

Emotions and decision making: Regulatory focus moderates the influence of anticipated emotions on action evaluations

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We investigate the moderating effects of self-regulatory foci (Higgins, 1996a) on the impact of anticipated emotions in decision making. We hypothesise that regulatory focus moderates the relationships between anticipated emotions of success and failure of performing an act and evaluations of the act. A *promotion focus* should highlight the role of dissatisfaction-satisfaction emotions in predicting evaluations, whereas a *prevention focus* should emphasise the impact of relaxation-agitation emotions. Hypotheses were investigated in two studies. In the first, chronic self-regulatory orientations were assessed; in the second, self-regulatory concerns were manipulated. Results support the moderating effects of regulatory foci on the impact of negative anticipated emotions: Anticipated agitation induces more favourable action evaluations under a prevention focus; and anticipated dejection leads to more favourable action evaluations under a promotion focus. No interaction was detected involving positive emotions, suggesting that an asymmetry may exist in motivational regulation of emotional information.

Research on the impact of emotions on decision-making processes has focused primarily on emotional valence (e.g., Bagozzi, Baumgartner, & Pieters, 1998; Conway & Giannopoulos, 1993; Perugini & Bagozzi, 2001; Zeelenberg, 1999). The implicit assumption is that all negative or all positive emotions play the same role in influencing such stages of decision making as evaluation, intention

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formation, and choice. However, from the point of view of appraisal theories of emotions (Lazarus, 1991; Roseman, 1991), it could be argued that even emotions sharing the same valence may influence decision making in different ways, because distinct emotions activate different goals which influence subsequent decision making (Raghunathan & Pham, 1999).

A separate line of research has linked personal goals to specific emotions, showing how people differ in their motivational inclinations and in their emotional appraisals. Regulatory focus theory (e.g., Higgins, 1996a, 1996b; Higgins, 1998) maintains that a *promotion focus* highlights the role of elation emotions if successful in goal pursuit, and of dejection emotions if unsuccessful; a *prevention focus* leads to relaxation emotions if a goal is attained, and to agitation emotions if failure is experienced. These asymmetries are explained by the different emotional appraisals that take place in situations of presence/absence of positive/negative outcomes. A similar line of reasoning (e.g., Carver, 1996) argues that separate approach and avoidance systems control goal pursuit and regulate emotional reactions contingent on how well one is doing in pursuing the approach or the avoidance goals (Carver & Scheier, 1998). The effects of the approach and avoidance systems parallel those of promotion and prevention foci in Higgins' approach.

Given the existence of different motivational inclinations (e.g., Higgins, 1997) and different implicit goals elicited by distinct emotions (Raghunathan & Pham, 1999), the impact of emotions on decision making can transpire in complex ways. We propose that the effects of discrete emotions on the evaluation of behaviours are moderated by the regulatory focus most accessible to individuals. We expect that more favourable evaluations of a behaviour should result from intense satisfaction- and dejection-related emotions, when the individual follows a promotion orientation, whereas when the individual follows a prevention orientation, more favourable evaluations should arise if intense relaxation- and agitation-related emotions are experienced. Briefly summarised, the rationale for these hypotheses is that emotions matching a person's dominant motivational orientation should weigh more on evaluation than nonmatching emotions, thereby informing the decision-maker of the personal motivational relevance of the behaviour to be evaluated.

Emotions and decision making

Over-reliance on valence. Recent research on the impact of affective valence has contrasted the effects of positive and negative affect on evaluation and decision making (Elster, 1998; Higgins, 1997). For instance, the so-called affect-as-information model (Schwarz & Bohner, 1996) proposes that complex evaluations are resolved by individuals using emotional information to "colour" judgements. Studies developed within this framework have generally found that participants in good moods give more favourable evaluations than

people in bad moods (e.g., Schwarz & Clore, 1996). Approaches of this kind assume that what really matters about emotions during decision making is positive and negative valence. Valence is also conceived as the key determinant of the *direction* of the effect, with negative moods leading to more pessimistic or negative evaluations or judgements, and positive moods leading to favourable attitudes or positive judgements (Elster, 1998; Forgas, 1995).

