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Are success and failure experiences equally motivational? An investigation of regulatory  
focus and feedback

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### **Abstract**

The present study extended regulatory focus theory (Idson & Higgins, 2000) to an educational setting and attempted to identify individuals with high motivation after both success and failure feedback. College students in Hong Kong ( $N = 180$ ) participated in an experiment with a 2 promotion focus (high vs. low) x 2 prevention focus (high vs. low) x 2 feedback (success vs. failure) design. The results showed that after success feedback, the students with promotion focus were more motivated than their counterparts with prevention focus. This pattern was reversed after failure feedback. However, the results failed to show that students high in both regulatory focuses were motivated after success as well as failure feedback. The findings are discussed with reference to the literature on flexibility of regulatory focuses. Practical and theoretical implications of feedback are also discussed.

*Key words:* regulatory focus; success and failure; achievement motivation

## Are Success and Failure Experiences Equally Motivational? An Investigation of Regulatory Focus and Feedback

### 1. Introduction

Feedback is found to have significant impact on self-efficacy (Schunk, 1994), self-esteem (Koestner, Zuckerman, & Koestner, 1987, 1989), attributional beliefs (Mueller & Dweck, 1998), and helpless reactions (Kamins & Dweck, 1999). Many studies have indicated that success feedback was motivational whereas failure feedback was de-motivational (e.g., Boggiano & Barrett, 1985; Lewis-Beck, 1978). However, a meta-analysis by Kluger and DeNisi (1996) showed that this was not the case. To account for the inconsistent effect of feedback, they suggested that more factors, such as individual differences, should be considered. Recently, regulatory focus has been found to be one of these factors that could explain the inconsistency (Idson & Higgins, 2000).

#### *1.1. Regulatory Focus Theory, Feedback, and Motivation*

The regulatory focus theory (Higgins, 1997, 1998) postulates three self-representations. These representations are composed of attributes that an individual believes that one actually possesses (actual self), ideally wishes to possess (ideal self) and ought to possess (ought self). Evaluating the ideal or ought selves against the actual self leads to promotion or prevention regulatory systems respectively. A promotion system relates to the ideal self-guide that involves hopes, wishes, aspirations, and desired end-states. Individuals with a promotion focus are inclined to focus on the presence of a positive outcome, i.e., the discrepancy between their ideal self and the actual self. They use promotion strategies, such as risk taking and eager advancement, to reduce the discrepancies (Crowe & Higgins, 1997). By contrast, a

prevention system relates to the ought self-guide that involves duties, obligations, responsibilities, and undesired end-states. Individuals with a prevention focus are inclined to focus on the presence of a negative outcome, i.e., the discrepancy between their ought self and the actual self. They use prevention strategies, such as vigilant stand and prudent move, to reduce the discrepancies.

Past studies have found that regulatory focus moderated the motivational effects of success and failure feedback (Förster, Grant, Idson, & Higgins, 2001; Idson & Higgins, 2000; Van-Dijk & Kluger, 2004). Disregarding whether regulatory focus was measured (Idson & Higgins, 2000) or manipulated (Van-Dijk & Kluger, 2004), it was found that individuals with promotion focus had better performance after success feedback, whereas individuals with prevention focus had better performance after failure feedback. Individuals' different responses to success and failure feedback may originate in their different regulatory focuses. As individuals with promotion focus perceive success as the presence of positive outcome, they have a more intense emotional experience after success than failure (Idson, Liberman, & Higgins, 2000). As a result, their eagerness is maintained or strengthened after success but not after failure (Higgins & Spiegel, 2004). By contrast, as individuals with prevention focus perceive failure as the presence of negative outcome, they have a more intense emotional experience after failure than success. As a result, their vigilance is maintained or strengthened after failure but not after success.

### *1.2. Alternative Conceptualization of Regulatory Focus*

Conventionally, regulatory focus is conceptualized as a dichotomy and individuals are assigned to the group of either promotion or prevention focus. However, are there individuals who have both focuses and therefore may be motivated by success as well as failure? With an alternative conceptualization, the present study attempted to address this issue.

