

# Exploring the Cognitive Mechanism that Underlies Regulatory Focus Effects

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Much research has explained regulatory focus effects via the alternative psychological states (eagerness vs. vigilance) people experience when they adopt different regulatory foci. This article identifies for the first time the cognitive mechanism that underlies regulatory focus effects. We propose that promotion-focus individuals engage in relational elaboration, which entails identifying commonalities or abstract relationships among disparate items. In contrast, prevention-focus individuals engage in item-specific elaboration, which involves focusing on specific attributes of each item independent of others. Results support our theorizing by demonstrating that promotion-focus (prevention-focus) individuals exhibit enhanced performance on tasks that require relational (item-specific) elaboration.

Consider two current ads. One, for a Chase credit card, leads with the headline “Your Choice. Your Chase.” Subsequent ad copy continues by seizing on connections between several dissimilar items (e.g., “Shoes to go with skirt. Skirt to go with blouse. Blouse to go with lipstick. Lipstick to go with Jack.”) and then ends with several fairly abstract benefits of the card, such as flexibility of pay date, your reward, and how to pay. A second ad for a Visa card bears the headline “Layers of Protection.” Here the copy follows up by delineating considerably detailed, security-related features, namely, zero liability for fraudulent use, constant purchase monitoring for suspicious activity, and online identity confirmation to prevent identity theft.

While the preceding ads differ in many ways, we suggest that two differences may be especially noteworthy. The Chase card ad begins with a headline that encourages a decidedly promotion regulatory focus (i.e., a focus on attaining positive outcomes; Higgins 1987) and continues with copy that represents relational elaboration, for it identifies both many between-item relationships and several

high-order, abstract product benefits (Hunt and Einstein 1981). The Visa ad, on the other hand, begins with a prevention focus (i.e., a focus on avoiding negative outcomes; Higgins 1987) and follows with copy that prompts item-specific elaboration, that is, the identification of a few specific and fairly concrete product features (Hunt and Einstein 1981).

These observations may be telling, and indeed they correspond with the central propositions advanced in this article. This article aims to identify for the first time the cognitive (as opposed to a psychological state) mechanism that may account for the different responses produced by people who adopt promotion versus prevention regulatory foci. We propose that such differences may obtain because individuals who adopt a promotion focus engage predominately in relational elaboration, whereas those adopting a prevention focus employ primarily item-specific elaboration. To begin, we develop our thesis by briefly reviewing the literature that provides the basis for such theorizing about the relationship between regulatory focus and type of elaboration.

## REGULATORY FOCUS AND TYPE OF ELABORATION

Regulatory focus theory suggests that people can attain their goals in two different ways, each involving the use of an alternative regulatory focus (Higgins 1987). Individuals who pursue a promotion focus perceive their goals as hopes and aspirations, and thus they are sensitive to the presence or absence of such positive outcomes. Therefore, their natural tendency is to approach matches to their goals. In contrast, individuals who adopt a prevention focus perceive the same goals as duties and obligations, making them sensitive

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to the absence or presence of negative outcomes (e.g., failure to meet their duties). Therefore, their natural tendency is to avoid mismatches to their goals. Importantly, research attests that the regulatory focus a person assumes in a given instance can be the result of either chronic tendencies or situational influences that temporarily encourage a particular focus (Higgins et al. 1994).

Individuals who embrace alternative regulatory foci manifest different psychological states during the process of goal attainment (Crowe and Higgins 1997). Because promotion-focus individuals strive for matches to their goals, they have been shown to be in a state of eagerness to include as many options as possible that may help them achieve their goals. However, because prevention-focus individuals concentrate on avoiding mismatches to their goals, they are in a state of vigilance that entails considering more restrictively only clearly appropriate options.

Indeed, evidence of these eagerness versus vigilance states has been shown in a variety of contexts, such as those involving creative endeavors and hypothesis generation. In contexts involving creative cognition, individuals with a promotion focus versus a prevention focus have been found to generate more dimensions shared by diverse items (Crowe and Higgins 1997) and to engage in more exploratory processing, resulting in more creative ideas (Friedman and Förster 2001). In contexts involving hypothesis generation where stimuli are ambiguous, individuals with a promotion focus generated many hypotheses about the stimuli's identity, apparently eager to embrace an optimal hypothesis; individuals with a prevention focus generated only a few hypotheses, vigilantly limiting the prospect of an erroneous hypothesis (Lieberman et al. 2001).