A different line of research has addressed the possibility that emotions of different valence can influence evaluations and behaviour in the *same direction*. Bagozzi et al. (1998) stressed the role of positive and negative *anticipated emotions* that are elicited by the prospects of goal success and goal failure, and discussed how these context-related emotions influence motivation to pursue the goal. The focus on anticipated emotions is consistent with Frijda's claim that behaviour "... can be motivated by the anticipation of emotion that could or will occur" (1986, p. 97). Bagozzi et al. (1998) found that both positive and negative anticipated emotions positively influenced intentions to perform the behaviour. The more intense the positive and negative anticipated emotions, the more people were motivated to perform behaviours needed to achieve success or to avoid failure. Despite focusing on context-based goal-directed emotions as opposed to moods, Bagozzi et al. (1998) still emphasise emotional valence to explain how affect influences decision making.

Beyond valence. Reliance on valence has been theoretically sustained by affect theories organised such that affects of positive valence are tied to one regulatory system, and affects of negative valence to a different regulatory system (e.g., Cacioppo, Gardner, & Berntson, 1999; Watson, Wiese, Vaidya, & Tellegen, 1999). Following this view, emotional effects on decision making are mainly based on valence. Although parsimonious and simple, this conceptualisation has some shortcomings. It overlooks the fact that emotions sharing the same valence—such as anxiety and sadness, or elation and contentment—have different bases for appraisals (e.g., Smith & Ellsworth, 1985), imply distinct action tendencies (Frijda, 1986), and activate unique implicit goals (e.g., Higgins, 1998). Recent evidence shows that a more subtle distinction of emotional effects in decision making can be worthwhile. Raghunathan and Pham (1999) hypothesised that two distinct negative emotions (sadness and anxiety) have independent influences on decision making. The researchers showed that the choices of anxious individuals were biased in favour of low risk/low reward options, whereas the choices by sad individuals were biased in favor of high risk/high reward options. The theoretical explanation behind these effects proposes that anxiety and depression convey different information to decision-makers and activate different goals to be pursued: Sadness activates a goal of reward replacement, since depression is triggered by the appraisal of the absence of positive events and by the loss of rewarding opportunities (e.g., Higgins, 1987); anxiety activates a goal of uncertainty reduction, since anxiety

stems from the perception of impending punishments or negative outcomes (e.g., Higgins, 1996a; Frijda, 1986). Related results are reported by Lerner and Keltner (2000, 2001), who found that fearful participants made pessimistic judgements of future events, perceiving future events to be more risky, whereas angry individuals made optimistic judgements, perceiving future events to be less risky.

This evidence points to affect theories that consider different emotions with the same valence serving different regulatory concerns. Carver and Scheier (1998, 1999) posit two distinct regulatory systems underlying approach, and avoidance. Each regulatory system can give rise to positive or negative affect depending on how well one is doing in the action serving the approach or the avoidance motive. It follows that emotions of the same valence may serve different motivational concerns (Carver, 2004).

Regulatory focus

Higgins (1998) addressed the importance of specifying the motivational relevance of distinct emotional states. Regulatory focus theory (e.g., Higgins, 1996a, 1996b, 1997) considers two main motivational orientations or regulatory systems.¹ The *prevention system* has a negative outcome focus, consisting of a high sensitivity to the presence/absence of *negative* outcomes, whereas the *promotion system* has a positive outcome focus, consisting of a high sensitivity to the presence/absence of *positive* outcomes. Each regulatory focus controls *both* positive and negative emotional valence. Success under a promotion focus implies satisfaction and elation, whereas success under a prevention focus entails relaxation, or relief. Likewise, failure under a promotion focus implies depression and dejection, whereas failure under a prevention focus brings about anxiety and fear. Regulatory focus theory has received support in a number of studies (e.g., Higgins, Shah, & Friedman, 1997; Shah & Higgins, 1997, 2001).

