

## Regulatory fit from attribute-based versus alternative-based processing in decision making

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### Abstract

This paper discusses the fit between attribute-based versus alternative-based processing and regulatory focus, and its impact on decision outcome valuation. Attribute-based processing was found to occur more frequently under prevention focus, whereas alternative-based processing occurred more frequently under promotion focus. The fit between prevention/promotion focus and attribute-based/alternative-based processing was found to enhance satisfaction with choices and the perceived monetary value of chosen options. Moreover, the effect of fit on outcome valuation was found to be mediated by ease of processing. Finally, the effects of fit on ease of processing and outcome valuation disappeared when consumers first practiced to process information based on either attributes or alternatives.

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**Keywords:** Regulatory fit; Regulatory focus; Attribute/alternative processing

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When evaluating a set of multi-attribute options, consumers typically use one of two processing strategies: attribute processing or alternative processing (Payne, Bettman, & Johnson, 1993). The former—also labeled dimensional (Russo & Doshier, 1983) or intradimensional (Payne, 1976) processing—consists of processing information about a single attribute across all brands before information about a second attribute is considered. In contrast, alternative processing—also termed holistic (Russo & Doshier, 1983), interdimensional (Payne, 1976), or brand (Bettman & Kakkar, 1977) processing—involves processing information about multiple attributes of a single alternative before considering information about a second alternative.

Past research has focused primarily on identifying the circumstances under which alternative versus attribute processing would predominate. For the most part, the emphasis has been on the effect of various decision task characteristics. For example, Payne (1976) reported that processing becomes more attribute-based with increasing task complexity, and under

higher time pressure (Payne, Bettman, & Johnson, 1988). Moreover, Bettman and Park (1980) found processing to be more attribute-based in the early stages and more alternative-based later in the decision process, while Lichtenstein and Slovic (1971, 1973) showed greater attribute processing when the decision task consisted of choosing, but more alternative processing when the task involved betting. Prior research has also investigated the effect of individual differences, albeit to a much lesser extent. Bettman and Park (1980), for example, found that consumers with a high degree of prior knowledge and experience use more alternative processing than less knowledgeable and experienced consumers. While a great deal of investigative effort has been dedicated to the determinants of processing strategies, little attention has been devoted to the consequences of engaging in attribute versus alternative processing. The present research examines the important, yet overlooked, question of how processing strategy may influence the value that consumers assign to their chosen products.

It is argued that processing strategy affects the value of a chosen option as a function of consumers' motivational orientation. Building on regulatory focus and fit theories

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(Higgins, 1997, 2000), we propose that attribute processing is more consistent with a prevention motivation, whereas alternative processing is more consistent with a promotion motivation. Accordingly, we predict that attribute processing would lead to greater perceived value under prevention focus, whereas alternative processing is expected to produce greater perceived value under promotion focus. The present research also aims to clarify the boundaries and the process underlying the proposed regulatory fit effect. We suggest that a decision made using a regulatory fitting strategy feels right because it is generally experienced with greater ease than a decision made using a non-fitting strategy. However, the feeling right experience produced by regulatory fit can be quite fleeting. We propose that using a previously practiced strategy can produce a feeling right experience that can easily override the one arising from regulatory fit. As a result, the effect of regulatory fit on perceived value is expected to disappear whenever the regulatory fitting strategy is inconsistent with the practiced strategy.

### Regulatory focus and attribute versus alternative processing

The strategy used to make a decision depends, among other things, on the decision-maker's current motivational orientation. Regulatory focus theory (Higgins, 1997, 1998) distinguishes between two general motivational orientations: a promotion focus, which is a regulatory state concerned with advancement and accomplishment, and a prevention focus, which is a regulatory state concerned with protection and safety. When in a promotion focus, people are concerned with achieving gains and capturing opportunities. They are most sensitive to the presence versus absence of positive outcomes. When in a prevention focus, people are concerned with preventing mistakes and avoiding losses. They are most sensitive to the absence versus presence of negative outcomes (Higgins, 1997). These discrepancies in concerns and sensitivities to gains and losses result in systematically different preferences for the types of strategies and means used in goal pursuit. Promotion-focused individuals generally prefer eagerness-related strategies in goal pursuit. Such strategies involve a concern with achieving "hits" and ensuring against "misses." Prevention-focused individuals, however, generally prefer vigilance-related strategies in goal pursuit. A vigilant strategy involves a concern with achieving "correct rejections" and ensuring against "false hits" (Crowe & Higgins, 1997). These rooted differences in strategic preferences for eagerness versus vigilance often lead to differences in processing styles. For example, compared to prevention-focused individuals, those in a promotion focus were found to favor speed over accuracy in task completion (Forster, Higgins, & Bianco, 2003), and to favor heuristic and affect-based modes of evaluation over systematic and substance-based modes of evaluation (Pham & Avnet, 2004). The present paper suggests that differences in regulatory focus can also affect decision-makers' preference for attribute versus alternative processing.

