of a promotion focus and greater vigilance of a prevention focus have been shown to result in a variety of downstream consequences on judgments and decisions. For example, compared to prevention-focused individuals, promotion-focused individuals tend to be more willing to accept new options and new courses of actions (Lieberman et al. 1999), more willing to take investment risks (Zhou and Pham 2004), and more likely to rely on feelings (Pham and Avnet 2004, 2009a) and implicit preferences in

judgment (Florack, Friese, and Scarabis 2010). In contrast, prevention-focused individuals tend to prefer status quo options (Chernev 2004), make more conservative investments (Zhou and Pham 2004), and be more skeptical of manipulative persuasion attempts (Kirmani and Zhu 2007). The effects of regulatory focus on earlier stages of the decision-making process, such as the search for alternatives and the formation of a consideration set, are less well understood, however.

### Regulatory Focus and Search Strategy

It has recently been observed that promotion-focused individuals tend to process information more globally, whereas prevention-focused individuals tend to process information more locally (Förster and Higgins 2005; Lee, Keller, and Sternthal 2010; Semin et al. 2005). For example, promotion-focused consumers tend to use fewer categories to classify objects than prevention-focused consumers (Lee et al. 2010). People have also been found to use more abstract language to describe promotion-focused friendship strategies and more concrete language to describe prevention-focused friendship strategies (Semin et al. 2005). In addition, in a task requiring the identification of a target letter (e.g., H) presented either as a large letter made up of smaller letters (e.g., a large H made of small T's) or as small letters making up a larger letter (e.g., a large T made of small H's), promotion-focused participants respond relatively more quickly to target letters appearing as large letters, whereas prevention-focused participants respond relatively more quickly to target letters appearing as small letters (Förster and Higgins 2005). Therefore, there is converging evidence that promotion-focused individuals tend to mentally represent information at a more abstract level, whereas prevention-focused individuals tend to mentally represent the same information at a more concrete level.

Pham and Higgins (2005) hypothesized that promotion-versus prevention-focused individuals not only mentally represent information at different levels of abstraction but also search for external information at different levels of abstraction when making decisions. Many consumer decision-making environments tend to be organized hierarchically. For example, vacation resorts on travel Web sites are typically organized by major regions (e.g., Central America, Caribbean), major destinations within each region (e.g., Cancun, Jamaica), and specific areas within each destination (e.g., Cancun Beach, Cozumel). Similarly, restaurant menus are typically organized by courses (e.g., appetizers, entrees) and by types of dishes within courses (e.g., soups, salads). Pham and Higgins (2005) hypothesized that in such hierarchically structured environments, promotion-focused consumers will tend to search for information in a more global manner, devoting relatively more time and effort at higher levels of the information hierarchy (e.g., exploring the range of travel regions available), whereas prevention-focused consumers will tend to search in a more local manner, devoting relatively more time and effort at lower levels of the information hierarchy (e.g., examining the details of a spe-

cific destination). This is because a more global search should facilitate the identification of opportunities and reduce errors of omission, which is a primary concern under promotion-focused eagerness (e.g., “Since we’ve never been there, why don’t we have a look at South America?”). In contrast, a more local search should facilitate the avoidance of mistakes, a primary concern under prevention-focused vigilance, by enabling an examination of the “fine print” of the considered options (e.g., “I noticed that this hotel does not have direct access to the beach”). This first theoretical proposition is tested in experiment 1.

### Regulatory Fit and Structure of the Decision Environment

Research on the concept of regulatory fit (Higgins 2000) indicates that the pursuit of a goal in a manner that “fits” the person’s regulatory orientation often enhances the perceived value of the goal object (Avnet and Higgins 2006; Camacho, Higgins, and Luger 2003; Cesario, Grant, and Higgins 2004; Förster 2004; Higgins et al. 2003). For example, building on the finding that promotion increases the reliance on feelings in judgment, whereas prevention increases the reliance on reason (Pham and Avnet 2004, 2009a), Avnet and Higgins (2006) observed that promotion-focused (prevention-focused) participants who had used their feelings (reasons) to make a choice (i.e., participants for whom there was regulatory fit) were willing to pay more for the chosen product compared to promotion-focused (prevention-focused) participants who had used reasons (feelings) to make a choice (i.e., participants for whom there was regulatory misfit). According to regulatory engagement theory (Higgins 2006; Higgins and Scholer 2009; see Pham and Avnet [2009b] for a discussion), this is because an experience of regulatory fit strengthens the person’s motivational engagement in the choice process, thereby intensifying the force of attraction exerted by the chosen option. In addition, regulatory fit can trigger a hedonic experience of “feeling right” that tends to enhance the perceived value of objects to which these feelings are attributed (Cesario et al. 2004). The strength of engagement and experience of “feeling right” that result from situations of regulatory fit can magnify the perceived value of an object even if the source of regulatory fit is independent of the object to be evaluated (Higgins and Scholer 2009).

Combined with the proposition that promotion and prevention trigger different search strategies in consumer decision making, the regulatory fit phenomenon suggests a corollary prediction. Specifically, promotion-focused consumers should attach greater value to offers presented in decision environments that are more conducive to a global search, whereas prevention-focused consumers should attach greater value to offers presented in environments that are more conducive to a local search. This is because decision environments that fit the natural search strategy of promotion- or prevention-focused consumers should strengthen their engagement with the decision process,

thereby intensifying the attraction exerted by the options that they eventually choose, and create a subjective experience of “feeling right” that may be attributed to the chosen option. This corollary prediction is tested in experiment 2.

### Regulatory Focus and Size of Consideration Set

Consumers making decisions usually narrow down the set of options to a smaller consideration set of typically three to seven alternatives that are evaluated more carefully (Hauser and Wernerfelt 1990; Shocker, Ben-Akiva, and Boccara 1991). Pham and Higgins (2005) hypothesized that a promotion focus would encourage larger consideration sets compared to a prevention focus. This hypothesis is again based on the eagerness that characterizes promotion and the vigilance that characterizes prevention. Given that different alternatives represent different opportunities to fulfill a consumption goal, an eager concern for seizing opportunities should encourage the consideration of a larger number of alternatives. In contrast, given that each alternative also entails potential risks of making a poor decision, a vigilant concern for avoiding mistakes should encourage a more cautious consideration of a smaller number of alternatives. This theoretical proposition is also tested in experiment 1.

This proposition bears some similarity with findings by Liberman et al. (2001), who observed that in causal explanations, promotion-focused individuals tend to generate and endorse a larger number of alternative hypotheses than do prevention-focused individuals. However, there are important differences between the present theoretical proposition and these previous findings. First, in Liberman and colleagues’ research, the alternatives being considered were interpretations, explanations, and hypotheses, whereas in our research, the alternatives being considered are choice alternatives. Second, in Liberman et al.’s research, the purpose for alternative consideration was identification and causal explanation, whereas in our research, the purpose for alternative consideration is choice. Finally, in Liberman et al.’s research, the alternatives were mostly generated internally, whereas in our research, the alternatives are provided externally. Therefore, while our predictions bear some surface similarity with Liberman et al.’s (2001) previous findings, the two sets of results are in fact quite distinct, with our predictions being more directly related to consumer decision making.

### Regulatory Fit and Size of Total Option Set

Given the predicted difference in the size of their consideration sets, a natural question is whether promotion- and prevention-focused consumers would value options differently, depending on the total number of options that are presented to them. We predict that they would, but that unlike the hierarchical-versus-list structure of the decision environment, the size of the option set will have asymmetrical effects on the valuations of promotion-focused and prevention-focused consumers.

Among promotion-focused consumers, two psychological

processes should increase the perceived value of options that are chosen from larger as opposed to smaller sets. First, given that promotion-focused consumers are expected to consider more options in general, a larger option set should elicit a greater regulatory fit compared to a smaller option set. This regulatory fit should increase the perceived value of the chosen option by intensifying the attraction exerted by this option and creating a subjective experience of “feeling right” toward this option. In addition, given their concern for seizing opportunities, promotion-focused consumers should especially value the increased range of options that larger sets provide. Compared to smaller sets, larger option sets provide logically better opportunities to fulfill a consumer’s goals, because, all else being equal, the chances of finding an option that one likes are greater from a larger set than from a smaller set. Therefore, among promotion-focused consumers, two sets of mechanisms should contribute to making the selected options more valuable if chosen from larger sets than if chosen from smaller sets: (a) greater regulatory fit to the size of these consumers’ consideration sets, and (b) greater diversity of opportunities for goal fulfillment with larger option sets.