Regulatory focus is the result of early socialization. The messages children receive from their caretakers may involve both regulatory systems. Higgins (1997) indicated that an individual can possess both promotion and prevention systems. Therefore, it is reasonable to conceive promotion and prevention focuses as two independent variables instead of two ends of a continuous variable. With the former conceptualization, four groups instead of two can be derived: high in promotion but low in prevention focus (promotion group), high in prevention but low in promotion focus (prevention group), low in both focuses (low-low group), and high in both focuses (high-high group).

The present study attempted to identify the individuals with the most adaptive motivational pattern, i.e., those who would be resilient after failure but not complacent after success. The individuals in the high-high group may have such a motivational pattern. Since they have subjective histories of both attainment of success and avoidance of failure, they may behave like those with promotion focus when experiencing success but like those with prevention focus when experiencing failure. It is possible that they are motivated by *both* success and failure feedback. By contrast, the individuals in the low-low group do not have a subjective history of either attainment of success or avoidance of failure, they may not be motivated by either success or failure experience.

### *1.3. The Present Study*

The present study extended the application of regulatory focus theory from social psychology to educational setting. A 2 feedback (success vs. failure)  $\times$  2 promotion focus (low vs. high)  $\times$  2 prevention focus (low vs. high) factorial design was adopted to examine how students' regulatory focus moderated their motivation following feedback. To improve the validity of past studies, different motivational measures were included. In addition to fluency, accuracy was included to reflect task performance. Fluency can tap the eagerness of the

promotion group whereas accuracy can tap the vigilance of the prevention group (Förster, Higgins, & Bianco, 2003).

Two hypotheses were formulated. First, students in the promotion group are more motivated after success feedback, whereas students in the prevention group are more motivated after failure feedback. Second, disregarding the valence of feedback, students in the high-high group have the highest motivation among the four groups whereas students in the low-low group have the lowest motivation.

## **2. Method**

### *2.1. Participants*

One hundred and eighty Chinese students (62 males and 118 females) from a university in Hong Kong participated in the study for course credits. As gender differences were not found in any of the manipulation checks and dependent variables, gender was excluded from subsequent analyses.

### *2.2. Procedures*

The experiment was conducted in Chinese. At the beginning, participants were led to believe that they would participate in two alleged studies. In Study One, they completed the Self-Guide Congruencies Measure (Higgins, Shah, & Friedman, 1997). In Study Two, they took a Word Association Test that tapped their “word association ability.” This ability was described as the foundation of language ability and creative writing. Participants were told that good performance in the test not only reflected their rich volume of vocabulary, but also their rapid association ability and flexibility in the use of language. There were three tasks in Study Two. First, participants were given a 10-minute word association test. Second, they finished a so-called brain stretch exercise in 10 minutes. Third, they moved into individual

soundproof cubicles and finished another word association test. A timer was attached inconspicuously to the doors to measure the time they spent in the cubicles. Before they did the second test, they read the result slips of their performance in the first test. By random assignment, half of the participants received success feedback and the other half received failure feedback. At the end of the experiment, participants were fully debriefed.

### 2.3. Materials

2.3.1. *Word association test.* Two versions were developed and assigned to the first and second tests with counterbalanced design. The performance in the first test served as the baseline (pre-feedback performance) and the performance in the second test as the dependent measure of performance after feedback (post-feedback performance). Each test required participants to write as many Chinese words as they could using the seven radicals provided.

2.3.2. *Brain stretch exercise.* This was a filler task to make the cover story convincing. It required participants to write as many usages as possible for five Chinese characters. Participants were told that this exercise might enhance their word association ability, which would be tested again in the second word association test.

### 2.4. Measures

2.4.1. *Self-guide congruencies.* The English version of this questionnaire (Higgins et al., 1997) was translated into Chinese in a back-translation procedure. It is a self-report measure that participants had to list three different ideal attributes and three different ought attributes. After each of the attributes, participants rated two items: the extent that they *ideally would like to/ ought to* possess that attribute and the extent that they *actually* possessed that attribute on a 4-point scale from 1 (slightly) to 4 (extremely). Ideal and ought congruency scores were calculated as the differences between ideal or ought ratings and the corresponding actual



ratings. Averaged differences were reversed to form the congruency score. A more positive score meant a higher ideal/ought congruency and indicated a higher promotion/prevention focus.