Consider attribute processing, which involves comparing specific attributes associated with each brand. It is a systematic and effortful strategy that is generally favored by those who seek to maximize decision accuracy.<sup>1</sup> Consistent with this idea, Sanbonmatsu and Fazio (1990) found that increased motivation to make accurate decisions prompts people to use more attribute processing. Because an accuracy motive is more characteristic of a prevention focus than a promotion focus (Forster et al., 2003), we expect attribute processing to be a more natural strategy under prevention focus than under promotion focus. In contrast, alternative processing encourages the use of general attitudes, summary impressions, intuitions, and heuristics (Mantel & Kardes, 1999). Because promotion focus is associated with greater reliance on internal states and heuristic processing (Pham & Avnet, 2004), we also expect alternative processing to be a more natural strategy under promotion focus than under prevention focus. Further support for these ideas is found in recent studies showing that promotion focus is associated with more global (Forster & Higgins, 2005) and abstract (Zhu & Myers-Levy, 2007) cognitive processing, while prevention focus is associated with more local and concrete processing. To the extent that attributes represent local features of alternatives, and that alternative evaluation involves greater abstraction than the evaluation of individual attributes, these findings suggest that attribute versus alternative processing may indeed be related to prevention and promotion foci.

**H1.** Consumers who are promotion-focused are more likely to prefer alternative versus attribute processing formats. In contrast, consumers who are prevention-focused are more likely to prefer attribute versus alternative processing formats.

### Regulatory fit and decision outcome

People experience regulatory fit when their strategy of goal pursuit is compatible with their regulatory focus (Higgins, 2000). For example, promotion-focused individuals experience regulatory fit when they adopt eager decision strategies that emphasize achieving gains and capturing opportunities, and experience non-fit when they adopt vigilant decision strategies that focus on guarding against losses and preventing mistakes. Conversely, prevention-focused individuals experience fit when they adopt vigilant strategies, and experience non-fit when they adopt eager strategies.

People who experience regulatory fit are thought to engage more strongly in what they are doing, and to feel right about it (Higgins, 2000, 2005). Furthermore, feeling right as a result of regulatory fit increases the value of the goal pursuit process (Freitas & Higgins, 2002; Higgins, 2000), and because people may confuse the sources of value associated with the process

<sup>1</sup> It is important to point out that attribute processing needs not be objectively more accurate than alternative processing to be sought by those who are concerned with decision accuracy. It only needs to be anticipated as such. This distinction between anticipated and experienced accuracy is discussed in detail in Payne et al. (1993, pp. 91–92).

versus the outcome, the increased value of the goal pursuit process may transfer to the outcome (Camacho, Higgins, & Luger, 2003; Higgins, 2000; Higgins, Idson, Freitas, Spiegle, & Molden, 2003). Accordingly, regulatory fit has been found to increase people's confidence in their reactions (both positive and negative) to objects or events, which leads to more extreme evaluations (Cesario, Grant, & Higgins, 2004; Idson, Liberman, & Higgins, 2004). Of particular relevance to the present research, regulatory fit has also been shown to affect the perceived monetary value of an object. Higgins et al. (2003) asked participants to choose between a coffee mug and a less desirable disposable pen. Half of the participants were instructed to make their choice using an eager strategy (by asking them to think about what they would gain if they chose each object), whereas the other half were instructed to make their choice using a vigilant strategy (by asking them to think about what they would lose by not choosing each object). After making their choice (most people chose the mug), the participants were asked to indicate how much they thought the mug was worth, and in another study they were asked how much of their own money they would pay to buy the mug. As predicted, promotion-focused individuals gave higher price estimates and were willing to pay more for the mug when they used an eager strategy than when they used a vigilant strategy, whereas prevention-focused individuals gave higher price estimates and were willing to pay more for the mug when they used a vigilant strategy than when they used an eager strategy. Similar results were obtained by Avnet and Higgins (2003, 2006) using different regulatory fit manipulations and different choice scenarios.

If attribute processing is more compatible with prevention focus and alternative processing is more compatible with promotion focus, as suggested in this paper, then the value derived from the fit between prevention/promotion focus and attribute/alternative processing should transfer to the decision outcome (Camacho et al., 2003; Higgins, 2000; Higgins et al., 2003).

**H2.** Attribute processing would lead to greater outcome satisfaction and higher outcome valuation under prevention focus, whereas alternative processing would result in greater outcome satisfaction and higher outcome valuation under promotion focus.

Despite a rapidly growing body of evidence in support of regulatory fit theory (Avnet & Higgins, 2003, 2006; Camacho et al., 2003; Cesario et al., 2004; Freitas, Liberman, & Higgins, 2002; Higgins et al., 2003; Lee & Aaker, 2004), we currently know relatively little about the mechanisms underlying the fit effects. While it is commonly accepted that a feeling right experience drives the regulatory fit effects, it is still unclear why adopting a regulatory fitting strategy should feel right. We suggest that a decision made using a regulatory fitting strategy feels right because it is generally experienced with greater ease than a decision made using a non-fitting strategy. This idea is consistent with a recent study by Lee and Aaker (2004), in which participants found it easier to process a persuasive message when its frame was compatible versus incompatible

with their motivational orientation. The enhanced ease of processing was shown to mediate the effect of regulatory compatibility on subsequent brand evaluations.

