

Field Testing of Regulatory Focus Theory

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Three field experiments using the offensive and defensive characteristics of baseball games to manipulate promotion and prevention focus of baseball audiences were conducted to test hypotheses of regulatory focus theory (Higgins, 1997). The results indicate that people with a promotion and prevention focus differed in their emotions (Study 1), motivation, openness to change (Study 2), and cognition (Study 3). Promotion focus triggered more cheerfulness–dejection emotions, eagerness-related motivation, openness to change, and creative thinking in problem resolving; whereas prevention focus evoked more quiescence–agitation emotions, vigilance-related motivation, preference for stability, and less creativity. In general, the results indicate that regulatory focus may result in various psychological consequences in a real-world setting.

Do people's distinct motivations in terms of their desired end state play an important role in their cognition, emotions, and behavior intentions in real life? The present study is designed to answer these questions.

Based on two fundamental needs—nurturance and security—regulatory focus theory (Higgins, 1997) has proposed two distinct means of self-regulation, termed promotion focus and prevention focus, which people use to achieve a desired end-state. *Promotion focus* emphasizes the pursuit of gains (or the avoidance of nongains), while *prevention focus* emphasizes the avoidance of losses (or the pursuit of nonlosses). According to regulatory focus theory, people motivated by either a promotion focus or a prevention

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focus differ in many ways. People in a promotion focus are more sensitive to positive outcomes, have stronger nurturance needs, care more about their aspirations and accomplishments, pay more attention to the results of gain/nongain, utilize approach as a strategic means, and easily yield cheerfulness–dejection emotions; while people in a prevention focus are more sensitive to negative outcomes, have stronger security needs, care more about their responsibilities, pay more attention to the results of loss/nonloss, utilize avoidance as a strategic means, and easily yield quiescence–agitation emotions (Higgins, 1997).

A number of studies have shown the validity of regulatory focus theory. Empirical studies have shown that people's regulatory focus can result in various psychological consequences, including emotions (Higgins, Shah, & Friedman, 1997), openness to change (Liberman, Idson, Camacho, & Higgins, 1999), value choices (Markman & Brendl, 2000), sensitivity to positive–negative outcomes (Brendl, Higgins, & Lemm, 1995), perceptions of in-group and out-group (Shah, Brazy, & Higgins, 2004), illusion of control (Langens, 2007), decision-making behavior (Levine, Higgins, & Choi, 2000), and persuasion (Cesario, Grant & Higgins, 2004; Jain, Agrawal, & Maheswaran, 2006; Lee & Aaker, 2004). In addition, research has shown that when making judgments, the brain activities of individuals under promotion or prevention focus are different (Cunningham, Raye, & Johnson, 2005).

Most research on regulatory focus has been conducted in laboratory settings. For example, Shah et al. (2004) invoked subjects' promotion focus by giving them an extra credit first and informing them that "You will have the opportunity to earn another extra point. If your team wins, you will receive another extra credit point." In the same study, prevention-focus subjects were given two extra credits first and were notified that "You may lose an extra credit point. If your team wins, you will avoid losing one extra credit point." The results indicated that promotion-focus-induced subjects were more inclined to evaluate others by using cheerfulness-related dimensions, and utilized approach as a strategic means, while prevention-focus-induced subjects tended to evaluate others by using relaxation-related dimensions, and utilized non-avoidance as a strategic means.

These results are consistent with the predictions of regulatory focus theory. Similar procedures inducing regulatory focus have been used in other studies (e.g., Levine et al., 2000; Liberman et al., 1999). Other ways of manipulating regulatory focus in a laboratory include message framing (e.g., Cesario et al., 2004; Lee & Aaker, 2004), priming subjective history of promotion or prevention success (e.g., Higgins et al., 2001), and priming ideal–ought self (e.g., Higgins et al., 1997; Shah & Higgins, 2001).

Although considerable attention has been spent proving the effects of regulatory focus in the laboratory, little research (as far as the authors know)

has experimentally examined the regulatory focus effect in more naturalistic settings. The current study makes up for this deficiency. To examine evidence regarding the effect of regulatory focus in real life, we conducted three field experiments. Specifically, the offensive and defensive characteristics of baseball games were used as a natural way to manipulate people's promotion or prevention focus.