The notion of regulatory fit recently discussed by Higgins (2000) sheds further light on the interplay between motives and emotions in decision making. Regulatory fit occurs when the means used to achieve a goal are consistent with the individual's motivational orientation. Regulatory fit has been shown to stimulate motivation, increasing the value of the goals pursued and the evaluation of the decisions made. Promotion focused individuals experience regulatory fit if they adopt eagerness (approach) means to obtain rewards, while prevention focused individuals experience regulatory fit if they adopt vigilant (avoidance) means. For instance, regulatory fit occurs for people who are sad when they adopt eagerness (approach) means to goal achievement, even for risky out-

¹ We are not implying that Higgins's theory and Carver and Scheier's theory are equivalent. Carver (1996) describes some logical and structural differences between the two views. Nonetheless, most motivational functions implied by these theories converge.

comes, since these means better serve their motivational orientation on sadness reduction and reward acquisition. In contrast, regulatory fit occurs for people who are anxious when they adopt vigilant (avoidance) means to goal attainment, because these means better serve their motivational orientation on anxiety reduction.

Expanding on Higgins's (2000) notion of regulatory fit, we propose that an act will be more favourably evaluated when prospects of success and failure on performing the act produce intense emotions matching the individual's motivational orientation. A promotion focused individual should pay more attention to the anticipation of satisfaction and elation, if successful, and to the anticipation of dejection and sadness, if unsuccessful, since these emotions indicate that success and failure in the domain that is pertinent for his/her motivational concerns (approaching positive outcomes), thus producing regulatory fit. A similar point can be made for prevention focused individuals, who should pay more attention to the anticipation of relaxation and relief (if successful), and agitation and anxiety (if unsuccessful), since this emotional information signals to the individual that the act is a means matching his/her motivational orientations (avoiding negative outcomes), thus yielding regulatory fit.

*Symmetric vs. asymmetric motivational regulation of positive and negative affect.*² Much of the research reviewed above rests upon the assumption that regulatory systems moderate the effects of positive and negative anticipated emotions in the same fashion. Such symmetry is consistent with regulatory foci theory, and also with Carver and Scheier's theory of regulatory systems. However, these theories primarily emphasise the role of regulatory systems in controlling the *experience* of emotions. But it is possible that symmetric effects for positive and negative emotions will not be observed when emotional information is used in decision making.

Asymmetric effects of positive and negative emotions on decision making and evaluation have been reported. Schwarz and Clore (1983) found that individuals in negative moods were more responsive to mood-attribution manipulations than individuals in positive moods. These authors suggested that the asymmetry is due to the fact that negative affect demands more explanation about the how and why of experienced unpleasant feelings, whereas positive moods require less explanation since they are simply less problematic. Another implication relevant for decision making is that negative affect demands more strategic reasoning than positive affect. For instance, it has been found that individuals in negative moods decide to help because of strategic reasons, whilst individuals in positive moods decide to help in a mindless fashion (Manucia, Baumann, & Cialdini, 1984).

² We thank the acting editor and an anonymous reviewer for encouraging us to elaborate on the issue of symmetry vs. asymmetry.

Recent theorising has highlighted that positive and negative emotions may entail asymmetric motivational processes. Positive emotions are not linked strongly to specific action orientations, as is generally the case for negative emotions (e.g., Fredrickson, 1998). In fact, negative emotions provide specific motivational information about what to do (e.g., to flee when scared; to search for support when sad). Different negative emotions should be therefore carefully distinguished from each other. Regulatory foci may then closely regulate anticipated negative affect, to make sure the decision-maker understands what is at stake and acts appropriately. On the other hand, positive emotions do not necessarily entail any specific action readiness. *All* anticipated positive emotions tell the individual that reaching a goal entails the possibility of reducing effort (e.g., Carver, 2003). Neither relief nor satisfaction entails specific action readiness, nor do they direct the individual to specific behaviours (e.g., Frijda, 1986). Therefore, the moderating role of regulatory focus may be absent in the regulation of positive emotions on decision making.