**H3.** The effect of regulatory fit on perceived monetary value would be mediated by ease of processing.

An equally important question relates to the boundary conditions of the fit effects. When is regulatory fit more or less likely to influence perceived value? We know that feeling right as a result of regulatory fit increases the value of the goal pursuit process (Freitas & Higgins, 2002; Higgins, 2000), which then transfers to the outcome (Camacho et al., 2003; Higgins, 2000; Higgins et al., 2003). However, the feeling right experience produced by regulatory fit can be quite fleeting, and is likely to be overridden by another feeling right experience arising from a more enduring source.

People often learn to use a particular strategy to solve a given problem. Over time, the learned strategy becomes the natural response whenever the associated problem is encountered. We propose that a decision made using a previously practiced strategy is experienced with greater ease than a decision made using an unpracticed strategy, even when the unpracticed strategy happens to fit the individuals' regulatory focus. This reasoning is consistent with a recent study showing that repeated exposure to a stimulus increases its perceptual fluency (Weisbuch & Mackie, 2009). In other words, using a practiced strategy is likely to produce a feeling right experience that is less fleeting than the one arising from regulatory fit. Because feeling right from using a practiced strategy is expected to override the feeling right experience arising from regulatory fit, the effects of regulatory fit should be eliminated whenever the regulatory fitting strategy is inconsistent with the practiced strategy.

**H4.** The effects of regulatory fit on ease of processing and perceived monetary value would disappear when consumers have previously practiced processing information based on either attributes or alternatives.

**H4a.** Consumers who have practiced processing information based on attributes would assign greater monetary value to their chosen product following an attribute-based choice task than following an alternative-based choice task, regardless of their regulatory focus. In addition, they would find attribute processing easier than alternative processing.

**H4b.** Consumers who have practiced processing information based on alternatives would assign greater value to their chosen product following an alternative-based choice task than following attribute-based choice task, regardless of their regulatory focus. In addition, they would find alternative processing easier than attribute processing.

**H4c.** In all cases, the effects on monetary value would be mediated by ease of processing.

## Study 1

The main goal of Study 1 was to assess the general idea that attribute processing better fits a prevention focus, whereas

alternative processing better fits a promotion focus. More specifically Study 1 tests our first hypothesis that attribute processing is more likely under prevention focus, whereas alternative processing is more likely under promotion focus. Study 1 was also designed to test the first part of Hypothesis 2 that the fit between processing strategy and regulatory focus positively influences consumers' satisfaction with their decisions.

### Method

Seventy two undergraduate students (38 women) took part in Study 1. Participants' age varied from 18 to 29 with a mean of 21.6 and a standard deviation of 2.2.

Half of the respondents were randomly assigned to a promotion focus condition, and the other half to a prevention focus condition. Respondents' promotion focus was primed by asking them to write about their most important hopes and aspirations (Chernev, 2004; Higgins et al., 1994). They were also asked to think and write about times in the past when, trying to achieve something important to them, they performed as well as they ideally would like to (Higgins et al., 2001). This additional manipulation was intended to make salient respondents' subjective history of success in using promotion-related eagerness in goal attainment. In contrast, participants in the prevention condition were asked to write about their most important duties and obligations to prime their prevention focus. They were then instructed to think and write about times in the past when, being careful enough has avoided them getting into trouble.

Following the regulatory focus manipulations, respondents were told that their next task involves making a series of choices among sets of multi-attribute options (each set consisted of 3 brands rated on 5 attributes). They were informed that two presentation formats were available: 1) a table format, which encourages comparisons across all attributes, and 2) a brand format, which describes one brand per page. After seeing an example of each format, participants were asked to choose one to complete the study. The presentation format (table versus brand) was used as a proxy measure for processing strategy. This is a reasonable proxy since past research showed a strong influence of presentation format on processing strategies. For example, using eye-fixation patterns and verbal protocols, Russo and Doshier (1983) found that when information about multi-attribute options was presented in a table format, attribute processing predominates. In contrast, Bettman and Kakkar (1977) found alternative processing to be the norm when information was presented in a brand format.

After indicating their preferred format, half of the respondents were randomly assigned to the table format and the other half received the brand format. The experimenter apologized to those who did not receive their chosen format and explained that it was no longer available. Participants then made choices in three product categories (computers, printers, and electric grills), and reported their overall satisfaction with the options they chose on a seven-point scale. Finally, they were asked which format they would choose if they were to repeat the task.

### Results and discussion

The results show a strong association between participant's regulatory focus and their preferred processing strategy (see Fig. 1). Prior to completing the evaluation task, 72.2% of prevention-focused participants indicated a preference for attribute processing by requesting the table format. In contrast, only 44.4% of those in the promotion focus condition chose the attribute format ( $\chi^2_{(1)}=5.71$ ,  $p=.02$ ). This contrast was even more pronounced after participants have completed the evaluation task. Indeed, 83.3% of prevention-focused participants indicated that they would select the table format if they were to repeat the study, compared to only 33.3% of those in the promotion focus condition ( $\chi^2_{(1)}=18.5$ ,  $p<.01$ ). Further analyses revealed that, in the pre-evaluation stage, promotion-focused consumers' likelihood of choosing the alternative processing format (55.6%) was not significantly different from 50% (i.e., was not different from what one would expect by chance,  $z=.95$ ,  $p=.34$ ). Promotion-focused consumers, however, preferred the alternative processing format significantly more (66.7%) than one would expect by chance ( $z=2.84$ ,  $p<.01$ ) in the post-evaluation stage. Prevention-focused consumers' preference for the attribute processing format was significantly greater than chance in both the pre-evaluation stage (72.2%,  $z=3.77$ ,  $p<.01$ ) and the post-evaluation stage (83.3%,  $z=5.65$ ,  $p<.01$ ). These findings are consistent with H1 and the idea that attribute processing is more compatible with a prevention focus, whereas alternative processing is more compatible with a promotion focus. Moreover, that the effect of regulatory focus on choice of processing format was stronger in the post-evaluation stage than in the pre-evaluation stage is consistent with Simonson's (2008) recent argument that inherent preferences (or embodied constraints [Smith, 2008]) influence consumers' revealed preferences to a greater extent when objects are experienced.