According to Wikipedia (<http://en.wikipedia.org/wiki/Baseball>), *baseball* is a sport played between two teams. The goal is to score runs by hitting a thrown ball with a bat and touching a series of four bases arranged at the corners of a 90-foot square. Players on one team (the batting team) take turns hitting against the pitcher of the other team (the fielding team), which tries to stop them from scoring runs by getting hitters out in any of several ways. The teams switch between batting (offense) and fielding (defense) whenever the fielding team records three outs, which constitutes a half inning. One offense and one defense half inning constitute an inning; nine innings make up a professional game. The team with the most runs at the end of the game wins. Therefore, when playing the game, the team on offense aims to score (a promotion focus) and the team on defense aims to not lose any points (a prevention focus). Because of the nature of the game, each team takes turns to offend or defend in each half inning. This became a natural manipulation of promotion and prevention focus for us to examine the consequences.

Study 1 is designed to test the hypothesis that a subtle, real-world reminder of distinct regulatory concern will affect individuals' emotions. Study 2 is designed to examine whether regulatory focus will affect individuals' motivational states and openness to change in a real-world setting. Finally, Study 3 is designed to examine the effect of regulatory focus on individuals' cognitive function (i.e., problem-solving behavior) in a real-world setting.

Study 1

As described previously, the field setting of the first study was a baseball game. When playing baseball, the offense aims to score and the defense aims to not lose any points. Fans are similar: They want their supported team to score (not lose points) when on offense (defense). Thus, the psychological states of fans in a baseball game are almost identical to that of regulatory focus. Fans of offensive teams pay attention to the promotion focus, which emphasizes the pursuit of gains (or the avoidance of nongains); while fans of defensive teams pay attention to the prevention focus, which emphasizes the avoidance of losses (or the pursuit of nonlosses). Therefore, the offensive (defensive) characteristics of baseball games provide a natural way of

manipulating the promotion (prevention) focus. The present study used this field manipulation to explore whether regulatory focus effects would happen in the real-life setting.

It has been proposed that regulatory focus can affect emotion (Higgins, 1997). Since promotion focus involves attaining a goal concerned with obtaining the presence of positive outcomes or avoiding the absence of positive outcomes, people who attain a promotion goal successfully may experience emotions of cheerfulness (e.g., happy, satisfied), while those who fail to attain a promotion goal may experience emotions of dejection (e.g., disappointed, discouraged, low, sad). On the contrary, since prevention focus involves attaining a goal concerned with obtaining the absence of negative outcomes or avoiding the presence of negative outcomes, people who attain a prevention goal successfully may experience emotions of quiescence (e.g., calm, relaxed); while those who fail to attain a prevention goal may experience emotions of agitation (e.g., uneasy, tense). This proposition of distinctive emotions related to promotion and prevention focus has been supported by empirical research (e.g., Higgins et al., 1997; Shah & Higgins, 2001). Study 1 is designed to test whether a distinct regulatory focus can evoke different emotions in a real-life setting.

Method

Participants

Study participants were 90 people who were attending a Chinese Professional Baseball League (CPBL) game in Taiwan, without any monetary compensation. There were 13 individuals who indicated in questionnaires that they were not fans of either of the two competing teams, so they were dropped from the analysis. Thus, the valid sample included 77 participants (43 male, 34 female). The participants' mean age was 24.8 years ($SD = 6.8$). Of the participants, 44 were in the promotion group and the remaining 33 were in the prevention group. Chi-square and *t*-test analyses found no significant differences in terms of gender, educational level, or age between selected and dropped individuals.

Procedure

Two research assistants who were blind to the purpose of research were responsible for administration in the bleachers while the baseball game was being played. Participants were asked to complete a questionnaire in the

breaks immediately at the end of every half inning, when they were supposed to be at a state of either promotion focus or prevention focus. One of the assistants was responsible for administration of the home-team supporters, while the other was responsible for the visiting-team supporters who were sitting in a different section. The assistants changed their targets of administration at the end of every inning, to ensure that the effects of experimenters were balanced, in order to prevent any chance of confounding.