In contrast, among prevention-focused consumers, the size of the option set should have a weaker effect on the valuation of the chosen option. This is because competing forces should cancel out. On the one hand, given that they tend to consider fewer options in general, prevention-focused consumers may experience less regulatory fit when choosing from larger option sets than when choosing from smaller option sets. This regulatory-fit effect would tend to decrease the perceived value of options selected from larger as opposed to smaller sets. On the other hand, this effect should be mitigated by two factors. First, even though prevention-focused consumers are expected to prefer smaller consideration sets, they need not experience strong regulatory “misfit” from larger option sets, because they can still restrict the number of alternatives that they actually consider. Second, while not to the same degree as promotion-focused consumers, prevention-focused consumers should still value the greater diversity of goal-fulfilling options that larger sets provide; after all, they too are more likely to find an option that they want from larger sets than from smaller sets. Therefore, larger option sets should theoretically not be as detrimental to the vigilant orientation of prevention-focused consumers as they are instrumental to the eager orientation of promotion-focused consumers.

In sum, unlike the hierarchical-versus-list structure of the decision environment, the size of the option set should have asymmetrical effects on the perceived value of the chosen options among promotion- and prevention-focused consumers. Whereas promotion-focused consumers should value the selected options significantly more when choosing from larger sets than when choosing from smaller sets, prevention-focused consumers’ valuations should be less affected by the total size of the option set. This second corollary proposition is tested in experiment 3.

## EXPERIMENT 1

In this first experiment, participants who were put into either a promotion focus or a prevention focus were asked to make dinner selections from a restaurant’s prix fixe menu. The selections were made using a computer interface that allowed unobtrusive tracing of participants’ search processes. It was predicted that promotion-focused participants would devote a greater share of their search efforts to higher levels of the menu hierarchy, compared to prevention-focused participants. It was additionally predicted that promotion-focused participants would have larger consideration sets than prevention-focused participants.

### Method

*Overview and Procedure.* Eighty student participants were randomly assigned to either a promotion-focus or a prevention-focus condition. They were given a written scenario inviting them to imagine landing a great job out of college and going to dinner with their parents at a restaurant. Two versions of the scenario were created to activate either a relative promotion focus or a relative prevention focus. After participants were primed into a regulatory focus, they were shown a Web-based restaurant prix fixe menu and asked to select three courses. Unbeknownst to participants, every page that they opened and the length of time spent on each page were recorded, to construct process indicators of participants’ search patterns. Following their menu selections, participants were asked to check the names of the dishes that they seriously considered from a provided list. They then completed two evaluative measures, an open-ended demand check, two confounding checks assessing their mood and task involvement, and various background questions related to, for example, demographics.

*Regulatory-Focus Priming.* The scenario used to prime relative promotion or prevention was about 250 words long and structurally the same across conditions (see table A1). In both versions, readers were asked to imagine that they are about to graduate from college and have recently landed a great job whose attractive characteristics are described. To celebrate, they are taking their parents out to a nice dinner. In the promotion version, the job is described in terms of ideals, accomplishments, growth, and opportunities (e.g., “an ideal job,” “your dream career,” “many opportunities to travel abroad”), and the dinner is framed as an occasion “to pamper your parents and yourself to celebrate your achievements.” In the prevention version, the job is described in terms of duties, responsibilities, security, and protection (e.g., “the job your parents always thought you should do,” “you will feel secure,” “comprehensive medical insurance”), and the dinner is framed as an occasion “to thank (your parents) for their consistent support and encouragement.”

As a pretest of this manipulation, 61 participants were asked to project themselves into one of the two versions of the scenario and list all the thoughts and feelings that come

to mind. They were then asked to code each thought and feeling as reflecting either (a) aspirations and hopes, (b) responsibilities and duties, (c) things they would seek to do, (d) things they would avoid doing, and (e) none of the above. As an index of the relative activation of promotion versus prevention, the number of responsibilities/duties and things that participants would avoid ( $b + d$ ) was subtracted from the number of aspirations/hopes and things that participants would seek to do ( $a + c$ ). As expected, the index was significantly higher in the promotion-focus condition ( $M = 3.65$ ) than in the prevention-focus condition ( $M = 2.20$ ;  $F(1, 59) = 4.03$ ,  $p < .05$ ). Participants were also asked to rate whether in this situation they “would pick a dish that would delight (them)” (1 = promotion) or “would pick a dish that would not disappoint (them)” (7 = prevention). As expected, relative preferences were more skewed toward the promotion options in the promotion-focused condition ( $M = 1.32$ ) than in the prevention-focused condition ( $M = 2.10$ ;  $F(1, 59) = 6.84$ ,  $p < .02$ ). Similarly, participants were asked to rate whether they “would prefer a dish that (they) really want” (1 = promotion) or “would prefer a dish that is good for (them)” (7 = prevention). Relative preferences were also more skewed toward the promotion options in the promotion-focused condition ( $M = 1.81$ ) than in the prevention-focused condition ( $M = 2.70$ ;  $F(1, 59) = 4.57$ ,  $p < .04$ ). (Note that this manipulation should not be seen as a manipulation of absolute promotion or prevention focus but rather as a manipulation of relative engagement of promotion versus prevention.)

**Restaurant Menu Interface.** The main task involved selecting three courses from a restaurant’s prix fixe menu. A fictitious French restaurant menu was constructed from cookbooks and actual restaurant menus, listing 45 dishes expected to appeal to a variety of tastes and food preferences. It was hierarchically organized into three main categories (first courses, main courses, and finishing courses), each divided into three subcategories (e.g., first courses were subdivided into soups, appetizers, and salads), with five dishes per subcategory ( $3 \times 3 \times 5 = 45$ ). The menu was turned into a four-level Web-page hierarchy. Participants accessed the menu at level 1, which simply listed the three main categories of courses (first, main, and finishing). Level-2 pages showed the subcategories of courses within each main category (e.g., soups, appetizers, salads). Level-3 pages listed the names and à la carte prices of five dishes within each subcategory (e.g., “baked French onion soup . . . \$7.00”) and were the main level at which dish selections were made. Finally, level-4 pages provided short descriptions of every dish (beyond its name); dish selections could be made from these pages as well.

**Measures.** Four measures of participants’ search patterns were constructed: (a) the total number of pages opened to complete the task, (b) the total length of time these pages remained open, (c) the number of pages opened at each level, and (d) the amount of time spent viewing these pages at each level. Because the level-1 page was simply an intro-

duction page, which all participants accessed only once, all search-tracing measures were computed on pages from level 2 and beyond. As a measure of the size of their consideration sets, participants were then given the list of all 45 dishes organized by category and asked to check each dish that they seriously considered. To assess participants’ evaluations of the target, they were asked (a) to rate their liking of the restaurant’s food selection on a 1 (not at all) to 7 (very much) scale, and (b) to assess what would be a reasonable price for a three-course meal at this restaurant. As a confounding check for mood, participants rated their current affective state on four seven-point items (e.g., “bad/good,” “unhappy/happy”;  $\alpha = .91$ ). Finally, as a confounding check for task involvement, participants rated their agreement with four seven-point items (e.g., “I went through the dinner menu very carefully”;  $\alpha = .71$ ).