A direct implication of the compatibility idea is that attribute processing would result in greater satisfaction with one's decisions under prevention focus, whereas alternative processing would lead to higher satisfaction under promotion focus. To test this prediction, we conducted a 2 (prevention versus promotion)  $\times$  2 (table versus brand) analysis of variance

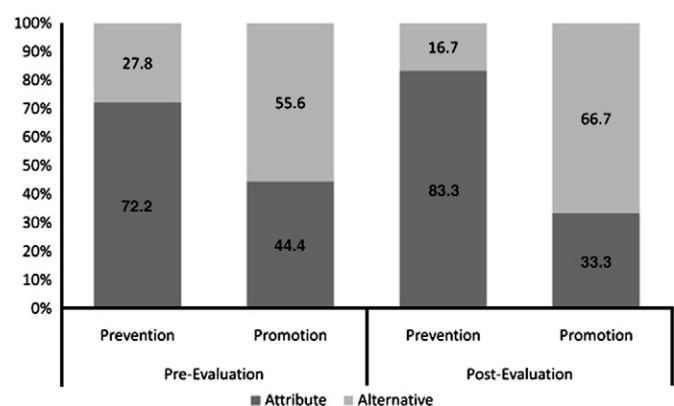


Fig. 1. Regulatory focus and processing strategy pre- and post-evaluation.



(ANOVA) with satisfaction as the dependent variable and whether the respondent received his/her preferred format as a covariate. Not surprisingly, the analysis revealed that those who received their preferred format were more satisfied with their choices than those who did not ( $F_{(1, 67)} = 18.5, p < .01$ ). More importantly, there was a significant regulatory focus  $\times$  format interaction ( $F_{(1, 67)} = 30.8, p < .01$ ) suggesting that the effect of processing strategy on satisfaction varies across prevention and promotion focus. Consistent with H2, participants who engaged in attribute processing were more satisfied with their choices under prevention focus ( $M = 6.00, SD = .91$ ) than under promotion focus ( $M = 4.89, SD = .76, F_{(1, 67)} = 8.59, p < .01$ ). In contrast, participants who engaged in alternative processing reported greater satisfaction under promotion focus ( $M = 6.39, SD = .70$ ) than under prevention focus ( $M = 5.00, SD = .97, F_{(1, 67)} = 16.92, p < .01$ ). Furthermore, promotion-focused consumers were more satisfied with their choices when using alternative processing than when using attribute processing ( $M = 6.39$  versus  $M = 4.89, F_{(1, 67)} = 36.03, p < .01$ ), whereas prevention-focused consumers reported greater satisfaction when using attribute processing than when using alternative processing ( $M = 6.00$  versus  $M = 5.00, F_{(1, 67)} = 16.01, p < .01$ ).

## Study 2

In Study 1, we established the compatibility of attribute processing with prevention focus on the one hand, and that of alternative processing with promotion focus on the other. The goal of Study 2 was to test the second part of Hypothesis 2, according to which, the fit between attribute/alternative processing and prevention/promotion focus would influence the monetary value that consumers assign to their chosen option. Study 2 was also designed to assess the ease of processing mechanism (H3) by examining its mediating role.

## Method

Eighty eight undergraduate business students participated in Study 2 (40 men, average age = 22.1,  $SD = 2.5$ ). Two factors were manipulated in a 2 (prevention versus promotion)  $\times$  2 (attribute processing versus alternative processing) between-subject design.

Participants' promotion and prevention motivations were primed using the methods described in Study 1. At the end of the regulatory focus manipulation, participants were asked to imagine that they were shopping for a bike helmet and that they narrowed their choices to two options. In one group, the description of the two options was presented in a table format (attribute processing), while in the other group, the description was presented in a brand format (alternative processing). The options were designed such that one of the helmets (option A) was normatively superior to the other (Option B) and should be chosen by all respondents. After indicating their choice, respondents were asked to indicate how much money they would be willing to pay for this product if they saw it in a store

(Avnet & Higgins, 2006), and to rate on a 7-point scale how easy/difficult it was for them to make their decision.

## Results and discussion

We conducted a 2 (regulatory focus)  $\times$  2 (processing strategy) MANOVA with monetary value and ease of processing as the dependent variables.