Although the preceding findings align the adoption of a promotion focus and a prevention focus with eagerness and vigilance psychological states, they are silent about the cognitive mechanism that is responsible for the observed outcomes. In other words, by exactly what cognitive process do promotion-focus (prevention-focus) individuals eagerly (vigilantly) pursue their goals? We propose that they may do so by engaging in either relational or item-specific elaboration. Relational elaboration involves integrating and often abstracting shared aspects (e.g., themes) among dissimilar pieces of information (Hunt and Einstein 1981; Johnson 1984). In contrast, item-specific elaboration involves generating precise and context-specific (i.e., concrete) associations to each individual item in isolation of others (Hunt and Einstein 1981).

Why might such regulatory foci induce alternative types of elaboration? Recall that individuals with a promotion (prevention) focus concentrate on the presence or absence of positive (negative) outcomes. Cognitive tuning theory (Friedman and Förster 2002) suggests that focusing on positive states, as promotion-focus individuals do, informs them that their current environment is benign and requires no particular action. Thus, such individuals are likely to behave in an exploratory manner, which may entail attending freely to relationships among items and noting higher-level ab-

stractions. In contrast, focusing on negative states, as prevention-focus individuals do, informs them that the environment is problematic and that specific action is needed to rectify this. Thus, they assess matters carefully in precise detail, presumably employing item-specific elaboration that entails attending to particulars.

Importantly, the use of relational versus item-specific elaboration may explain many of the outcomes that promotion-focus and prevention-focus individuals have manifested previously. Because relational elaboration involves generating overarching connections or abstractions that link multiple pieces of data, it can account for promotion-focus individuals' earlier noted generation of more dimensions shared by diverse items (Crowe and Higgins 1997); more hypotheses about an object's identity, which are culled via feature integration (Lieberman et al. 2001); and more far-ranging abstract ideas that can heighten creativity (Förster, Friedman, and Liberman 2004; Friedman and Förster 2001). In contrast, because item-specific elaboration involves encoding precise, context-specific associations to each independent item, it can account for prevention-focus individuals' identification of fewer dimensions shared by disparate items (Crowe and Higgins 1997), fewer hypotheses about an object's identity (Lieberman et al. 2001), and fewer creative ideas, owing to the emphasis on precise, nondistal associations (Friedman and Förster 2001). Figure 1 outlines the cognitive mechanism posited to underlie many regulatory focus-induced effects. Experiment 1 begins with a test of this mechanism.

## EXPERIMENT 1

Experiment 1 sought to provide as unassailable evidence as possible of whether a promotion (prevention) focus elicits predominately relational (item-specific) processing. This was accomplished by assessing two measures shown repeatedly to be reliable indicators of such processing. Countless studies (Hunt and Seta 1984) have established that increased clustering (i.e., consecutive reporting) of same-category items during free recall is a reliable indicator of relational processing, for such clustering signifies that relationships have been discerned among such items. On the other hand, increased recall of items during cued recall is an established and valid indicator of item-specific processing. This is so because, once a general category is cued and thus rendered accessible, "successful recall depends on precise reconstruction of particular items" (Hunt and Seta 1984, 457). Thus, if our theorizing is accurate, promotion-focus versus prevention-focus individuals should perform better on recall clustering during free recall, whereas prevention-focus versus promotion-focus individuals should excel on (cued) item recall.

### Method

*Stimuli.* A list was compiled of 36 items (i.e., words), with six from each of six different categories (e.g., occupations, musical instruments). All items and categories came

FIGURE 1

COGNITIVE MECHANISM PROPOSED TO UNDERLIE REGULATORY FOCUS EFFECTS

Regulatory Focus	Type of Processing Induced	Outcome
Promotion Focus	→ Relational →	Excel on tasks requiring relational elaboration (e.g., recall clustering, generation of ad themes when ads exhibit higher levels of thematic ambiguity)
Prevention Focus	→ Item-specific →	Excel on tasks requiring item-specific elaboration (e.g., cued recall, apprehension of specific product features when ads exhibit lower levels of thematic ambiguity)

from Battig and Montague (1969). Items were listed in a random order, but no consecutive items belonged to the same category.