## Result

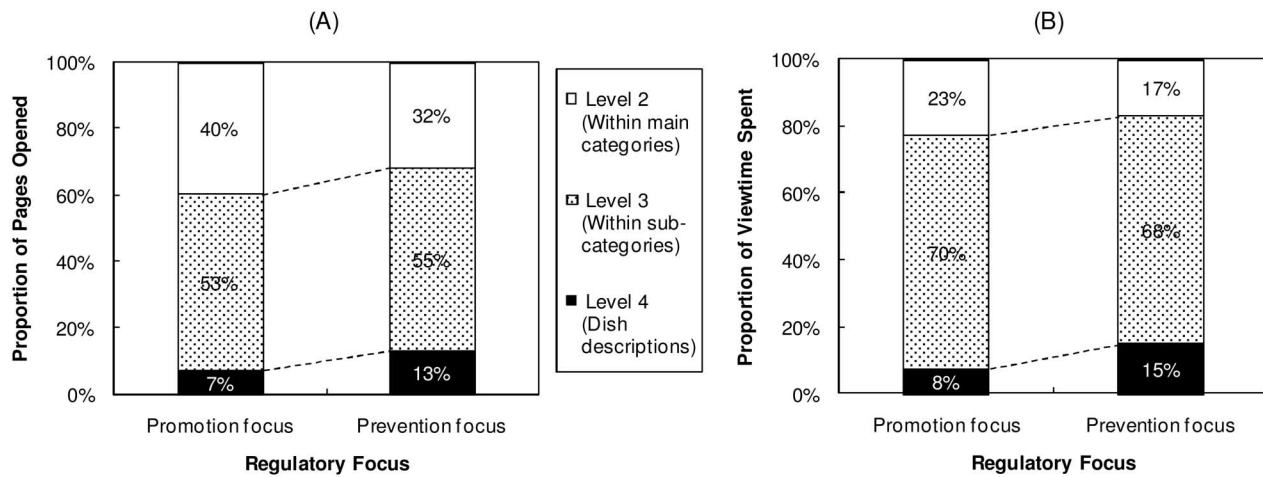
**Preliminary Checks and Analyses.** When probed, none of the participants showed evidence of having guessed the true purpose of the study. Consistent with previous findings (Crowe and Higgins 1997; Pham and Avnet 2004), participants in the promotion and prevention conditions reported being equally involved with the task (5.16 vs. 5.14;  $F < 1$ ). Although promotion-focused participants reported being in a slightly more positive mood ( $M = 6.12$ ) than prevention-focused participants ( $M = 5.76$ ), this difference did not reach conventional levels of significance ( $F(1, 78) = 2.61$ ,  $p = .11$ ), consistent with previous findings showing that differences in regulatory focus are largely uncorrelated with differences in mood (Crowe and Higgins 1997; Pham and Avnet 2004). (Controlling for participants’ mood as a covariate in the analyses did not affect any of the results reported below.)

**Search Effort and Search Strategy.** To evaluate the sheer amount of search effort that promotion- and prevention-focused participants devoted to the task, the total number of pages that participants opened and the total amount of time spent on these pages were submitted to ANOVAs. Although prevention-focused participants tended to open a slightly larger total number of pages than promotion-focused participants ( $M_{\text{Prom}} = 15.08$  vs.  $M_{\text{Prev}} = 17.43$ ) and spent a slightly longer amount of time on these pages ( $M_{\text{Prom}} = 93.15$  seconds vs.  $M_{\text{Prev}} = 104.53$  seconds), neither of these tendencies was significant (both  $F$ ’s  $< 1$ ). This is consistent with the general proposition that promotion and prevention should not trigger different amounts of search in decision making (Pham and Higgins 2005).

While the amount of search was largely comparable across the two groups, the focus of this search tended to differ between the two groups. As illustrated in figure 1A, compared to participants in the prevention-focused condition, participants in the promotion-focused condition opened a relatively greater proportion of pages at the higher levels of the menu hierarchy (mean proportion at level 2 = 39.6% for promotion vs. 31.7% for prevention) and, correspond-

FIGURE 1

EXPERIMENT 1: EFFECTS OF REGULATORY FOCUS ON LEVEL OF SEARCH IN A HIERARCHICAL MENU



ingly, a relatively lower proportion of pages at the lower levels of the menu hierarchy (mean proportion at level 4 = 7.4% for promotion vs. 13.4% for prevention). (These effects are of course not independent, given the sum-constrained nature of proportions.) The proportion of pages opened at the middle level was almost identical across conditions (mean proportion at level 3 = 52.9% for promotion vs. 54.9% for prevention). The statistical significance of this effect was tested using a log-ratio analysis of composition (Aitchison 1986) to account for the sum-constrained nature of these proportions. Specifically, using level 2 as the comparison level, two ratios of proportions of pages opened were created and log-transformed:  $\log$  [proportion of pages at level 3/proportion of pages at level 2] and  $\log$  [proportion of pages at level 4/proportion of pages at level 2]. A tendency to search at the higher (more global) level of the information hierarchy should result in smaller log ratios, whereas a tendency to search at the lower (more specific) level of the information hierarchy should result in larger log ratios. A MANOVA confirmed that promotion-focused participants had significantly lower log ratios than prevention-focused participants (Wilks's lambda = .924;  $F(2, 77) = 3.18$ ,  $p < .05$ ), indicating that promotion-focused participants indeed devoted a relatively greater proportion of their search to higher levels of the information hierarchy, compared to prevention-focused participants.

Similar results were obtained with the average proportion of time that participants spent at each level (see fig. 1B). Compared to participants in the prevention-focused condition, participants in the promotion-focused condition spent a relatively greater proportion of time viewing pages at the higher levels of the menu hierarchy (mean proportion at level 2 = 22.7% for promotion vs. 16.9% for prevention) and, correspondingly, a relatively lower proportion of time viewing pages at the lower levels of the menu hierarchy (mean proportion at level 4 = 7.6% for promotion vs. 15.2%

for prevention). The proportion of time spent at the middle level was comparable across conditions (mean proportion at level 3 = 69.7% for promotion vs. 68.0% for prevention). Again, a log-ratio analysis of composition confirmed that promotion-focused participants spent significantly more time viewing pages at the higher levels of the information hierarchy than did prevention-focused participants (Wilks's lambda = .925;  $F(2, 77) = 3.14$ ,  $p < .05$ ).

*Size of Consideration Set.* When shown the entire list of dishes and asked to check which ones they seriously considered before making their choices, promotion-focused participants checked a larger number of dishes ( $M = 10.85$ ) than did prevention-focused participants ( $M = 8.28$ ;  $F(1, 78) = 5.87$ ,  $p < .02$ ). This is consistent with the proposition that promotion-focused consumers consider a larger number of alternatives.

*Evaluations.* Promotion-focused participants had more favorable evaluations of the food selection at the restaurant ( $M = 5.93$ ) than did prevention-focused participants ( $M = 5.10$ ;  $F(1, 78) = 5.95$ ,  $p < .02$ ). In addition, after controlling for participants' age, the perceived reasonable price for a three-course meal at the restaurant was higher among promotion-focused participants ( $M = \$42.15$ ) than among prevention-focused participants ( $M = \$36.66$ ;  $F(1, 77) = 4.17$ ,  $p < .05$ ). As shall be examined in experiment 2, this evaluation effect may be due to the fact that the menu interface was more compatible with the search inclinations of promotion-focused participants than with those of prevention-focused participants.

## Discussion

Participants in the two regulatory focus conditions appeared to exert comparable levels of search effort both in

terms of total number of pages opened and in total amount of time spent on these pages. This is consistent with previous theorizing and findings suggesting that promotion and prevention do not trigger different levels of processing intensity (Pham and Avnet 2004; Pham and Higgins 2005; see also Kirmani and Zhu 2007). However, the two conditions did exhibit differences in terms of search strategy. Compared to prevention-focused participants, promotion-focused participants devoted a relatively greater proportion of their search to higher levels of the menu structure, both in terms of number of pages opened at each level and in amount of time spent at each level. This is consistent with the proposition that under promotion, consumers tend to search for alternatives at a more global, “big-picture” level, whereas under prevention, consumers tend to search for alternatives at a more local, item-specific level. The second main finding was that promotion-focused participants reported considering a greater number of alternatives than did prevention-focused participants. This is consistent with the proposition that promotion-focused consumers have larger consideration sets than prevention-focused consumers.

Although this was not the main focus of this experiment, it was additionally found that promotion-focused participants had somewhat more favorable evaluations of the offering than prevention-focused participants did. This evaluation effect may be due to the fact that the menu interface had a strong hierarchical structure that should be more compatible with the global search inclinations of promotion-focused participants than with the more local search inclinations of prevention-focused participants, resulting in a value enhancement from regulatory fit in the promotion-focus condition. As shall be shown in experiment 2, under a different menu interface that is more compatible with the search inclinations of prevention-focused participants, this evaluation effect may reverse.