Results for monetary value (see Fig. 2) revealed no main effects of regulatory focus ( $F_{(1, 84)} = .07, p = .79$ ) and decision strategy ( $F_{(1, 84)} = .38, p = .54$ ), but a significant regulatory focus  $\times$  strategy interaction ( $F_{(1, 84)} = 15.74, p < .01$ ). Consistent with predictions, attribute processing leads to greater perceived value under prevention focus ( $M = \$41.73, SD = 9.97$ ) than under promotion focus ( $M = \$35.09, SD = 5.49, F_{(1, 84)} = 8.94, p < .01$ ). In contrast, individuals who engaged in alternative processing valued the helmet significantly more under promotion focus ( $M = \$38.67, SD = 6.59$ ) than under prevention focus ( $M = \$32.86, SD = 6.61, F_{(1, 84)} = 6.87, p = .01$ ). In addition, prevention-focused individuals valued the helmet significantly more when they used an attribute processing strategy than when they used an alternative processing strategy (\$41.73 versus \$32.86,  $F_{(1, 84)} = 15.94, p < .01$ ). In contrast, promotion-focused individuals were willing to pay slightly more for the helmet when they adopted an alternative processing strategy than when they adopted an attribute processing strategy (\$38.67 versus \$35.09), although the difference did not reach statistical significance ( $F_{(1, 84)} = 2.62, p = .11$ ).

Analysis of ease of processing also revealed a significant regulatory focus  $\times$  strategy interaction ( $F_{(1, 84)} = 28.94, p < .01$ ). Respondents who processed information by attributes found the decision task easier under prevention focus ( $M = 2.64, SD = 1.05$ ) than under promotion focus ( $M = 3.68, SD = .78, F_{(1, 84)} = 11.32, p < .01$ ), whereas those who processed information by alternatives experienced greater ease in making their decision under promotion focus ( $M = 2.95, SD = 1.17$ ) than under prevention focus ( $M = 4.27, SD = 1.08, F_{(1, 84)} = 18.0, p < .01$ ). Furthermore, prevention-focused participants experienced greater ease in making their decision when adopting an attribute processing strategy than when they used an alternative processing strategy ( $M = 2.64$  versus  $M = 4.27, F_{(1, 84)} = 27.74, p < .01$ ). In contrast, promotion-focused

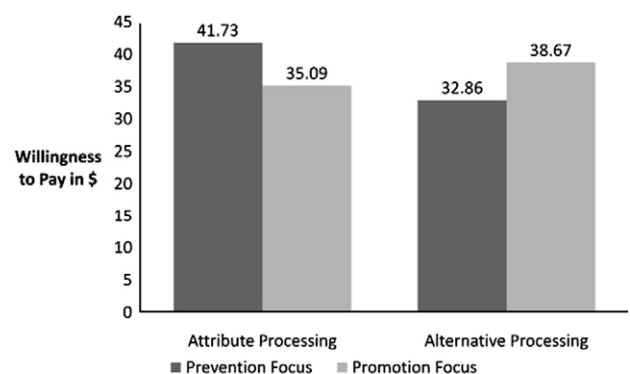


Fig. 2. Attribute versus alternative processing and willingness to pay across prevention and promotion motivations.

participants experienced less difficulty in making their decision when they used an alternative processing strategy than when they used an attribute processing strategy ( $M=2.95$  versus  $M=3.68$ ,  $F_{(1, 84)}=5.48$ ,  $p=.02$ ).

To formally test H3, we conducted a mediation analysis, with ease of processing as the mediator. A Sobel test indicated that the indirect effect of regulatory fit on monetary value through ease of processing was significant ( $z=2.75$ ,  $p<.01$ ). Further, when we added ease of processing to a model that predicted monetary value, the effect of regulatory fit dropped substantially (the unstandardized regression coefficient decreased from 6.23 to 3.43) but remained significant ( $t=1.99$ ,  $p=.05$ ), suggesting partial mediation.

### Study 3

Study 2 found that the fit between attribute/alternative processing and prevention/promotion focus results in easier decisions and increased perceived value. It also showed that ease of processing mediates the relationship between regulatory fit and perceived value. Study 3 was designed to test a boundary condition of these effects. More specifically, Study 3 tests Hypothesis 4, that the effect of regulatory fit on monetary value would disappear when consumers are first prompted in a learning task to process information based on either attributes or alternatives.

#### Method

Two hundred and twenty eight undergraduate business students participated in Study 3 (131 women, average age=21.1 with  $SD=1.88$ ). Three factors were manipulated in a 3 (no practice versus attribute practice versus alternative practice)  $\times$  2 (promotion versus prevention)  $\times$  2 (attribute focal choice versus alternative focal choice) between-subject design.

Participants were randomly assigned to either a practice condition that promoted attribute processing (attribute practice), a practice condition that promoted alternative processing (alternative practice), or a no practice condition. Those in the attribute practice condition were given a four-page booklet containing four binary choice scenarios (one per page). Each scenario instructed them to imagine that they were shopping for a given product (computer, vacation package, printer, and electric grill), and that they had narrowed their choices to two final options, from which they now had to choose. Both options were then described on five common attributes, presented in a table format to encourage comparisons across all attributes.

Participants in the alternative practice condition were also instructed to imagine that they were shopping for the same four product categories. They were given two five-page booklets sequentially.<sup>2</sup> Each booklet contained the description of four brands in two product categories (computer and vacation

package in booklet 1; printer and grill in booklet 2). Each description was presented on a separate page and contained a list of the same five attributes used in the attribute practice condition. On the fifth page, respondents were asked to indicate their choices for the two product categories without referring back to the descriptions.