To control the quality of administration, no more than three participants were questioned during each half inning. Thus, one to three fans of the offensive team (i.e., promotion group) and one to three fans of the defensive team (i.e., prevention group) were questioned in every half inning of the game. This procedure constituted a between-subjects design of regulatory focus, with half of the participants completing the questionnaire under the condition of promotion focus (right after the half innings urging their teams to gain scores), and the other half of the participants completing the questionnaire under the condition of prevention focus (right after the half innings urging their teams to not lose scores). How data were collected in every half inning and their corresponding conditions are presented in Table 1.

Since everything that happened in the game was exactly the same for both the promotion group and the prevention group, and since the participants in the promotion group and the prevention group included fans of both the visiting team and the home team, the effects of both the game and the teams on the dependent variables were identical for both the promotion group and the prevention group. Furthermore, since the break time between every half inning could be short, to prevent participants from making absentminded responses as a result of being rushed, the questionnaire contained only a few items that most participants finished within 3 min.

Measure

We adopted the 12-item measure of emotional frequency that was used by Higgins et al. (1997). Participants rated their emotions on a 6-point scale ranging from 0 (*not at all*) to 5 (*totally match*). The questionnaire contained six items related to dejection–cheerfulness (*disappointed, discouraged, low, sad, happy, satisfied*) and six items related to agitation–quiescence (*agitated, on the edge, uneasy, tense, calm, relaxed*). Emotional frequency scores were calculated by summing the four dejection-related items and the two cheerfulness-related items (reverse-scored; Cronbach's $\alpha = .89$), as well as summing the four agitation-related items and the two quiescence-related items (reverse-scored; $\alpha = .81$), respectively.

Table 1

Research Design for the Current Study

	1 st inning		2 nd inning		3 rd inning		...
	Top half	Bottom half	Top half	Bottom half	Top half	Bottom half	
Home team	Offense (A1)	Defense (A1)	Offense (A2)	Defense (A2)	Offense (A1)	Defense (A1)	...
Visiting team	Defense (A2)	Offense (A2)	Defense (A1)	Offense (A1)	Defense (A2)	Offense (A2)	...

Note. A1 = Assistant 1; A2 = Assistant 2. Each team (Home or Visitor) played an offensive and a defensive half inning in one inning. One to three fans of each team were questioned immediately after the end of every half inning. The offensive (i.e., promotion focus) and defensive (i.e., prevention focus) states constitute the manipulation of regulatory focus as a between-subjects variable. The effects of teams (i.e., home or visiting team) and experimenters (i.e., Assistant 1 or Assistant 2) were not analyzed and balanced between offensive (i.e., promotion focus) and defensive (i.e., prevention focus), thus preventing them from confounding the effects of regulatory focus.

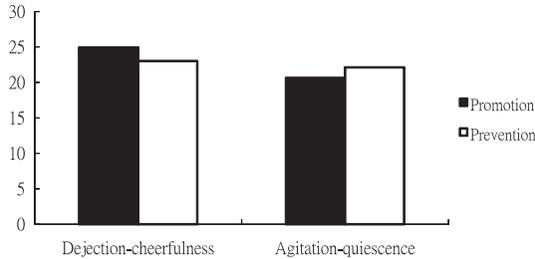


Figure 1. Interaction effects between regulatory focus and emotions.

Results

We used a 2×2 mixed-design ANOVA with regulatory focus (promotion vs. prevention) as the between-subjects variable and emotion (dejection–cheerfulness or agitation–quietescence) as the within-subjects variable. No significant main effect was found for regulatory focus. There was a significant main effect for emotions, $F(1, 70) = 11.90, p < .01, \eta^2 = .15$, such that the score related to dejection–cheerfulness ($M = 24.07, SD = 6.17$) was greater than the score related to agitation–quietescence ($M = 21.32, SD = 6.60$). An interaction effect between regulatory focus and emotions was found, $F(1, 70) = 5.05, p < .05, \eta^2 = .07$. The plot of this interaction is shown in Figure 1, and, as can be seen, the patterns of this interaction were consistent with the prediction of regulatory focus theory.