*2.4.2. Feedback.* Fake result slips on performance in the first test were given to the participants after the brain stretch exercise and before they did the second test. All participants were informed that the mean score of the norm was 70. Participants in the success condition were told that their score was 82 whereas those in the failure condition were told that their score was 58<sup>1</sup>.

*2.4.3. Motivational outcomes.* Fluency was measured as the total number of words written whereas accuracy was measured as the number of correct words written. Persistence was measured as the time spent (in minutes) in the second test.

*2.4.5. Manipulation checks.* To examine the credibility of the word association test, participants were asked how much they agreed that the test could indeed test their retrieval speed and association ability on a 7-point scale from 1 (strongly disagree) to 7 (strongly agree). A rating higher than 4 indicated agreement.

### 3. Results

#### 3.1. Manipulation Checks

One-sample *t*-tests revealed that participants believed the alleged word association test could test their retrieval speed ( $M = 4.85$ ,  $SD = 1.32$ ,  $t(179) = 8.63$ ,  $p < .001$ ) and association

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<sup>1</sup> To check whether the feedback would elicit failure/success experience, an independent study with 100 college students was conducted. Half of the students were asked what they would feel if they obtained a score of 58 in a word association test with a mean of 70 in the norm. They were asked to indicate how much they agreed that it was a success and how much they agreed that it was a failure. Both responses were made on an 8-point scale from 1 (strongly disagree) to 8 (strongly agree). The other half of the students were asked the same two questions but were told that they obtained a score of 82. Compared to the former group, the latter group felt more that the experience was a success (2.52 vs. 6.32),  $t(98) = 15.19$ ,  $p < .001$ . However, the former group felt more than the latter group that the experience was a failure (6.06 vs. 2.34),  $t(98) = 12.41$ ,  $p < .001$ . The results supported the believability of the valence of the feedback.

ability ( $M = 4.52$ ,  $SD = 1.31$ ,  $t(179) = 5.37$ ,  $p < .001$ ). Both ratings were significantly higher than 4 and supported the credibility of the word association test.

### 3.2. Main Results

As the study adopted a 2 feedback (success vs. failure)  $\times$  2 promotion focus (low vs. high)  $\times$  2 prevention focus (low vs. high) factorial design, median splits were used to dichotomize each of the promotion and prevention focuses into low and high groups (see Cesario, Grant, & Higgins, 2004). Crossing the two groups by the three factors resulted in eight conditions. The number of participants and descriptive statistics for the three dependent variables in each condition are presented in Table 1.

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Insert Table 1 about here  
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*3.2.1. Fluency.* A 3-way ANCOVA was performed to control for the pre-feedback performance. A significant 2-way interaction between Feedback and Promotion Focus was found,  $F(1, 171) = 4.96$ ,  $p = .03$ ,  $\eta_p^2 = .03$ . Subsequent contrasts showed that after success, the promotion group was more fluent ( $M = 43.36$ ,  $SE = 2.33$ ) than the prevention group ( $M = 34.57$ ,  $SE = 2.57$ ),  $t(171) = 2.55$ ,  $p = .01$ . The promotion group was also more fluent after success ( $M = 43.36$ ,  $SE = 2.33$ ) than after failure ( $M = 33.67$ ,  $SE = 3.27$ ),  $t(171) = 2.42$ ,  $p = .02$ . However, the high-high and low-low groups did not perform particularly well nor particularly poorly. The high-high group was less fluent ( $M = 36.84$ ,  $SE = 2.04$ ) than the promotion group after success ( $M = 43.36$ ,  $SE = 2.33$ ),  $t(171) = 2.09$ ,  $p = .04$ .