To assess the robustness and generalizability of this experiment’s main findings, a conceptual replication of this study was conducted using a different product domain and a more subtle manipulation of regulatory focus. In experiment 1B (described only briefly here), 52 participants were asked to describe either (a) their personal hopes and aspirations (which should prime a promotion focus), or (b) their personal obligations and duties (which should prime a prevention focus; Higgins et al. 1994; Pham and Avnet 2004). Then, in a supposedly unrelated study, participants were asked to select two movies that they would be interested in renting from a real movie-rental Web site that had a built-in hierarchical structure. Consistent with experiment 1A’s findings, promotion-focused participants devoted a greater proportion of their search to relatively higher levels of the information hierarchy compared to prevention-focused participants, both in terms of pages opened (Wilks’s lambda = .846;  $F(3, 48) = 2.92, p < .05$ ) and in terms of amount of time spent at each level (Wilks’s lambda = .791;  $F(3, 48) = 4.22, p < .02$ ). In addition, when asked to list all the movies that they seriously considered, promotion-focused participants listed more movies ( $M = 2.85$ ) than

did prevention-focused participants ( $M = 1.92$ ;  $F(1, 50) = 4.22, p < .05$ ). Finally, promotion-focused participants evaluated the Web site’s movie selection more favorably ( $M = 5.54$ ) than did prevention-focused participants ( $M = 4.71$ ;  $F(1, 50) = 4.53, p < .04$ ). Therefore, experiment 1A’s findings were replicated in a totally different product domain and with a different manipulation of regulatory focus. The next two experiments build on these basic findings to investigate valuation consequences of the different search strategies and sizes of consideration set under promotion versus prevention.

## EXPERIMENT 2

Building on the finding that promotion-focused consumers tend to search options at a more global level, whereas prevention-focused consumers tend to search at a more local level, this second experiment tests the prediction that making the decision environment more or less consistent with these distinct search inclinations can influence the value that promotion- and prevention-focused consumers attach to offers selected from these environments. The methodology was similar to that of experiment 1. Participants were put into a promotion or prevention focus and then asked to select three dishes from a restaurant’s prix fixe menu. Unlike in experiment 1, two different versions of the same menu were constructed. In one condition, the menu was presented in the same multilevel, hierarchical format as in experiment 1. This hierarchical menu structure was expected to provide a better regulatory fit with the search orientation of promotion-focused participants because a hierarchical structure should make it easier to have a “big picture” view of the options. In the other condition, the menu was presented in a single-level, list format, which was expected to provide a better regulatory fit with the search orientation of prevention-focused participants because it should make it easier to examine the options at the individual level. It was predicted that promotion-focused participants would value their choices more if the menu was presented in a hierarchical format, whereas prevention-focused participants would value their choices more if the menu was presented in a list format. This is because conditions of regulatory fit should strengthen a person’s engagement in goal pursuit, thereby amplifying the inherent hedonic value of the goal object, which for restaurant dishes is positive (Higgins and Scholer 2009). In addition, conditions of regulatory fit may activate a pleasant subjective experience of “feeling right” that may be misattributed to the chosen option, thereby enhancing its perceived value (Avnet and Higgins 2003, 2006). Both mechanisms would result in a greater perceived value of the chosen meal when the menu structure fits the regulatory search inclination of the consumer than when it does not fit this inclination.

### Method

Participants were 185 nonvegetarian students who were randomly assigned to the conditions of a 2 (promotion vs.

prevention) × 2 (hierarchical vs. list format) between-subjects design. The procedure closely followed that of experiment 1. After reading a dinner scenario phrased either in promotion terms or in prevention terms, participants were asked to select a three-course prix fixe dinner priced at \$29 from a computerized restaurant menu. There were two versions of the menu. In the hierarchical-format condition, the menu was essentially the same as in experiment 1. Participants had to navigate across different levels of hierarchically organized Web pages to view the dishes and select their three courses. In the list-format condition, the menu had a single-level structure. The same 45 dishes appeared on a single Web page as a simple list with three headings: first, main, and finishing courses. Subcategory headings (e.g., soups, salads, appetizers) were omitted, and the overall ordering of the dishes was the same as in the hierarchical-format condition. After participants had selected their three dishes, they were asked to state how much they would be willing to pay for the dinner had its price not been set already, which was the main dependent measure. As a proxy measure of the level of regulatory fit that participants experienced with the different versions of the menu, they were asked to evaluate the user-friendliness of the menu interface on three seven-point items (e.g., “very easy/very difficult to use,” “user-friendly/not user-friendly”;  $\alpha = .82$ ). Task involvement was assessed with the same four items as in experiment 1 ( $\alpha = .83$ ), and mood was assessed with five seven-point items (e.g., “bad/good,” “unpleasant/pleasant”;  $\alpha = .93$ ). Experimental demand was also assessed, along with background information.

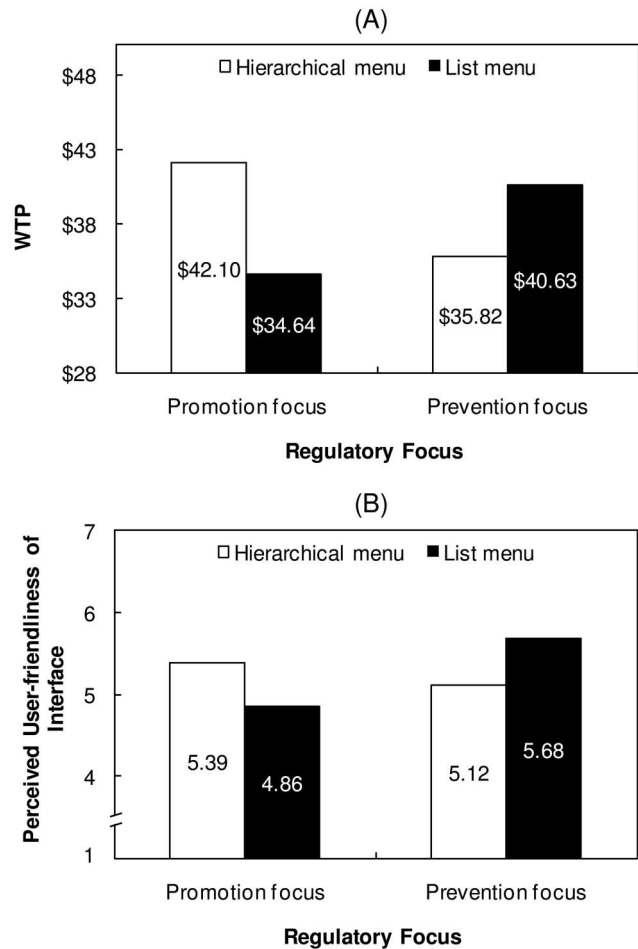
**Results**

*Preliminary Checks and Analyses.* When probed, none of the participants showed evidence of having guessed the study’s hypothesis. There were no main effects of regulatory focus on either mood or task involvement (both  $F^2$ s < 1). Involvement was slightly higher in the list-format condition ( $M = 5.68$ ) than in the hierarchical-format condition ( $M = 5.29$ ;  $F(1, 181) = 5.11, p < .03$ ). However, additional analyses showed that this difference did not account for the main results described below.

*Dinner Valuations.* A 2 × 2 ANOVA of participants’ willingness to pay (WTP) for the meal (log-transformed to correct for skewness) uncovered a significant regulatory-focus × menu-format interaction ( $F(1, 181) = 10.08, p < .002$ ; see fig. 2A). As predicted, promotion-focused participants were willing to pay significantly more for the dinner when the menu was presented in a hierarchical format ( $M = \$42.10$ ) than when it was presented in a simple list format ( $M = \$34.64$ ;  $F(1, 181) = 6.25, p < .02$ ). In contrast, prevention-focused participants were willing to pay significantly more when the menu was presented in a list format ( $M = \$40.63$ ) than when it was presented in a hierarchical format ( $M = \$35.82$ ;  $F(1, 181) = 3.97, p < .05$ ). In other words, participants’ WTP was higher when there was a fit between the menu structure and their regulatory

**FIGURE 2**

EXPERIMENT 2: EFFECTS OF REGULATORY FOCUS AND MENU STRUCTURE ON (A) WILLINGNESS TO PAY AND (B) PERCEIVED USER-FRIENDLINESS



orientation ( $M = \$41.41$ ) than when there was a lack of fit ( $M = \$35.26$ ;  $F(1, 181) = 10.08, p < .002$ ).