Participants in the no practice group were given a filler questionnaire, which required approximately the same time to complete as either of the practice tasks.

Next, in an ostensibly unrelated task, participants' promotion and prevention motivations were primed using the methods described in Study 1. At the end of the regulatory focus manipulation, respondents were asked to complete one last task consisting of a consumer choice scenario that the experimenter supposedly forgot to administer during the previous task (practice conditions) or simply a consumer choice scenario (no practice condition). This task was identical to the helmet choice task described in Study 2. As in Study 2, respondents were then asked to indicate how much money they would be willing to pay for this product if they saw it in a store and to rate on a 7-point scale how easy/difficult it was for them to make their decision.

#### Results and discussion

Seven observations were removed from the original sample (5 respondents chose the inferior option B and two stated that they would be willing to pay zero dollars).

To test H4, we conducted a 3 (practice)  $\times$  2 (regulatory focus)  $\times$  2 (strategy) MANOVA, with monetary value and ease of processing as the dependent variables. Results for the monetary value showed a significant main effect of practice ( $F_{(2, 209)}=3.29$ ,  $p=.04$ ). Overall, participants in the no practice group were willing to pay more money for the helmet ( $M=\$37.58$ ,  $SD=9.33$ ) than both those in the attribute practice condition ( $M=\$34.29$ ,  $SD=9.26$ ) and those in the alternative practice condition ( $M=\$34.55$ ,  $SD=8.89$ ). This is consistent with the idea that regulatory fit would increase the perceived value of the helmet, but only in the no practice condition. The results also indicated a significant practice  $\times$  strategy interaction ( $F_{(2, 209)}=10.87$ ,  $p<.01$ ), and more importantly, a significant practice  $\times$  strategy  $\times$  regulatory focus three-way interaction ( $F_{(2, 209)}=4.24$ ,  $p=.02$ ). To better understand this interaction, we performed separate analyses for each practice condition (see Fig. 3).

Data from the no practice group were consistent with the results obtained in Study 2. A 2 (regulatory focus)  $\times$  2 (strategy) MANOVA revealed no main effects of regulatory focus ( $F_{(1, 209)}=.193$ ,  $p=.67$ ) and decision strategy ( $F_{(1, 209)}=1.18$ ,  $p=.28$ ), but a significant regulatory focus  $\times$  strategy interaction ( $F_{(1, 209)}=9.87$ ,  $p<.01$ ). Attribute processing leads to greater perceived value under prevention focus ( $M=\$42.34$ ,  $SD=9.49$ ) than under promotion focus ( $M=\$35.80$ ,  $SD=8.75$ ,  $F_{(1, 209)}=6.51$ ,  $p=.01$ ). In contrast, alternative processing resulted in slightly higher perceived value under promotion focus ( $M=\$39.24$ ,  $SD=9.25$ ) than under prevention focus ( $M=\$33.74$ ,  $SD=7.81$ ), although the difference was marginal ( $F_{(1, 209)}=$

<sup>2</sup> Only four brands and two product categories were shown at a time in order to minimize the risk of information overload. Such overload may interfere with respondents' ability to recall their attitudes toward the competing brands at the time of making their choices and hence bias the ease of processing measure.

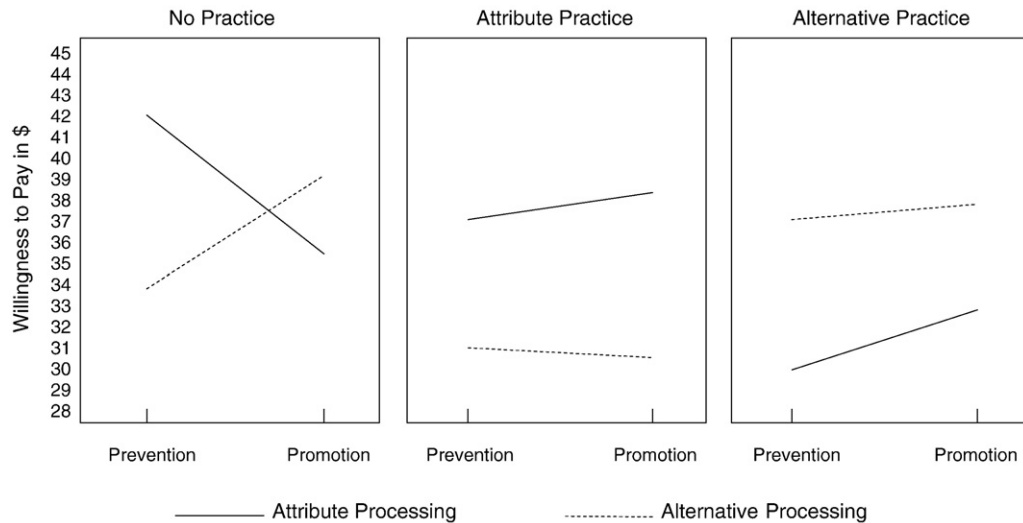


Fig. 3. Regulatory fit and willingness to pay across practice conditions.