Simple main-effects analysis reveals no significant difference between the promotion and prevention groups in terms of emotion related to dejection–cheerfulness, $F(1, 70) = 2.49, ns$; or emotion related to agitation–quietescence, $F(1, 70) = 0.22, ns$. However, we found that for the promotion group, the emotion related to dejection–cheerfulness ($M = 17.44, SD = 0.77$) was significantly greater than the emotion related to agitation–quietescence ($M = 14.97, SD = 0.79$), $F(1, 70) = 14.00, p < .001, \eta^2 = .17$. For the prevention group, no such effect was found.

In sum, the patterns of interaction between regulatory focus and emotion were consistent with the regulatory focus theory prediction, but this effect was not as strong as that obtained during the laboratory study (e.g., Shah & Higgins, 2001). Also, the regulatory focus effects on field setting were stronger for the promotion group than for the prevention group.

Study 2

Study 2 tested regulatory focus theory with a more extensive set of dependent measures. According to Higgins (1997), a promotion focus is concerned

with advancement and growth; thereby the strategic inclination of people with a promotion focus is to approach the desired end-state. On the contrary, a prevention focus is concerned with security and safety; thereby the strategic inclination of people with a prevention focus is to avoid mismatches of the desired end-state. It is predicted that people will experience more eagerness on a promotion focus (i.e., eager to approach the desired end-state) and more vigilance (i.e., vigilant to avoid mismatches of the desired end-state) on a prevention focus.

These propositions can be conceptualized in signal-detection terms (Higgins, 1997). Specifically, people in a promotion focus use *eagerness means* to ensure “hits” (gains) or to ensure against “misses” (nongains) as their strategies of behavior. People in a prevention focus, however, use *vigilance means* to ensure “correct rejections” (nonlosses) or to ensure against “false alarms” (losses) as their strategies of behavior. Thus, it is predicted that a promotion focus will induce people to be in a state of eagerness, while a prevention focus will induce people to be in a state of vigilance. The proposition of these distinctive motivational states associated with promotion focus and prevention focus has been supported by empirical research (e.g., Crowe & Higgins, 1997; Higgins et al., 2001). Study 2 is designed to test whether a distinct regulatory focus will evoke different motivational states in a real-life setting.

Further, the effects of regulatory focus on openness to change were also examined. Since people with a promotion focus are sensitive to the presence or absence of positive outcomes, they may be more willing to pursue all means to attain their desired goals. Correspondingly, because people with a prevention focus are more sensitive to the avoidance of negative outcomes, they may be more careful in avoiding mistakes. Therefore, according to the predictions of regulatory focus theory, individuals with a promotion focus (i.e., who pursue advancement and gains) should be more willing to take risks and open to change. Individuals with a prevention focus (i.e., who are concerned with safety and security) should favor stability.

The results of previous empirical studies support these predictions. Levine et al. (2000) found that people with a promotion focus adopted risky strategies for solving problems, whereas people with a prevention focus adopted conservative strategies. Liberman et al. (1999) also found that individuals with a prevention focus were more inclined than were those with a promotion focus to resume an interrupted task, rather than perform a substitute task. Consistent with these results, Study 2 also examined whether a regulatory focus in real life can affect individuals' openness to change. In sum, Study 2 examined the effects of regulatory focus on motivational states and on openness to change in a natural setting.

Method

Participants and Procedure

Study participants were 135 people who were attending CPBL games (participants were drawn from two games) in Taiwan. There were 9 individuals who indicated in questionnaires that they were not fans of either of the two competing teams, so they were dropped from the analysis. Thus, the valid sample included 126 participants (80 male, 46 female). The participants' mean age was 26.7 years ($SD = 7.7$). Of the participants, 64 were in the promotion group and the remaining 62 were in the prevention group. Chi-square and *t*-test analyses found no significant differences in terms of gender, educational level, or age between selected and dropped individuals. The research procedure was the same as that of Study 1.