*User-Friendliness of Menu Interface.* As a proxy measure of the degree of regulatory fit or misfit elicited by the different menu structures, participants were asked to rate the user-friendliness of the interface. These ratings also exhibited a regulatory-focus × menu-format interaction ( $F(1, 181) = 9.07, p < .003$ ; see fig. 2B). As expected, promotion-focused participants found the hierarchical menu more user-friendly than the list menu ( $M_{Hier} = 5.39$  vs.  $M_{List} = 4.86$ ;  $F(1, 181) = 4.28, p < .05$ ), whereas prevention-focused participants found the list menu more user-friendly than the hierarchical menu ( $M_{List} = 5.68$  vs.  $M_{Hier} = 5.12$ ;  $F(1, 181) = 4.80, p < .03$ ). This result is consistent with the notion that a hierarchically structured decision environment provides a greater regulatory fit with the search strategies of promotion-focused consumers, whereas



an item-specific list provides a greater regulatory fit with the search strategies of prevention-focused consumers.

## Discussion

The results support the corollary prediction that aligning the decision environment with the search inclinations of promotion- and prevention-focused consumers can increase the value that consumers attach to offers presented in this environment. Participants' WTP for the dinner was about \$6 higher (a 17% increase) when the menu format was consistent with their regulatory focus (hierarchical under promotion/listlike under prevention) than when it was inconsistent (listlike under promotion/hierarchical under prevention). Two additional results support the notion that this effect was due to differences in regulatory fit across conditions. First, as expected, promotion-focused participants found the hierarchically organized menu more user-friendly than the list menu, whereas prevention-focused participants found the opposite. This suggests that the hierarchical and list interfaces were differentially "fitting," depending on participants' regulatory focus. Second, after completing their meal selections, a subset of 119 participants was shown their dish selections and asked to confirm these selections. (This measure was not collected for the other participants who were added afterward.) The amount of time (log-transformed) that participants took to confirm their selection was submitted to an ANCOVA, with the total amount of time (also log-transformed) spent on the search as a covariate (to control for individual differences in speed). This analysis revealed a menu format-by-focus interaction ( $F(1, 114) = 5.83, p < .02$ ) showing that participants took significantly less time to confirm their dish selections when the menu structure was aligned with their regulatory focus ( $M = 34.35$  seconds) than when the menu structure was misaligned with their regulatory focus ( $M = 49.93$  seconds). This difference in amount of time taken to confirm the selections is consistent with the notion that the selected options tended to "feel right" when there was alignment between the menu structure and participants' search orientation.

Therefore, aside from replicating the regulatory-fit phenomenon, these findings document a new source of regulatory fit: a match between the hierarchical or list structure of a decision interface and the global versus local search orientations of promotion- and prevention-focused consumers. In doing so, these findings provide further evidence that promotion and prevention do trigger different search orientations. Moreover, these findings help explain why in experiments 1A and 1B, promotion-focused participants had more favorable evaluations of the offerings than did prevention-focused participants. This is likely a result of the fact that, in these studies, the choice interface was hierarchical and therefore more compatible with the search inclinations of promotion-focused individuals.

## EXPERIMENT 3

Building on the finding that consideration sets tend to be larger under promotion than under prevention, this experiment examines how the total number of alternatives in the choice set influences the perceived value of selected options among promotion- versus prevention-focused consumers. Participants were put into a promotion or prevention focus through the same scenario as in experiments 1 and 2 and asked to select three dishes from a restaurant's prix fixe menu. In one condition, the menu listed 12 dishes per course; in the other condition, the menu listed only three dishes per course. The main dependent measure was the monetary value that participants attached to their selected meal.

Unlike the hierarchical-versus-list structure of the decision environment, the total size of the option set was expected to have asymmetrical effects on the valuations of promotion-focused and prevention-focused participants. Specifically, it was predicted that among promotion-focused participants, the perceived value of the chosen options would be significantly greater in the larger-menu condition than in the smaller-menu condition. This is because a larger menu should provide a greater regulatory fit with the larger consideration sets of promotion-focused consumers, which would enhance the perceived value of the chosen option. Moreover, given that promotion-focused participants should be eager to identify goal-fulfilling opportunities, they should particularly value the increased range of options that a larger menu provides.

In contrast, prevention-focused participants' valuations of the chosen meals were expected to be less affected by the size of the menu. This is because competing forces would tend to cancel out. On the one hand, a larger menu should theoretically provide a poorer regulatory fit to the smaller consideration sets of prevention-focused consumers, which would tend to decrease the value of dishes selected from the larger menu. On the other hand, this regulatory-fit effect should be mitigated by the fact that even if presented with a large menu, prevention-focused participants can still restrict the number of options that they actually consider. Moreover, the chances of finding dishes that one likes are still greater from a larger menu, which should be of value even to prevention-focused participants.

## Method

Participants were 89 nonvegetarian students who were randomly assigned to the conditions of a 2 (promotion vs. prevention)  $\times$  2 (smaller vs. larger menu) between-subjects design. The procedure closely followed that of experiment 1. Participants were put into a promotion or prevention focus through a dinner scenario and asked to select three dishes from a restaurant's prix fixe menu with a nominal price of \$29 per person. In the larger-menu condition, there were 12 dishes to choose from per course (36 in total); in the smaller-menu condition, there were only three choices per course (nine in total). To ensure that the content of the dishes was comparable across conditions, four different sets of nine

dishes (three per course) were created and rotated to appear an equal number of times in the smaller-menu condition. In the larger-menu condition, the four sets were combined and rotated in a Latin-square fashion to form four different versions of the larger menu that also appeared an equal number of times. The analyses were performed after collapsing across sets because these sets did not moderate the results.

After making their dinner selections, participants were asked to indicate how much they would be willing to pay for the selected dinner had the price not been set, which was the main dependent measure. To assess participants' perceptions of the variety of options presented to them, they were asked to rate how much they liked the selection of dishes offered on the menu on two seven-point items ("not at all/very much," "poor selection/great selection";  $\alpha = .92$ ). As confounding checks, task involvement was assessed with three items ( $\alpha = .76$ ), and mood was assessed with four items ( $\alpha = .92$ ). A demand check was also included, along with background questions.

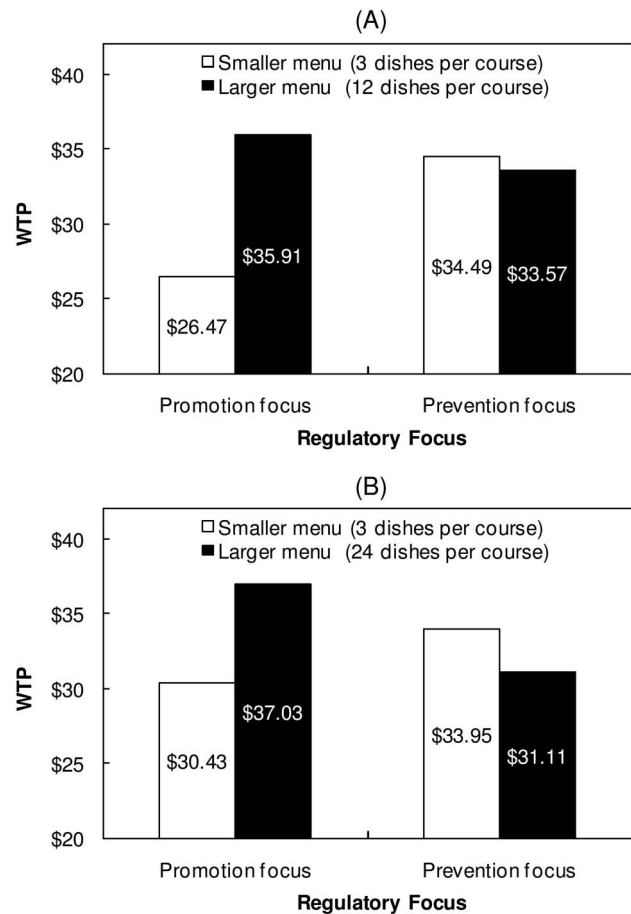
## Results

**Preliminary Checks and Analyses.** None of the participants showed evidence of having guessed the study's hypotheses. As in the previous experiments, there were no effects of the manipulations on task involvement (all  $F$ 's < 1). There was also no main effect of regulatory focus on participants' mood ( $F < 1$ ). However, a regulatory-focus  $\times$  menu-size interaction ( $F(1, 85) = 4.35, p < .05$ ) indicated that among promotion-focused participants, mood was slightly but not significantly more positive in the larger-menu condition ( $M = 6.23$ ) than in the smaller-menu condition ( $M = 5.78; F(1, 85) = 2.27, p = .13$ ), whereas among prevention-focused participants, mood was slightly but not significantly more positive in the smaller-menu condition ( $M = 6.01$ ) than in the larger-menu condition ( $M = 5.59; F(1, 85) = 2.08, p = .15$ ). While not anticipated, this interaction could be due in part to differences in regulatory fit across conditions.