3.60,  $p = .06$ ). In addition, promotion-focused individuals were willing to pay slightly more for the helmet when they adopted an alternative processing strategy than when they adopted an attribute processing strategy (\$39.24 versus \$35.80), although the difference was not statistically significant ( $F_{(1, 209)} = 2.03$ ,  $p = .16$ ). In contrast, prevention-focused individuals valued the helmet significantly more when they used an attribute processing strategy than when they used an alternative processing strategy (\$42.34 versus \$33.74,  $F_{(1, 209)} = 9.33$ ,  $p < .01$ ).

Consistent with H4, the regulatory focus  $\times$  strategy interaction, which is indicative of the regulatory fit effect, was not significant in either the attribute practice condition ( $F_{(1, 209)} = .08$ ,  $p = .78$ ) or the attitude practice condition ( $F_{(1, 209)} = .23$ ,  $p = .59$ ). Instead, both practice conditions boasted a main effect of strategy. In support of H4a, those who practiced using attribute processing valued the outcome of their choice more when they later used an attribute processing strategy ( $M = \$37.68$ ,  $SD = 9.30$ ) than when they later used an alternative processing strategy ( $M = \$30.81$ ,  $SD = 7.92$ ,  $F_{(1, 209)} = 11.47$ ,  $p < .01$ ). Moreover, in support of H4b, those who practiced using alternative processing were willing to pay more money for their chosen product when they employed an alternative processing strategy to choose it ( $M = \$37.70$ ,  $SD = 8.81$ ) than when they employed an attribute processing strategy to choose it ( $M = \$31.47$ ,  $SD = 7.93$ ,  $F_{(1, 209)} = 9.66$ ,  $p < .01$ ). There was no main effect of regulatory focus in either the attribute practice condition ( $F_{(1, 209)} = .018$ ,  $p = .89$ ) or the attitude practice condition ( $F_{(1, 209)} = .44$ ,  $p = .51$ ).

Analyses of ease of processing as the dependent variable produced similar results. In particular, there was a significant three-way interaction ( $F_{(2, 209)} = 5.10$ ,  $p < .01$ ) suggesting a differential effect of regulatory fit across the practice conditions. Analysis of the no practice condition revealed a significant regulatory focus  $\times$  strategy interaction ( $F_{(1, 209)} = 13.96$ ,  $p < .01$ ). Attribute processing was experienced with greater ease under prevention focus ( $M = 3.11$ ,  $SD = .94$ ) than under promotion focus ( $M = 3.83$ ,  $SD = 1.10$ ), although the difference did not reach statistical significance ( $F_{(1, 209)} = 3.47$ ,  $p = .06$ ). In

contrast, alternative processing was experienced with significantly greater ease under promotion focus ( $M = 3.00$ ,  $SD = 1.00$ ) than under prevention focus ( $M = 4.21$ ,  $SD = 1.03$ ,  $F_{(1, 209)} = 11.64$ ,  $p < .01$ ). Furthermore, promotion-focused participants experienced less difficulty in making their decision when they used an alternative processing strategy than when they used an attribute processing strategy ( $M = 3.00$  versus  $M = 3.83$ ,  $F_{(1, 209)} = 5.88$ ,  $p = .02$ ). In contrast, prevention-focused participants experienced greater ease in making their decision when adopting an attribute processing strategy than when they used an alternative processing strategy ( $M = 3.11$  versus  $M = 4.21$ ,  $F_{(1, 209)} = 8.25$ ,  $p < .01$ ).

Results from the practice conditions showed that the only significant effects are the main effects of strategy. Respondents in the attribute practice condition experienced greater ease of processing when the focal task involved attribute processing ( $M = 2.59$ ,  $SD = 1.01$ ) than when it involved alternative processing ( $M = 3.50$ ,  $SD = .94$ ,  $F_{(1, 209)} = 14.44$ ,  $p < .01$ ). Those in the alternative practice condition experienced greater ease of processing when the focal choice involved alternative processing ( $M = 2.59$ ,  $SD = .96$ ) than attribute processing ( $M = 3.53$ ,  $SD = 1.03$ ,  $F_{(1, 209)} = 15.88$ ,  $p < .01$ ).

To formally test the hypothesis that the observed effects on monetary value are mediated by ease of processing (H4c), we conducted separate mediation analyses in each practice condition. In the no practice condition, a Sobel test confirmed that ease of processing mediated the effect of regulatory fit on monetary value. ( $z = 3.09$ ,  $p < .01$ ). When we added ease of processing to a model that predicted monetary value, the effect of regulatory fit became insignificant ( $p = .26$ ), suggesting complete mediation. Sobel tests also confirmed that the effect of decision strategy on monetary value was mediated by ease of processing in both the attribute practice condition ( $z = -3.63$ ,  $p < .01$ ) and the attitude practice condition ( $z = 3.63$ ,  $p < .01$ ). Furthermore, the mediation was complete in both cases. Adding ease of processing to a model that predicted monetary value rendered the effect of strategy insignificant ( $p = .57$  and  $p = .65$ ) respectively.

In sum, Study 3 confirmed Study 2's findings that the fit between processing strategy and regulatory focus can influence the perceived value of a chosen option, and that this effect is mediated by ease of processing. Study 3 also showed that using a previously practiced strategy feels easier and leads to higher perceived value than using an unpracticed strategy, even if the unpracticed strategy happens to fit the consumer's regulatory focus. These findings suggest that the feeling right experience produced by regulatory fit can be quite fleeting, and that it was easily overridden by a feeling right experience arising from practice.