Measures

Motivational state. We adopted Higgins et al.'s (2001) eight-item measure of motivational state. Participants rated their motivational states on a 10-point scale ranging from 0 (*not at all*) to 9 (*totally match*). The questionnaire contained four items related to eagerness–apathy (*eager, enthusiastic, bored, apathetic*) and four items related to vigilance–carelessness (*vigilant, careful, negligent, careless*). Two items related to eagerness–apathy were dropped, which increased Cronbach's alpha from .60 to .81; and two items related to vigilance–carelessness were dropped, which increased Cronbach's alpha from .40 to .79. Thus, motivational state scores were calculated by summing the two items related to eagerness–apathy (*eager, enthusiastic*) and summing the two items related to vigilance–carelessness (*vigilant, careful*), respectively.

Openness to change. We used the item “If you were the head coach of your supported team, which players would you substitute?” as the measurement of openness to change. A multiple-choice item that allowed participants to choose 0 to 10 players (batters 1 to 9, and the pitcher) was used to measure openness to change. The more players the participants selected, the more open they were to change.

Results

We used a 2×2 mixed-design ANOVA with regulatory focus (promotion vs. prevention) as the between-subjects variable and motivational states (eagerness–apathy or vigilance–carelessness) as the within-subjects variable.

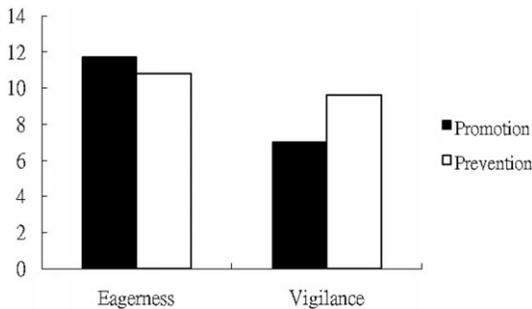


Figure 2. Interaction effects between regulatory focus and motivational state.

No significant main effect was found for regulatory focus. There was a significant main effect for motivational states, $F(1, 122) = 45.11, p < .001, \eta^2 = .27$, which indicates that the score related to eagerness–apathy ($M = 11.26, SD = 0.39$) was greater than the score related to vigilance–carelessness ($M = 8.31, SD = 0.38$). There was an interaction effect between regulatory focus and motivational state, $F(1, 122) = 15.98, p < .001, \eta^2 = .12$. The plot of this interaction appears in Figure 2. As can be seen, the patterns of this interaction are consistent with the regulatory focus theory prediction.

Simple main-effects analysis shows that there was no significant difference between promotion and prevention groups in terms of eagerness-related motivation, $F(1, 122) = 1.33, ns$; while the vigilance-related motivation of prevention groups ($M = 9.62, SD = 0.54$) was greater than that of the promotion group ($M = 7.00, SD = 0.53$), $F(1, 122) = 12.18, p < .01, \eta^2 = .09$. Simple main-effects analysis also reveals that for the promotion group, eagerness-related motivation ($M = 11.71, SD = 0.54$) was significantly greater than was vigilance-related motivation ($M = 7.00, SD = 0.53$), $F(1, 122) = 58.33, p < .001, \eta^2 = .32$. No such effect was found for the prevention group. In sum, the patterns of interaction between regulatory focus and motivation are consistent with the regulatory focus theory prediction. Also, similar to Study 1, the regulatory focus effects on the field setting were stronger for the promotion group than for the prevention group.

We conducted an independent-sample t test to explore the effect of regulatory focus on openness to change. There was a significant difference between the promotion and prevention groups, $t(124) = 2.16, p < .05$. Thus, the promotion group was more open to change ($M = 0.94, SD = 1.33$) than was the prevention group ($M = 0.52, SD = 0.78$).

In general, the results of Study 2 support the regulatory focus theory prediction. Regulatory focus may influence individuals in terms of motivation and openness to change in a field setting.