For the sake of simplicity and parsimony, we prefer to formulate our research questions symmetrically: Regulatory foci moderate the impact of both different positive and different negative anticipated emotions on attitudes. Nevertheless, for the reasons discussed above we acknowledge the possibility that regulatory systems may play a stronger role when managing the motivational impact of negative emotions. The hypotheses were investigated in two studies. In the first study, hypotheses were tested for the case where motivational orientations differ in their chronic dominance, whereas in the second study motivational orientations were manipulated directly.

STUDY 1

We first tested our hypotheses considering the moderating effects of chronic availability of promotion or prevention foci. We adopted the Behavioral Inhibition/ Behavioral Activation scales (BIS/BAS; Carver & White, 1994) to measure the two self-regulatory tendencies implied in Higgins' research.

The BIS/BAS scales (Carver & White, 1994) were developed as measures of the Behavioral Inhibition (BIS) and Behavioral Activation (BAS) Systems proposed by Gray (1990), but strong links can be found between the BAS and the promotion focus, and between the BIS and the prevention focus, respectively, which enables us to use the scales as indicators of chronic availability of prevention and promotion foci.³ The BIS controls the experience of anxiety in

³ We acknowledge that the BIS/BAS scales represent proxies for the prevention and promotion foci. But we believe that the functional features of BIS/BAS, particularly from the point of view recently taken by Carver (2004), are close enough to Higgins's construct to allow the use of the BIS/BAS scales to test hypotheses derived from regulatory foci theory. This point is further elaborated in the text.

response to anxiety-relevant cues and is particularly sensitive to signals of punishment, and in general to the presence/absence of negative outcomes. These functions represent also the core features of the prevention focus and of the avoidance system, enabling us to consider the BIS scale as a proxy for chronic prevalence of a prevention focus. The BAS is specifically sensitive to signals of reward, and this should motivate behaviour leading to the approach of positive outcomes. The BAS controls also the experience of such positive feelings as satisfaction and happiness when a person is exposed to cues of impending reward, and of such negative feelings as sadness and frustration when the reward is unattainable (Carver, 2004; Carver & White, 1994). The BAS also regulates sensitivity to reward-related stimuli and events, as well as to the general presence/absence of positive outcomes. These functions parallel those by the promotion focus. One facet of the BAS scale (Reward Responsiveness) was used as a measure of the chronic availability of the promotion focus among the participants in this study.

The links between the BAS and a promotion focus and the BIS and a prevention focus can be elaborated further as follows. An important conceptual similarity between the BIS/BAS and the two regulatory foci proposed by Higgins (1996a, 1996b) is that they control *emotional vulnerabilities*, but they do not have simple relationships with *typical emotional experiences* (Carver & White, 1994; Higgins et al., 1997). That is, the strength of one self-regulatory system, say the BIS or the prevention focus, should not imply a chronic persistence of a specific kind of affect or a higher frequency of specific emotional stages (e.g., negative or positive, anxious or dejected). Rather, the BIS is responsible for an acute sensitivity to stimuli associated with punishment, and for the expression of the proper emotional response (i.e., anxiety) to impending punishment, similar to the prevention focus. A similar point can be made for the BAS, which, like the promotion focus, is able to regulate both positive and negative emotional valence in response to attainment or nonattainment of rewards (Carver, 2004; Carver & White, 1994). Finally, the BIS and BAS regulate avoidance and approach tendencies, respectively. The promotion and prevention foci show a similar association with these specific strategic behavioural orientations (Carver, 1996; Carver & White, 1994; Higgins, Roney, Crowe, & Hymes, 1994).