**Dinner Valuations.** Participants' WTP for the meal was submitted to a  $2 \times 2$  ANOVA (after being log-transformed to correct for skewness). Participants' WTP for the dinner was marginally higher in the larger-menu condition ( $M = \$34.69$ ) than in the smaller-menu condition ( $M = \$30.22; F(1, 85) = 2.94, p < .10$ ). More central to our investigation, this effect was qualified by a significant focus  $\times$  menu-size interaction ( $F(1, 85) = 4.20, p < .05$ ). As illustrated in figure 3A, promotion-focused participants were willing to pay significantly more for the dinner when choosing from the larger menu ( $M = \$35.91$ ) than when choosing from the smaller menu ( $M = \$26.47; F(1, 85) = 6.99, p < .01$ ). In contrast, prevention-focused participants were not willing to pay significantly less when choosing from the larger menu ( $M = \$33.57$ ) than when choosing from the smaller menu ( $M = \$34.49; F < 1$ ). This interaction remained significant even after controlling for participants' mood in an ANCOVA ( $F(1, 84) = 4.23, p = .04$ ), suggesting that this

FIGURE 3

EXPERIMENT 3: EFFECTS OF REGULATORY FOCUS AND MENU SIZE ON WILLINGNESS TO PAY ([A] MAIN EXPERIMENT; [B] EXPERIMENT 3)



interaction was not driven by differences in mood across conditions.

**Assessment of Menu Selection.** As a partial test of the notion that these valuation effects are driven in part by a differential assessment of the variety of options available, participants' evaluations of the menu selections were submitted to a  $2 \times 2$  ANOVA. A main effect of menu size indicated that participants liked the choice selections more when there were 12 dishes per course ( $M = 5.64$ ) than when there were only three dishes per course ( $M = 4.78; F(1, 85) = 8.98, p < .01$ ). A marginally significant size  $\times$  focus interaction ( $F(1, 85) = 3.16, p < .08$ ) further indicated that this effect was more pronounced among promotion-focused participants ( $M_{12} = 5.74$  vs.  $M_3 = 4.37; F(1, 85) = 11.26, p < .002$ ) than among prevention-focused participants ( $M_{12} = 5.54$  vs.  $M_3 = 5.20; F < 1$ ). These results are consistent with the notion that both promotion- and prevention-focused consumers tend to value the variety of

goal-fulfilling options that larger sets provide, especially promotion-focused consumers.

## Discussion

Whereas Iyengar and Lepper (2000) previously found that large option sets may decrease consumers' motivation and choice satisfaction compared to smaller option sets, in this experiment, WTP was found to be marginally higher when participants were presented with the larger menu than when participants were presented with the smaller menu. As elaborated in the general discussion, Iyengar and Lepper's "too-much-choice" effect may not be as general as previously thought (Scheibehenne, Greifeneder, and Todd 2010). This effect may only hold under certain conditions that were not met in our study.

More central to our investigation is the finding that the size of the menu interacted asymmetrically with the regulatory focus in shaping how participants valued their selected meals. Whereas promotion-focused participants perceived their chosen dinner to be worth significantly more if it was chosen from a larger menu than if it was chosen from a smaller menu, prevention-focused participants did not perceive their chosen dinner to be worth significantly less when chosen from a larger menu than from a smaller menu. Therefore, larger option sets appear to be more instrumental to the valuations of promotion-focused consumers than they are detrimental to the valuations of prevention-focused consumers.

To verify that this pattern of results was reliable, the study was replicated in experiment 3B with a stronger manipulation of set size. Ninety-six participants were assigned to the same 2 (focus)  $\times$  2 (menu size) conditions as in experiment 3A. The methodology was identical except that the larger menu listed 24 dishes per course (72 in total) instead of 12 dishes (36 in total). The smaller menu was kept at three dishes per course (nine in total). As illustrated in figure 3B, WTP for the chosen meal again revealed an asymmetrical interaction between participants' regulatory focus and the size of menu ( $F(1, 92) = 5.40, p < .03$ ). Again, promotion-focused participants were willing to pay significantly more for the meal after choosing from the larger menu ( $M = \$37.03$ ) than after choosing from the smaller menu ( $M = \$30.43; F(1, 92) = 5.40, p < .03$ ), whereas prevention-focused participants were not willing to pay significantly less after choosing from the larger menu ( $M = \$31.11$ ) than after choosing from the smaller menu ( $M = \$33.95; F < 1$ ). Therefore, the asymmetrical effect of option set size on the valuations of promotion- versus prevention-focused consumers seems to be reliable.

One may notice, however, that in experiment 3A, the interaction seemed to be mostly driven by promotion-focused participants' negative responses to the smaller menu rather than their positive responses to the larger menu (see fig. 3A). In contrast, in experiment 3B, the interaction appeared to be largely driven by promotion-focused participants' positive responses to the larger menu rather than by their negative responses to the smaller menu (see fig. 3B).

Therefore, while the two experiments converge in showing that, compared to prevention-focused consumers, promotion-focused consumers are more positively influenced by the total size of the option set, there may be variations in the specific location of this effect. Such variations are not necessarily incompatible with our theorizing. Just as conditions of regulatory fit should generally increase the perceived value of intrinsically desirable targets, conditions of regulatory nonfit should similarly decrease the perceived value of such targets (Higgins and Scholer 2009). The pattern observed in experiment 3A may indicate that promotion-focused participants experienced stronger regulatory nonfit with the smaller menu (which had three dishes per course) than they experienced regulatory fit with the larger menu (which had 12 dishes per course), whereas the pattern observed in experiment 3B may indicate that promotion-focused participants experienced stronger regulatory fit with the larger menu (which had 24 dishes per course) than they experienced regulatory nonfit with the smaller menu (which had three dishes per course). The literature is still unclear as to when regulatory fit versus regulatory nonfit effects are likely to dominate (Lee and Higgins 2009).

While the pattern of results was generally consistent across experiments 3A and 3B, one important limitation of these two studies is that they do not provide direct evidence of the proposed explanation, which involves multiple processes. We speculate that under a promotion focus, two forces increase the perceived value of options that are selected from a larger set as opposed to a smaller set: the higher regulatory fit and the increased opportunities for goal fulfillment that larger sets provide. The finding that promotion-focused participants had much more favorable evaluations of the choice selections when the menu was larger than when the menu was smaller seems consistent with the latter force. In contrast, under a prevention focus, different forces tend to cancel out. The lower regulatory fit that may arise with larger option sets may be offset by the facts that prevention-focused consumers can limit the number of alternatives they actually consider and that larger option sets logically increase the chance of finding a suitable alternative. However, more direct evidence of the proposed explanation would be desirable.

## GENERAL DISCUSSION

This research provides two primary findings and two corollary findings. The first primary finding is that while promotion- and prevention-focused consumers seem to search for equivalent amounts of information when making decisions, their search strategies seem to differ. The first experiment and its replication show, across two different domains, that promotion-focused consumers tend to search alternatives in a more global manner, spending relatively more time and effort at higher levels of decision-information hierarchies, whereas prevention-focused consumers tend to search alternatives in a more local manner, spending relatively more time and effort at lower levels. We theorize that promotion-focused consumers tend to search for information

at a more global level because it enables them to identify a broader range of opportunities—a primary concern under promotion-induced eagerness. In contrast, prevention-focused consumers tend to search for information at a more local level because it allows them to avoid mistakes—a primary concern under prevention-induced vigilance—by reviewing the “fine print” of considered options.

A slightly different interpretation may be that while promotion-focused consumers do gravitate toward higher level information, prevention-focused consumers may process higher level and lower level information more evenly. This interpretation is difficult to separate from our original explanation, because in experiments 1A and 1B, a more evenly distributed processing among prevention-focused consumers (compared to promotion-focused consumers) would also entail a more concrete level of processing on average. We leave it to future research to disentangle these two slightly different interpretations.