Study 3

According to Higgins (1997), a promotion focus entails motivation to attain nurturance (e.g., food), while a prevention focus entails motivation to attain security (e.g., shelter from harm). Activation of a promotion focus (i.e., a focus on nurturance) may make people view the environment as prospectively benign, thereby leading to the adoption of a riskier cognitive processing style and increased creativity. Comparably, activation of a prevention focus (i.e., a focus on security) may make people view the environment as prospectively threatening, thereby leading to the adoption of a more risk-averse cognitive processing style and decreased creativity (Friedman & Forster, 2001). Thus, individuals in a promotion focus may exhibit a “risky” processing style in which novel alternatives are actively sought, while people in a prevention focus may exhibit a risk-averse processing style in which routines are preferred over novelty.

We predict that the processing style induced by a promotion focus will enhance creative thinking, and that the processing style induced by a prevention focus will undermine creative thinking. Zhu and Meyers-Levy (2007) found that promotion-focused individuals engage predominantly in relational elaboration, which entails identifying abstract relationships among disparate items. In contrast, prevention-focused individuals engage in item-specific elaboration, which involves focusing on specific attributes of each item, independent of others. Friedman and Forster (2001) found that promotion cues, relative to prevention cues, could facilitate creative thought. According to these studies, promotion-focused individuals may be more effective in problem solving than prevention-focused ones. Study 3 examines the effects of regulatory focus on problem solving in a field setting.

Method

Participants and Procedure

Study participants were 96 people who were attending CPBL games (participants were drawn from two games) in Taiwan. There were 17 individuals who indicated in questionnaires that they were not fans of either of the two competing teams and 1 individual who had seen the problem-solving task (dependent variable), so they were dropped from the analysis. Thus, the valid sample included 78 participants (42 male, 36 female). The participants' mean age was 26.6 years ($SD = 8.8$). Of the participants, 40 were in the promotion group and the remaining 38 were in the prevention group. Chi-square and *t*-test analyses found no significant differences in terms of educational level and age, but a significant difference in terms of gender between selected and

dropped individuals, $\chi^2(1, N = 96) = 5.27, p < .05$. However, we found no significant difference between the promotion and prevention groups in terms of gender, $\chi^2(1, N = 78) = 1.33, ns$, thus suggesting that gender did not confound the research results. The research procedure was the same as that of Study 1.

Measure

An item adopted from Ashcraft (2002) was administered as the problem-solving task:

A stranger approached a museum curator and offered him an ancient bronze coin. The coin had an authentic appearance and was marked with the date 544 B.C. The curator had happily made acquisitions from suspicious sources before, but this time he promptly called the police and had the stranger arrested. Why? (p. 502)

Since it is impossible that people who lived in 544 B.C. knew that they were living in 544 “B.C.,” the coin is unlikely to have been marked with the date 544 B.C. Participants who answered this question correctly were defined as more creative in problem solving than those who answered incorrectly. In addition, an item asked participants if they had ever seen the item before. One participant who answered “Yes” was dropped from the analysis.

Results

A significant effect in terms of regulatory focus was found, $\chi^2(1, N = 78) = 7.10, p < .01$, such that a greater number of promotion-focused participants answered the item correctly ($N = 20; 50\%$) than did prevention-focused participants ($N = 8; 21.1\%$). Thus, Study 3 supports the regulatory focus theory prediction. Regulatory focus may influence individuals in terms of their problem solving, even in a field setting.

General Discussion

The results of the present studies highlight the idea that regulatory focus plays an important role in terms of people’s emotions (Study 1), motivation and openness to change (Study 2), and cognition (Study 3). Specifically, we found that people in a promotion focus reported more cheerfulness–dejection

emotions and more eagerness-related motivation, were more associated with openness to change, and were more creative in problem resolving; while people in a prevention focus reported more quiescence–agitation emotions and more vigilance-related motivation, were more associated with a preference for stability, and were less creative. These results are consistent with regulatory focus theory predictions.

Although previous research has proved the effects of regulatory focus on these dependent variables, this study differs from previous research in many ways that have implications for expanding the theory of regulatory focus. As far as the authors know, scant research has been conducted to test regulatory focus theory by using field experimental design. Previous studies conducted in laboratory settings are excellent in terms of internal validity, but weak in terms of external validity. According to Campbell (1957), “The optimal design is, of course, one having both internal and external validity” (p. 310). Thus, the current study is characterized by using a field experimental design to examine the external validity of regulatory focus theory. It was shown that situational cues in a real-life context may induce distinct regulatory focus in people and then affect their cognition, emotions, and behavioral intentions.