*3.2.2. Accuracy.* A 3-way ANCOVA revealed a significant 2-way interaction between Feedback and Promotion Focus,  $F(1, 171) = 4.85$ ,  $p = .03$ ,  $\eta_p^2 = .03$ . Subsequent contrasts showed that the promotion group was more accurate after success ( $M = 33.43$ ,  $SE = 1.96$ ) than

after failure ( $M = 26.19$ ,  $SE = 2.77$ ),  $t(171) = 2.14$ ,  $p = .03$ . Again, the high-high and the low-low groups neither outperformed nor under-performed.

*3.2.3. Persistence.* A 3-way ANOVA revealed a significant 2-way interaction between Feedback and Promotion Focus,  $F(1, 172) = 8.95$ ,  $p = .01$ ,  $\eta_p^2 = .05$ , and a marginally significant interaction between Feedback and Prevention Focus,  $F(1, 172) = 3.93$ ,  $p = .05$ ,  $\eta_p^2 = .02$ . Subsequent contrasts showed that after success, the promotion group was more persistent ( $M = 18.00$ ,  $SE = 1.11$ ) than the prevention group ( $M = 13.81$ ,  $SE = 1.22$ ),  $t(172) = 2.54$ ,  $p = .01$ . By contrast, after failure, the prevention group was more persistent ( $M = 19.12$ ,  $SE = 1.16$ ) than the promotion group ( $M = 15.13$ ,  $SE = 1.56$ ),  $t(172) = 2.05$ ,  $p = .04$ . In addition, the prevention group was more persistent after failure ( $M = 19.12$ ,  $SE = 1.16$ ) than after success ( $M = 13.81$ ,  $SE = 1.22$ ),  $t(172) = 3.15$ ,  $p = .002$ . Again, the high-high group did not perform particularly well but was less persistent ( $M = 13.57$ ,  $SE = 0.82$ ) than the prevention group ( $M = 19.12$ ,  $SE = 1.16$ ) after failure,  $t(172) = 3.91$ ,  $p = .0001$ . While the low-low group also did not perform particularly poorly, it was more persistent ( $M = 17.24$ ,  $SE = 1.16$ ) than the prevention group after success ( $M = 13.81$ ,  $SE = 1.22$ ),  $t(172) = 2.04$ ,  $p = .04$ .

#### 4. Discussion

Is receiving success feedback motivational but failure feedback de-motivational? The answer is “yes and no.” The results of the present study suggest that success feedback is motivational for individuals with promotion focus whereas failure feedback is motivational for individuals with prevention focus. The effects of success and failure feedback depend on the regulatory focus of the receivers.

With a fourfold classification of regulatory focus, the present study failed to identify a group being motivated by both success and failure feedback. All the dependent measures only showed two-way interactions. A plausible explanation for the failure to identify the target

group lies in one's flexibility in self-regulation. Being motivated regardless of failure or success feedback is an adaptive learning attitude. This attitude requires an individual's ability to respond flexibly with situation-appropriate behaviors, i.e., to activate the promotion focus system after success, but to activate the prevention focus system after failure. Behaving appropriately according to the situations requires discriminative facility. According to Cheng, Chiu, Hong, & Cheung (2001), discriminative facility is an aspect of social intelligence that refers to sensitivity to subtle cues about the psychological meaning of the situation.

Individuals who are high in both focuses do not necessarily have discriminative facility. Their regulatory systems may not function flexibly and respond appropriately to the situation.

The mediocre performances of the students in the high-high group may also be explained by a counteracting effect of the two regulatory focus systems. That is, the functioning of one regulatory focus system may offset that of another system. As a result, the promotion system and prevention system of the students in the high-high group may not function with full capacity in either situation. Differences in the emotional responses of the two systems after feedback (Idson et al., 2000) may explain this phenomenon. Promotion focus will lead to joy after success but sadness after failure. The joy experienced will maintain eagerness. By contrast, prevention focus will lead to tenseness after failure but calmness after success. The tenseness experienced will maintain vigilance. In the high-high group, the motivational benefits coming from the joy experienced after success might be dampened by the accompanying calmness. Similarly, the tenseness experienced after failure might also be toned down by the simultaneous sadness. Emotions may exert a canceling-out effect on subsequent motivation. However, the above speculation requires more evidence as the present study had not measured participants' emotional responses to the feedback. Future studies may include these measures to ascertain the possibility of a counteracting effect.