Regardless of its exact interpretation, this primary finding entails a corollary prediction about how the structure of the decision environment may interact with consumers’ regulatory focus in shaping how they value presented and selected options. In experiments 1A and 1B, where information about the options had a hierarchical structure, promotion-focused participants had more favorable evaluations than did prevention-focused participants. This is presumably because hierarchically structured decision environments provide a greater regulatory fit with the global search inclinations of promotion-focused individuals than with the local search inclinations of prevention-focused individuals. More direct evidence of this interpretation was found in experiment 2, which showed that whereas promotion-focused participants valued their selected meal more if it was chosen from a hierarchical menu, prevention-focused participants valued their meal more if it was chosen from a list menu. Therefore, whereas promotion-focused participants may experience greater regulatory fit with a hierarchical decision interface that presumably facilitates a more global search, prevention-focused participants seem to experience greater regulatory fit with a listing interface that presumably facilitates a more item-specific search. Promotion-focused participants indeed tended to find the hierarchical menu more user-friendly than the list menu, whereas prevention-focused consumers tended to find the opposite, suggesting a difference in fit depending on the condition. Moreover, participants whose menu structure matched their regulatory orientation were faster in confirming their dish selections than participants whose menu structure did not match their regulatory orientation. This faster choice confirmation is consistent with the idea that a proper alignment of the decision environment with the search inclinations of promotion- and prevention-focused consumers makes the chosen option “feel right.”

The second primary finding of this research is that promotion-focused consumers tend to have larger consideration sets than do prevention-focused consumers. This finding was also observed across two decision domains in experiments

1A and 1B. Compared to prevention-focused participants, promotion-focused participants reported considering 31% more dishes in experiment 1A and 48% more movies in experiment 1B. Again, we propose that this finding arises from the eagerness associated with promotion and the vigilance associated with prevention. An eager concern for the seizing of opportunities naturally encourages consideration of a larger number of alternatives. In contrast, a vigilant concern for avoiding mistakes encourages the more cautious consideration of a smaller number of alternatives, as each alternative also entails potential risks of making a poor decision.

This second primary finding also has corollary downstream consequences on how consumers evaluate options. In particular, promotion- and prevention-focused consumers appear to be asymmetrically sensitive to the total size of the option set. In experiments 3A and 3B, it was found that promotion-focused participants valued their chosen meal significantly more when it was chosen from a larger menu than when it was chosen from a smaller menu, whereas prevention-focused participants did not value their meal significantly less when choosing from a larger menu than when choosing from a smaller menu. We speculate that this is because under promotion, two forces combine to increase the perceived value of options that are selected from a larger set: the higher regulatory fit and the increased opportunities for goal fulfillment that larger sets provide. In contrast, under prevention, these forces tend to cancel out. The lower regulatory fit that may arise with larger option sets may be offset if prevention-focused consumers limit the number of alternatives that they actually consider and if they attach some value to the fact that larger option sets increase their chance of finding a suitable alternative. Therefore, larger option sets may be more valuable to promotion-focused consumers than they are detrimental to prevention-focused consumers. In future research, it would be useful to test the cogency of the proposed explanation with more direct measures of the underlying processes.

Although more tangential, it is also interesting that in both experiments 3A and 3B, WTP was higher in the larger menu condition than in the smaller menu condition. This finding seems to contradict Iyengar and Lepper’s (2000) finding that large option sets can be demotivating and result in lower choice satisfaction—the so-called too much choice (TMC) effect. Although this finding seems to be well accepted, more recent results suggest that the TMC effect may not be as robust as previously thought (Haynes 2009; Kahn and Wansink 2004; Reutskaja and Hogarth 2009; Scheibehenne et al. 2010; White and Hoffrage 2009). The TMC effect may be more likely to be observed (*a*) when the alternatives are difficult to differentiate, (*b*) when consumers have to justify their choices, and (*c*) when consumers have limited time to make their choice. None of these conditions applied in our experiments. In fact, our findings suggest another likely boundary condition of the TMC effect. This effect is less likely to be observed among promotion-focused consumers, who generally value a diversity of goal-fulfilling

alternatives. Thus, the mixed support that the TMC effect has received recently may be due in part to failure to account for consumer heterogeneity in regulatory focus.

To conclude, this research extends previous consumer research by showing how two earlier stages of the consumer decision-making process—the search for information about alternatives and the formation of a consideration set—are affected by consumers’ regulatory focus. It also extends previous regulatory focus research in four respects. First, it shows that the recently observed tendency to mentally represent information at a more abstract level under promotion and a more concrete level under prevention extends to how consumers search for external information in decision making. Second, it shows that this tendency interacts with the architecture of the decision environment in shaping how promotion- and prevention-focused consumers value chosen options, thereby identifying a new source of regulatory fit. Third, the research shows that compared to prevention-focused individuals, promotion-focused individuals not only consider a broader set of internal hypotheses in causal explanation, they also consider a larger set of external alternatives in choice. Fourth, it shows that the total size of the

option set exerts a nonobvious asymmetrical influence on the valuations of promotion- and prevention-focused individuals. Finally, the research contributes to the recent debate on the pervasiveness of the TMC effect by identifying another likely moderator of this effect.

This research has obvious implications for the design of various decision environments such as service menus, product catalogs, physical store displays, and retail Web sites. The findings provide specific directions in terms of the number of options that should be offered and how they should be organized. For instance, the number of alternatives offered should be larger when consumers are expected to be promotion-focused than when they are expected to be prevention-focused. In addition, some products, such as individual stocks, are known to be more closely aligned with a promotion focus, whereas other products, such as mutual funds, are known to be more closely aligned with a prevention focus (Zhou and Pham 2004). Our findings would suggest that a hierarchical display would increase the appeal of individual stocks but decrease the appeal of mutual funds to potential investors, whereas an item-specific listing would have the reverse effect.

## APPENDIX

TABLE A1

PRIMING INSTRUCTIONS OF REGULATORY FOCUS (EXPERIMENTS 1–3)

Promotion-Focus	Prevention-Focus
<p>Imagine that after years of hard work in college, you are about to graduate and have been interviewing for jobs at several companies. Today, a phone call informs you the good news. You got an ideal job that puts you on track toward your dream career—a job that you have aspired to for years. This is the job you have always dreamed of ever since you were a child. In addition to the potential for developing a successful career, this is a job you know you will really enjoy doing. It offers many opportunities to travel abroad, which fulfill your hope to experience new and exciting things. The job also includes perks such as a free membership in a new local health club, as you hope to stay energetic and fit. At the same time, it provides opportunities for personal growth and gains. Since the company offers good vacation days per year, you will still be able to spend time on things you really wanted to achieve or obtain in your personal life. Many of your close friends will also be working in the city, which is what you have desired. You are excited to move on to the next phase of your life.</p> <p>Later today, your parents are in town for your recent graduation, and you have decided to take them to an exciting French restaurant to celebrate your new job offer. You are treating them and really want to pamper your parents and yourself to celebrate your achievements. As the waiter seats your party, he gives each of you its dinner prix fixe menu and explains that you can choose any one first-course entrée, one main-course entrée, and one finishing entrée—a combination of three entrées—for a fixed price. You open the restaurant menu and start looking through the entrées in choosing your three-course dinner. . . .</p>	<p>Imagine that after years of hard work in college, you are about to graduate and have been interviewing for jobs at several companies. Today, a phone call informs you the good news. You got a job that you feel you cannot refuse—the one that you know you needed. This is the job your parents always thought you should do ever since you were a child. In addition to your parents’ expectation that you ought to have a stable job, this is a job you know you will feel secure and comfortable in doing. You need to be financially responsible to support yourself and will no longer be a financial burden for your parents. The job also provides comprehensive medical insurance, as you may need it at times. At the same time, the stability of the job allows you to pay back your tuition loans and credit card bills. Since the company offers good vacation days per year, you will still be able to spend time on duties and obligations in your personal life. Many of your close friends will also be working in the city, as you are expected to maintain close ties with them after graduation. You are ready to move on to the next phase of your life.</p> <p>Later today, your parents are in town for your recent graduation, and you have decided to take them to a serious French restaurant to thank them for their consistent support and encouragement. As the waiter seats your party, he gives each of you its dinner prix fixe menu and explains that you can choose any one first-course entrée, one main-course entrée, and one finishing entrée—a combination of three entrées—for a fixed price. You open the restaurant menu and start looking through the entrées in choosing your three-course dinner. . . .</p>