*Procedure.* To begin, 36 respondents at the University of Minnesota received materials intended to vary their regulatory focus (Higgins et al. 1994). Individuals in the promotion focus condition were asked to consider their current hopes and aspirations and how these may have changed as they grew up. Those in the prevention focus condition considered their current duties and obligations and how they may have changed over time. Next, all respondents were given the multicategory list of 36 items to examine carefully and were told that they would make use of this later. After completing extensive filler questions to clear memory, respondents received a free recall task in which, without any aids, they recorded as many of the 36 items as they could. Then, in a cued recall task, respondents were presented with the names of each of the six categories represented in the list. They were to use them to facilitate their recall of all specific items from each cued category.

**Results**

Clustering in respondents’ free recall of the multicategory items was assessed using adjusted ratio of clustering (ARC; Hunt and Einstein 1981). The ARC scores range from 1.0 to -1.0, where 1.0 indicates perfect clustering and 0 indicates chance clustering. In addition, cued recall was assessed by calculating the average number of items that individuals recalled per each cued category.

Results obtained on both of these measures supported the thesis that individuals with a promotion (prevention) focus indeed engage in greater relational (item-specific) elaboration. In the free recall task, promotion-focus versus preven-

tion-focus individuals exhibited greater recall clustering (i.e., higher ARC scores), indicating the use of greater relational elaboration ( $M = .91$  vs.  $M = .66$ ;  $F(1, 34) = 5.03, p < .03$ ). In contrast, prevention-focus versus promotion-focus individuals recalled more items per category in the cued recall task, indicating the use of greater item-specific elaboration ( $M = 3.89$  vs.  $M = 3.28$ ;  $F(1, 34) = 4.04, p < .05$ ).

**EXPERIMENT 2**

Experiment 1 offers compelling evidence that individuals who adopt a promotion (prevention) focus engage primarily in relational (item-specific) elaboration. Still, the study employed artificial stimuli and procedures, and it provided evidence that relied only on memory measures. Experiment 2 addressed these issues using a more consumer-relevant ad context.

To enable differences to be discerned in the degree to which people used relational and item-specific processing, the thematic ambiguity of the visuals in the ad was manipulated. In the high thematic ambiguity condition, the ad displayed images with no obvious relationship with each other and the focal product, though with ample effort assorted themes could be fashioned. Hence, for this ad substantial relational elaboration would be required for successful theme identification, yet attempts to identify specific product features via item-specific processing would likely be frustrated by the seemingly unrelated, potentially distracting nonthematic visuals. In contrast, in the low thematic ambiguity condition, the ad’s visuals related directly to each other and the product. Hence, for this ad theme identification was obvious even if minimal relational processing was used and, given the absence of highly ambiguously related dis-

tracting visuals, the ad also enabled people to readily apprehend the product's (item-) specific features.

Our theory implies that promotion-focus (prevention-focus) individuals engage predominately in relational (item-specific) elaboration, suggesting that the ads should be processed differently by these two types of individuals. Promotion-focus individuals, who are proposed to favor relational processing, should be up to the heightened challenge of ad theme identification that exists when the ad is high, not low, in thematic ambiguity. Thus, promotion-focus individuals were expected to generate more ad themes that facilitated ad comprehension and consequently produce more favorable cognitions and product evaluations when the ad was high versus low in thematic ambiguity. On the other hand, prevention-focus individuals are posited to favor item-specific processing and to deploy minimal relational elaboration. Owing to their use of minimal relational elaboration, they should identify a small and comparable number of ad themes, regardless of the ad's degree of thematic ambiguity. But their dominant quest to pursue item-specific elaboration of the product's specific features may be frustrated by the distracting visuals in the high versus low thematically ambiguous ad. Hence, we reason that prevention-focus individuals may manifest this frustration that impedes item-specific processing by generating more thoughts that complain about the high versus low ambiguity ad's inclusion of excessive information. Finally, because prevention-focus individuals place a priority on item-specific processing and the low versus high thematically ambiguous ad should better enable such individuals to apprehend the product's (item-) specific features, prevention-focus individuals are expected to produce more favorable cognitions and product evaluations when the ad is low versus high in thematic ambiguity. To summarize the preceding logic, we anticipate the following two-way interactions of regulatory focus and thematic ad ambiguity:

- H1:** Individuals who adopt a promotion focus should report more ad themes, more favorable product evaluations, more net positive thoughts, but an equal and small number of complaints about an excess of ad information when the thematic ambiguity of the ad is high versus low. However, individuals who adopt a prevention focus should report a small comparable number of ad themes, more favorable product evaluations, more net positive thoughts, but fewer complaints about an excess of ad information when the thematic ambiguity of the ad is low versus high.

## Method

*Stimuli.* Print ads were developed for a camera. Although the target ad always presented the same ad claims, the thematic ambiguity of the ad pictures was manipulated. In the high thematic ambiguity condition, the ad displayed non-obviously-related visuals (e.g., a photo of the camera

was surrounded by images of a road sign, a man riding a bicycle, a dining table, etc.) that only loosely implied a number of plausible overarching themes (e.g., travel, adventure, leisure activities). In the low thematic ambiguity condition, the ad visuals related directly to each other (e.g., the photos showed an unraveled roll of film, the camera, a zoom lens, etc.), suggesting an obvious theme (i.e., photography). These ads appear in the appendix.

A second manipulated factor was the regulatory focus that individuals adopted. This was induced by varying whether the ad headline emphasized achievement or security concerns. The promotion (prevention) focus headline encouraged an achievement (security) goal with the line "Capture Those Important Moments Now!" ("Don't Let Those Important Moments Slip By!"). In a pretest, 26 individuals verified that the former versus the latter headline was more promotion focused ( $M = 5.46$  vs.  $M = 3.92$ ;  $F(1, 24) = 7.67$ ,  $p < .01$ ).

*Procedure.* A total of 107 students at University of Minnesota participated in the study in small groups. They first viewed the target ad. This was followed by a thought listing and a product evaluation task, which on five seven-point items assessed the product's appeal, quality, reliability, trustworthiness, and consideration worthiness. These items were averaged to form an evaluation index ( $\alpha = .90$ ). Finally, respondents were asked to report as many themes as they felt were conveyed by the ad visuals.

## Results

All data were analyzed as a 2 (regulatory focus: promotion vs. prevention)  $\times$  2 (ad thematic ambiguity: high vs. low) between-subjects design. Treatment means are reported in table 1.

The anticipated two-way interactions emerged on the total number of ad themes produced ( $F(1, 103) = 4.86$ ,  $p < .03$ ), product evaluations ( $F(1, 103) = 14.49$ ,  $p < .001$ ), net positive thoughts ( $F(1, 103) = 17.33$ ,  $p < .001$ ), and thoughts complaining about the ad's inclusion of too much information ( $F(1, 103) = 4.06$ ,  $p < .05$ ). Further, planned contrasts on all of these measures supported our specific hypotheses. When respondents were encouraged to adopt a promotion focus and therefore employed predominately relational elaboration, they produced more ad themes ( $F(1, 103) = 18.23$ ,  $p < .001$ ), more favorable product evaluations ( $F(1, 103) = 10.62$ ,  $p < .01$ ), more net positive thoughts ( $F(1, 103) = 7.57$ ,  $p < .01$ ) but comparable and relatively few complaints about the amount of ad information ( $F < 1$ ) when the ad's thematic ambiguity was high versus low. However, when respondents were prompted to adopt a prevention focus and employed primarily item-specific elaboration, they produced comparable and low quantities of ad themes ( $F(1, 103) = 1.64$ ,  $p > .21$ ), more favorable evaluations ( $F(1, 103) = 4.40$ ,  $p < .05$ ), more net positive thoughts ( $F(1, 103) = 9.90$ ,  $p < .01$ ) but fewer thoughts about an excess of ad data ( $F(1, 103) = 7.22$ ,