## General discussion

This research examined the consequences of engaging in attribute versus alternative processing. More specifically, it showed, for the first time, that whether attribute or alternative processing is used can have a major impact on the value that consumers assign to a chosen product. Building on regulatory focus and fit theories (Higgins, 1997, 2000), we first demonstrated that attribute processing better fits a prevention orientation, whereas alternative processing better fits a promotion orientation. We then showed that a decision made using a regulatory fitting strategy was generally experienced with greater ease than a decision made using a non-fitting strategy. This enhanced ease of processing, in turn, resulted in higher levels of decision satisfaction and perceived outcome value. We also found that using a previously practiced strategy feels easier and leads to higher perceived value than using an unpracticed strategy, even when the unpracticed strategy fits the consumer's regulatory focus.

These findings add to the current knowledge by highlighting an important boundary condition of the regulatory fit effects. In addition, our results contribute to the clarification of the mechanisms underlying the fit effects. It appears that a decision made using a regulatory fitting strategy feels right because it is generally experienced with greater ease than a decision made using a non-fitting strategy. However, the feeling right experience produced by regulatory fit is quite fleeting, and can easily be overridden by a feeling right experience arising from a more enduring source such as practice. Though our data are highly consistent with this interpretation, we next explore some potential alternative explanations.

One important limitation of this research relates to our operationalization of attribute versus alternative processing. We justified the use of presentation format as a valid proxy measure of processing strategy on the basis of prior research that showed a strong association between presentation format and processing strategy (e.g., Russo & Doshier, 1983; Bettman & Kakkar, 1977). However, we recognize that true process measures such as a comparison of information search patterns (Payne et al., 1993) or think aloud protocols (Bettman & Park, 1980) may provide more direct evidence of the fit between regulatory focus and attribute versus alternative processing. Further evidence of this fit could also be obtained by demonstrating that information presented in an attribute format would lead to greater relative activation of the prevention regulatory system, whereas

information presented in an alternative format would lead to greater relative activation of the promotion system.

At this point, it is also important to stress that the idea of fit implies that attribute processing is more compatible with a prevention orientation than a promotion orientation, and that the opposite is true for alternative processing. Fit, however, does not imply that prevention-focused individuals should favor attribute processing all the time, nor that promotion-focused individuals should favor alternative processing all the time. One might argue, for instance, that promotion-focused consumers who are more sensitive to the presence of dominant options (Murali, Bockenholt, & Laroche, 2007), should prefer attribute processing over alternative processing because attribute processing is more effective at detecting dominance (Russo & Doshier, 1983). However, dominance may not be the only, nor the most important, feature sought by promotion-focused consumers. Our results suggest that the opportunity for quick, heuristic-based evaluations makes alternative processing more attractive for this group. It is possible that if promotion-focused individuals were forced to use compensatory decision strategies (which would highlight the presence of dominance), they would display a greater preference for attribute processing. Future research would greatly benefit from attempting to disentangle the effect of compensatory versus non-compensatory strategies from that of attribute versus alternative processing.

The moderating effect of practice found in Study 3 might also be subject to alternative interpretations. One possible explanation is that regulatory fit only affects value when the task is strategically ambiguous, which is not the case when a particular strategy has been practiced. This would be consistent with the notion that feeling right from regulatory fit is a subjective feeling, and subjective feelings are more informative when the target is ambiguous (Bakamitsos, 2006; Gorn, Pham, & Sin, 2001). While plausible, this interpretation is inconsistent with our data, which show that subjective feelings of ease completely mediate the effects on value both when the decision strategy is ambiguous (no practice) and when it is unambiguous (practice conditions).

A potentially fruitful avenue for future research would be to examine whether prevention fit is qualitatively different from promotion fit. A close look at our data from Studies 2 and 3 (no practice) reveals that the simple effects of processing strategies were stronger in the prevention condition than in the promotion condition. In other words, prevention fit leads to a greater increase in perceived value than promotion fit. This unanticipated result may have to do with the product category used in these studies (Helmets), which is more related to a prevention concern (protection) than a promotion concern. It is possible that the transfer of value from fit to outcome is greater when the outcome is consistent versus inconsistent with one's regulatory focus.

Finally, our results offer broader implications for fluency research. The existing fluency literature suggests that ease of processing is hedonically marked (Winkielman & Cacioppo, 2001). Ease of processing is presumed to elicit positive affect, which can transfer to subsequent evaluative judgments. Accordingly, processing fluency has been shown to increase positive evaluations (Reber, Schwarz, & Winkielman, 2004; Schwarz,



2004). Regulatory fit theory, however, posits that fit should increase the extremity of evaluations regardless of their valence. That is, initially negative reactions are expected to produce more negative evaluations under regulatory fit (Avnet & Higgins, 2006). If regulatory fit operates through ease of processing, as suggested in this paper and in Lee and Aaker (2004), then it is conceivable that the fluency–evaluation relationship may not be as simple as previously thought. There could be instances where fluency experiences resulting from sources other than regulatory fit would produce an “it just feels right” sensation instead of eliciting positive affect. In these situations, fluency should lead to more extreme evaluations regardless of valence. Future research can easily test this conjecture by examining the effect of fluency on evaluations of undesirable stimuli.

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