## REFERENCES

- Aaker, Jennifer L. and Angela Y. Lee (2001), "'I' Seek Pleasures and 'We' Avoid Pains: The Role of Self-Regulatory Goals in Information Processing and Persuasion," *Journal of Consumer Research*, 28 (1), 33–49.
- Aitchison, John (1986), *The Statistical Analysis of Compositional Data*, New York: Chapman & Hall.
- Avnet, Tamar and E. Tory Higgins (2003), "Locomotion, Assessment and Regulatory Fit: Value Transfer from 'How' to 'What,'" *Journal of Experimental Social Psychology*, 39 (September), 525–30.
- (2006), "How Regulatory Fit Affects Value in Consumer Choices and Opinions," *Journal of Marketing Research*, 43 (1), 1–10.
- Camacho, Christopher J., E. Tory Higgins, and Lindsay Luger (2003), "Moral Value Transfer from Regulatory Fit: What Feels Right Is Right and What Feels Wrong Is Wrong," *Journal of Personality and Social Psychology*, 84 (3), 498–510.
- Cesario, Joseph, Heidi Grant, and E. Tory Higgins (2004), "Regulatory Fit and Persuasion: Transfer from 'Feeling Right,'" *Journal of Personality and Social Psychology*, 86 (3), 388–404.
- Chernev, Alexander (2004), "Goal Orientation and Consumer Preference for the Status Quo," *Journal of Consumer Research*, 31 (3), 557–65.
- Crowe, Ellen and E. Tory Higgins (1997), "Regulatory Focus and Strategic Inclinations: Promotion and Prevention in Decision-Making," *Organizational Behavior and Human Decision Processes*, 69 (2), 117–32.
- Florack, Arnd, Malt Friese, and Martin Scarabis (2010), "Regulatory Focus and Reliance on Implicit Preferences in Consumption Contexts," *Journal of Consumer Psychology*, 20 (2), 193–204.
- Förster, Jens (2004), "How Body Feedback Influences Consumers' Evaluation of Products," *Journal of Consumer Psychology*, 14 (4), 416–26.
- Förster, Jens and E. Tory Higgins (2005), "How Global versus Local Perception Fits Regulatory Focus," *Psychological Science*, 16 (8), 631–36.
- Förster, Jens, E. Tory Higgins, and Amy T. Bianco (2003), "Speed/Accuracy Decisions in Task Performance: Built-in Tradeoff or Separate Strategic Concerns?" *Organizational Behavior and Human Decision Processes*, 90 (1), 148–64.
- Hauser, John R. and Birger Wernerfelt (1990), "An Evaluation Cost Model of Consideration Sets," *Journal of Consumer Research*, 16 (4), 393–408.
- Haynes, Graeme A. (2009), "Testing the Boundaries of the Choice Overload Phenomenon: The Effect of Number of Options and Time Pressure on Decision Difficulty and Satisfaction," *Psychology and Marketing*, 26 (3), 204–12.
- Higgins, E. Tory (1997), "Beyond Pleasure and Pain," *American Psychologist*, 52 (12), 1280–1300.
- (2000), "Making a Good Decision: Value from Fit," *American Psychologist*, 55 (11), 1217–30.
- (2006), "Value from Hedonic Experience and Engagement," *Psychological Review*, 113 (3), 439–60.
- Higgins, E. Tory, Lorraine C. Idson, Antonio L. Freitas, Scott Spiegel, and Daniel C. Molden (2003), "Transfer of Value from Fit," *Journal of Personality and Social Psychology*, 84 (6), 1140–53.
- Higgins, E. Tory, Christopher J. Roney, Ellen Crowe, and Charles Hymes (1994), "Ideal versus Ought Predilections for Approach and Avoidance: Distinct Self-Regulatory Systems," *Journal of Personality and Social Psychology*, 66 (2), 276–86.
- Higgins, E. Tory and Abigail A. Scholer (2009), "Engaging the Consumer: The Science and Art of the Value Creation Process," *Journal of Consumer Psychology*, 19 (2), 100–114.
- Iyengar, Sheena S. and Mark R. Lepper (2000), "When Choice Is Demotivating: Can One Desire Too Much of a Good Thing?" *Journal of Personality and Social Psychology*, 79 (6), 995–1006.
- Kahn, Barbara E. and Brian Wansink (2004), "The Influence of Assortment Structure on Perceived Variety and Consumption Quantities," *Journal of Consumer Research*, 30 (4), 519–33.
- Kirmani, Amna and Rui Zhu (2007), "Vigilant against Manipulation: The Effect of Regulatory Focus on the Use of Persuasion Knowledge," *Journal of Marketing Research*, 44 (4), 688–701.
- Lee, Angela Y. and E. Tory Higgins (2009), "The Persuasive Power of Regulatory Fit," in *Frontiers of Social Psychology: Social Psychology of Consumer Behavior*, ed. Michaela Wänke, New York: Psychology Press, 319–33.
- Lee, Angela Y., Punam A. Keller, and Brian Sternthal (2010), "Value from Regulatory Construal Fit: The Persuasive Impact of Fit between Consumer Goals and Message Concreteness," *Journal of Consumer Research*, 36 (February), 735–47.
- Liberman, Nira, Lorraine C. Idson, Christopher J. Camacho, and E. Tory Higgins (1999), "Promotion and Prevention Choices between Stability and Change," *Journal of Personality and Social Psychology*, 77 (6), 1135–45.
- Liberman, Nira, Daniel C. Molden, Lorraine C. Idson, and E. Tory Higgins (2001), "Promotion and Prevention Focus on Alternative Hypotheses: Implications for Attributional Functions," *Journal of Personality and Social Psychology*, 80 (1), 5–18.
- Monga, Ashwani and Rui Zhu (2005), "Buyers versus Sellers: How They Differ in Their Responses to Framed Outcomes," *Journal of Consumer Psychology*, 15 (4), 325–33.
- Pham, Michel Tuan and Tamar Avnet (2004), "Ideals and Oughts and the Reliance on Affect versus Substance in Persuasion," *Journal of Consumer Research*, 30 (4), 503–18.
- (2009a), "Contingent Reliance on the Affect Heuristic as a Function of Regulatory Focus," *Organizational Behavior and Human Decision Processes*, 108 (2), 267–78.
- (2009b), "Rethinking Regulatory Engagement Theory," *Journal of Consumer Psychology*, 19 (2), 115–23.
- Pham, Michel Tuan and E. Tory Higgins (2005), "Promotion and Prevention in Consumer Decision Making: The State of the Art and Theoretical Propositions," in *Inside Consumption: Consumer Motives, Goals, and Desires*, ed. S. Ratneshwar and David Glen Mick, New York: Routledge.
- Reutskaja, Elena and Robin M. Hogarth (2009), "Satisfaction in Choice as a Function of the Number of Alternatives: When 'Goods Satiated,'" *Psychology and Marketing*, 26 (3), 197–203.
- Scheibehenne, Benjamin, Rainer Greifeneder, and Peter M. Todd (2010), "Can There Ever Be Too Many Options? A Meta-analytical Review of Choice Overload," *Journal of Consumer Research*, 37 (August), forthcoming.
- Semin, Gun R., E. Tory Higgins, Lorena G. de Montes, Yvette Estourget, and Jose F. Valencia (2005), "Linguistic Signatures of Regulatory Focus: How Abstraction Fits Promotion More than Prevention," *Journal of Personality and Social Psychology*, 89 (1), 36–45.
- Sengupta, Jaideep and Rongrong Zhou (2007), "Understanding Impulsive Eaters' Choice Behaviors: The Motivational Influ-

- ences of Regulatory Focus,” *Journal of Marketing Research*, 44 (2), 297–308.
- Shocker, Alan D., Moshe Ben-Akiva, and Bruno Boccara (1991), “Consideration Set Influences on Consumer Decision-Making and Choice: Issues, Models, and Suggestions,” *Marketing Letters*, 2 (3), 181–97.
- White, Chris M. and Ulrich Hoffrage (2009), “Testing the Tyranny of Too Much Choice against the Allure of More Choice,” *Psychology and Marketing*, 26 (3), 280–98.
- Zhou, Rongrong and Michel Tuan Pham (2004), “Promotion and Prevention across Mental Accounts: How Financial Products Dictate Consumers’ Investment Goals,” *Journal of Consumer Research*, 31 (2), 125–35.

## QUERIES TO THE AUTHOR

1 Au: JCR prefers to avoid the use of italics for emphasis.

2 Au: We added a cross-reference to table A1 here. If you would prefer an alternate placement, please let us know where you would like it cited.

3 Au: Since there is an experiment "1B", we have replaced all instances of "experiment 1" with "experiment 1A" (likewise with experiment 3/3A).