**TABLE 1**  
TREATMENT MEANS AND STANDARD DEVIATIONS FOR EXPERIMENT 2

	Promotion focus		Prevention focus	
	High thematic ambiguity	Low thematic ambiguity	High thematic ambiguity	Low thematic ambiguity
Product evaluations	5.27 (.55)	4.45 (1.01)	4.38 (1.07)	4.90 (.88)
Net positive thoughts	2.00 (2.74)	-.42 (3.14)	-1.71 (3.80)	.93 (2.73)
Thoughts about too much ad information	.12 (.33)	.15 (.46)	.46 (.88)	.07 (.26)
Number of ad themes identified	2.44 (1.21)	1.19 (1.20)	1.61 (1.07)	1.25 (.75)
Cell size	25	26	28	28

$p < .01$ ) when the ad's thematic ambiguity was low rather than high.<sup>1</sup>

## GENERAL DISCUSSION

Results from this research contribute to extant theory by identifying a cognitive mechanism that clarifies how regulatory focus exerts its effects. Individuals who adopt a promotion (prevention) focus engage predominately in relational (item-specific) elaboration, which prompts integrative (item-specific) ideation. Experiment 1 demonstrated that different regulatory foci can induce these types of elaboration by assessing well-established indicators of type of elaboration (i.e., recall clustering and cued recall). Experiment 2 showed that promotion-focus individuals, due to their emphasis on relational elaboration and its powers of integration, better comprehended and responded more favorably to ambiguously related ad visuals. Yet, prevention-focus individuals, owing to their prevailing use of item-specific elaboration and its focus on the particulars of data, responded more favorably to unambiguously related ad visuals.

This work also contributes to the type of elaboration literature by showing that regulatory focus is an antecedent of type of elaboration. As such, it identifies a new, alternative means of varying the type of elaboration people use (i.e.,

altering their regulatory focus). Further, the relationship that this article highlights between type of elaboration and the ability to engage in abstract relational ideation (e.g., identify nonobvious ad themes) suggests that type of elaboration might explain how other factors that have been shown to affect such abstraction actually do so. These include variables such as temporal distance (Liberman, Sagristano, and Trope 2002) and approach versus avoidance states (Friedman and Förster 2005).

Finally, some readers may question whether type of elaboration is unique from other well-known processing dichotomies (e.g., heuristic vs. systematic, category-based vs. piecemeal, holistic vs. analytic processing), wondering whether these dichotomies also might explain regulatory focus effects. While these constructs share some surface similarities with type of elaboration, we believe that the latter is distinct. To clarify this, note that the other processing modes that appear to be similar to relational processing make no claim that people focus actively on discerning between-item relationships. Instead, heuristic processing proposes simply that they attend to highly accessible cues (Chaiken 1980), category-based processing claims that they concentrate on and use associations related to an object's taxonomic category (Fiske, Lin, and Neuberg 1999), and holistic processing refers to the perception that an array of items constitutes a continuous whole (vs. a constellation of individual parts; Nisbett 2003). Thus, these other processing dichotomies would not lead to our predictions, which is especially apparent in the case of recall clustering and cued item recall (as in experiment 1). Nonetheless, future research should explore more fully the distinctions among these processing modes.

<sup>1</sup>Mediation analysis also revealed results consistent with our theorizing. The number of ad themes identified, an indicator of relational elaboration, mediated the effect of the ad's thematic ambiguity on promotion-focus individuals' product evaluations. Further, thoughts complaining about an overabundance of ad information, an indicator of item-specific processing, mediated the effect of the ad's thematic ambiguity on prevention-focus individuals' evaluations.

**APPENDIX****FIGURE A1**

EXPERIMENT 2 AD: PREVENTION FOCUS HEADLINE AND LOW THEMATIC AMBIGUITY

## Capture Those Important Moments Now! Bosin Camera, Making Special Memories.



The Technology and Style to Match Your Needs.