An interesting finding is that the effects of promotion focus seem to be stronger than those of prevention focus. In Study 1, for the promotion group, emotions related to dejected–cheerfulness were significantly greater than were emotions related to agitation–quiescence, $F(1, 70) = 14.00, p < .001, \eta^2 = .17$; while no such effect was found for the prevention group. In Study 2, for the promotion group, eagerness-related motivation was significantly greater than was vigilance-related motivation, $F(1, 122) = 58.33, p < .001, \eta^2 = .32$; while no such effect was found for the prevention group. These results seem to be inconsistent with the prevailing view of loss aversion suggesting that losses are experienced more intensely than are gains of similar objective magnitude (Kahneman & Tversky, 1979; Tversky & Kahneman, 1991). A potential explanation for this is the research context of the present study.

Across three studies, Idson, Liberman, and Higgins (2000) found that the pleasure of a gain is generally greater than that of a nonloss, and that the pain of a loss is generally greater than that of a nongain. In a pleasure-pursuing context (e.g., enjoying a baseball game), people may pay more attention to pleasure than to pain. People experience pleasure, rather than pain, when they are enjoying a baseball game. Since the pleasure of a gain is generally greater than that of a nonloss (Idson et al., 2000), the effects of promotion—which is characterized by pursuit of gain when considering the offensive team in a baseball game—may be greater than the effects of prevention, which is characterized by pursuit of nonlosses by the defensive team. It is possible that the amusement property of a baseball game make people more nongain-averse as opposed to more loss-averse. This suggests that the current setting (i.e., a

baseball game) might not be ideal in evoking prevention-focused effects. How promotion-focused versus prevention-focused effects may be asymmetric in real life remains an intriguing topic for future research to explore.

The present study has implications in sport psychology research. Past studies have dealt with sports fans' emotions (e.g., Kerr, Wilson, Nakamura, & Sudo, 2005) and behavioral consequences (e.g., Boen, Vanbese-laere, & Feys, 2002). One of the most intriguing issues prevailing in research on sports fans is how the performance of the team (i.e., win or lose) affects spectators' reactions. For example, Cialdini et al. (1976) found that university students were more likely to wear school-identifying clothing after a win of their school's football team than after a loss. Since the aforementioned research concerned spectators' reactions after the game (i.e., after their team won or lost), little is known about spectators' psychological state during the game. On the basis of regulatory focus theory (Higgins, 1997), the present study proves that people may shift their emotions, motivation, and cognition dynamically during the game. These findings may also be true in some other sports that can differentiate offensive and defensive teams clearly (e.g., American football).

Besides sports contexts, the current study also has implications in other real-life situations. Many researchers have claimed that regulatory focus may affect real-life decisions and behaviors. Regulatory focus has been shown to affect consumers' decisions (Werth & Förster, 2007), health behavior (Latimer et al., 2008), and safe driving behavior (Haddad & Delhomme, 2006). Some researchers have also claimed that regulatory focus may influence organizational behavior (Brockner & Higgins, 2001) and sports performance (Plessner, Unkelbach, Memmert, Baltes, & Kolb, 2009). The current study not only shows that regulatory focus may affect real-life psychological states and behavior, as previous research has shown, it also shows that natural events—such as the offensive and defensive modes in a baseball game—can switch people's regulatory focus (i.e., promotion or prevention focus), thus affecting their emotions, cognition, and decision making. It is possible that many life events related to gain and loss (e.g., fluctuations in the stock market) may affect people's regulatory focus, which, in turn, can influence their real-life behavior.

A major limitation of the current study is that the manipulations of regulatory focus were the same across all three studies. The reason for using the same manipulation across all three studies is that it was not easy to find another perfect manipulation of promotion and prevention focus in real life. However, the authors admit that using the same manipulation across all three studies may have weakened the external validity of the present study. The results and generalizability of the present findings must be tested by alternative manipulations in future research.

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