Another direction for future research lies in the flexible functioning of promotion and prevention focuses. Future studies may examine flexible functioning of regulatory focus by using a within-subject design, i.e., tracing the motivational and emotional responses of the *same* individuals across success and failure feedback. In addition, future studies may also consider investigating the motivational outcomes of combining regulatory focus with other psychological principles (e.g., task value). When a task is of high value, an individual with prevention focus may be less likely to lose vigilance after success whereas an individual with promotion focus may be less likely to give up after failure (Shah & Higgins, 1997). By minimizing the costs and maximizing the benefits of each focus, it is possible to have an effective self-regulation (Higgins, 2000).

### **5. Practical and Theoretical Implications**

According to expectancy-value theory (Atkinson, 1964), motivation is determined by the interaction between the probability and the incentive value of success. Although the value of success is high, an individual will lose motivation if the probability to succeed is low. Receiving failure feedback is de-motivational because failure implies low probability to succeed. Therefore, educators are encouraged to adopt instructional practices that shower students with praise and successful experience. Criticism and failure experience are supposed to be avoided as much as possible (Kahne, 1996). Yet the results of the present study suggest that success is not necessarily motivational and failure is not necessarily de-motivational. Students with prevention focus can still be persistent after failure. The motivational effects of success and failure feedback depend on regulatory focus, a personality factor. These findings urge educators to be more cautious about individual differences in providing feedback. They need to reconsider the appropriateness of success and failure feedback when they teach students with different regulatory focuses.

The findings of the present study have intriguing relevancy with some cross-cultural studies in motivation. These studies have found that individuals from Western culture were more persistent after success but individuals from Asian culture were more persistent after failure (Heine et al., 2001; Heine, Kitayama, & Lehman, 2001). These interesting findings were not a surprise given the fact that individuals from Western culture are more inclined to adopt promotion focus whereas the individuals from Asian culture are more inclined to adopt prevention focus (Lee, Aaker, & Gardner, 2000). There is a need to combine the research in regulatory focus and the cross-cultural research in motivation. This new direction of investigation will enhance the current understanding of the inconsistent effects of success and failure feedback. It will also help clarify the role of regulatory focus in the psychological processes that contribute to the interesting differences in motivation between Western and Asian cultures (Hamamura & Heine, 2008).

(3,005 words)

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Table 1

*Descriptive Statistics of the Dependent Measures by Groups and Feedback*

	<u>High-High</u>		<u>Promotion</u>		<u>Prevention</u>		<u>Low-Low</u>	
	Success (n=29)	Failure (n=40)	Success (n=22)	Failure (n=11)	Success (n=18)	Failure (n=20)	Success (n=20)	Failure (n=20)
Fluency	36.84 <sup>a</sup> (2.04)	35.48 (1.71)	43.36 <sup>abc</sup> (2.33)	33.67 <sup>c</sup> (3.27)	34.57 <sup>b</sup> (2.57)	36.70 (2.43)	37.20 (2.42)	39.30 (2.43)
Accuracy	29.67 (1.72)	27.98 (1.45)	33.43 <sup>a</sup> (1.96)	26.19 <sup>a</sup> (2.77)	28.47 (2.19)	30.63 (2.05)	29.30 (2.05)	31.04 (2.06)
Persistence	16.13 <sup>a</sup> (0.96)	13.57 <sup>ab</sup> (0.82)	18.00 <sup>c</sup> (1.11)	15.13 <sup>d</sup> (1.56)	13.81 <sup>cef</sup> (1.22)	19.12 <sup>bdf</sup> (1.16)	17.24 <sup>e</sup> (1.17)	16.34 (1.16)

*Note.* Means sharing the same superscript in the same row are significantly different from each other at .05 level. Numbers in parentheses are standard errors.