- Advanced autofocus system
- Exceptional resolution
- Unsurpassed reliability
- Self-timer
- Highly versatile zoom lens
- Lightweight
- Comes with durable carrying case

**Bosin Camera**

NOTE.—A color version of this figure is available online.

FIGURE A2

EXPERIMENT 2 AD: PROMOTION FOCUS HEADLINE AND HIGH THEMATIC AMBIGUITY

## Don't Let Those Important Moments Slip By! Bosin Camera, For Those Special Memories.



The Technology and Style to Match Your Needs.

- Advanced autofocus system • Exceptional resolution
- Unsurpassed reliability • Self-timer
- Highly versatile zoom lens • Lightweight
- Comes with durable carrying case

**Bosin Camera**

NOTE.—A color version of this figure is available online.

### REFERENCES

- Battig, William F. and William E. Montague (1969), "Category Norms for Verbal Items in 56 Categories: A Replication and Extension of the Connecticut Category Norms," *Journal of Experimental Psychology Monograph*, 80 (June), pt. 2, 1–46.
- Chaiken, Shelly (1980), "Heuristic versus Systematic Information Processing and Use of Source versus Message Cues in Persuasion," *Journal of Personality and Social Psychology*, 39 (November), 752–66.
- Crowe, Ellen, and Higgins, E. Tory (1997), "Regulatory Focus and Strategic Inclinations: Promotion and Prevention in Decision-Making," *Organizational Behavior and Human Decision Processes*, 69 (February), 117–32.
- Fiske, Susan T., Monica Lin, and Steven L. Neberg (1999), "The Continuum Model: Ten Years Later," in *Dual-Process Theories in Social Psychology*, ed. Shelly Chaiken and Yaacov Trope, New York: Guilford, 231–54.
- Förster, Jens, Ronald S. Friedman, and Nira Liberman (2004), "Temporal Construal Effects on Abstract and Concrete Thinking: Consequences for Insight and Creative Cognition," *Journal of Personality and Social Psychology*, 87 (August), 177–89.
- Friedman, Ronald S. and Jens Förster (2001), "The Effect of Pro-

- motion and Prevention Cues on Creativity," *Journal of Personality and Social Psychology*, 81 (December), 1001–13.
- (2002), "The Influence of Approach and Avoidance Motor Actions on Creative Cognition," *Journal of Experimental Social Psychology*, 38 (January), 41–55.
- (2005), "Effects of Motivational Cues on Perceptual Asymmetry: Implications for Creativity and Analytical Problem Solving," *Journal of Personality and Social Psychology*, 88 (February), 263–75.
- Higgins, E. Tory (1987), "Self-Discrepancy: A Theory Relating Self and Affect," *Psychological Review*, 94 (July), 319–40.
- Higgins, E. Tory, Christopher J. Roney, Ellen Crowe, and Charles Hymes (1994), "Ideal versus Ought Predilections for Approach and Avoidance: Distinct Self-Regulatory System," *Journal of Personality and Social Psychology*, 66 (February), 276–86.
- Hunt, R. Reed and Gilles O. Einstein (1981), "Relational and Item-Specific Information in Memory," *Journal of Verbal Learning and Verbal Behavior*, 20 (October), 497–514.
- Hunt, R. Reed and Catherine E. Seta (1984), "Category Size Effects in Recall: The Roles of Relational and Individual Item Information," *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 10 (July), 454–64.
- Johnson, Michael D. (1984), "Consumer Choice Strategies for Comparing Noncomparable Alternatives," *Journal of Consumer Research*, 11 (December), 741–53.
- Liberman, Nira, Daniel C. Molden, Lorraine Chen Idson, and E. Tory Higgins (2001), "Promotion and Prevention Focus on Alternative Hypotheses: Implications for Attributional Functions," *Journal of Personality and Social Psychology*, 80 (January), 5–18.
- Liberman, Nira, Michael D. Sagristano, and Yaacov Trope (2002), "The Effect of Temporal Distance on Level of Mental Construal," *Journal of Experimental Social Psychology*, 38 (November), 523–34.
- Nisbett, Richard E. (2003), *The Geography of Thought*, New York: Free Press.