In this study, we predict that more intense satisfaction and dejection anticipated emotions lead to more favourable evaluations of doing an act, when the promotion focus is prevalent over the prevention focus. On the other hand, we expect that more intense relaxation and agitation anticipated emotions will produce more favourable evaluations of doing an act, when the prevention focus is prevalent over the promotion focus. In addition, we will explore the possibility that stronger moderating effects might be found for negative emotions than for positive emotions.

Method

Participants and procedure

A total of 216 University of Michigan undergraduate students (119 males and 97 females, mean age = 20.32, $SD = 0.74$), filled out the questionnaire as part of course requirements. The aim of the study was described as an investigation of “how people think about themselves and their opinions concerning some everyday behaviours”. The behaviour considered was “maintaining a diet that consists in eating mainly fruit and vegetables and foods rich in dietary fibre, during the next week”.

Measures

Self-regulatory foci. These were measured by means of the BIS/BAS scales (Carver & White, 1994). The BIS is conceived as a unidimensional construct measured by 7 items. Three subscales refer to different BAS facets: Reward Responsiveness (REW, 5 items), Drive (4 items), and Fun Seeking (4 items). Previous research has shown that the measures of these subscales achieve discriminant validity (Carver & White, 1994; Heubeck, Wilkinson, & Cologon, 1998; Leone, Perugini, Bagozzi, Pierro, & Mannetti, 2001). The REW subscale ($\alpha = .79$) was considered a pertinent trait-like measure of Higgins’ promotion system, given its clear focus on the presence/absence of positive outcomes, whereas the BIS scale ($\alpha = .75$) represents a measure for the prevalence of the prevention focus. An indicator of regulatory focus prevalence was computed subtracting the REW score from the BIS score. Higher scores on this variable reflect prevalence of the prevention focus, whereas lower scores indicate prevalence of the promotion focus.

Anticipated emotions of success and failure. These were measured by separate questions. Anticipated emotions of success were measured by asking respondents: “If you *were able* to maintain a diet during the next week consisting in eating mainly fruits and vegetables and foods rich in dietary fibre, how would this make you feel?” Satisfaction-related emotions were measured by 4 items: satisfied, proud, happy, and worthy ($\alpha = .92$). Relaxation-related emotions were measured by four indicators: calm, quiet, relaxed, and relieved ($\alpha = .90$). Responses were recorded on 7-point scales (1 “not at all” to 7 “extremely”). Anticipated emotions of failure were introduced by asking subjects: “If you *failed* to maintain a diet during the next week consisting in eating mainly fruits and vegetables and foods rich in dietary fibre, how would this make you feel?” Four indicators measured dissatisfaction-related emotions: dissatisfied, ashamed, sad, and unworthy ($\alpha = .91$). Agitation-related emotions were measured by nervous, agitated, anxious, and anguished ($\alpha = .95$). Responses were recorded with the same 7-point scales described above.

Attitudes. The attitudes toward maintaining the diet were measured on 5 semantic differential items, introduced by: “For me personally, maintaining a diet during the next week consisting in eating mainly fruits and vegetables and foods rich in dietary fibre, could be described as”: The 5 semantic differential items were bad-good, punishing-rewarding, negative-positive, ineffective-effective, and foolish-wise ($\alpha = .96$) and 7-point response scales were used.

Results

Descriptive statistics are shown in Table 1. To test for the adequacy of anticipated emotions measures, we factor-analysed the 16 items, and obtained 4 factors representing satisfaction, relaxation, dejection, and agitation anticipated emotions.⁴

The moderating effects of chronic prevalence of the two self-regulatory systems were tested by a multiple regression with appropriate product term composites (Cohen, 1978). Variables were mean centred to allow a proper interpretation of interaction and main effects (Cronbach, 1987). Evaluations, expressed as attitudes toward the diet, were regressed on anticipated satisfaction, relaxation, dejection, and agitation, the BIS – REW difference score, and four product terms representing interactions among prevalence of regulatory focus and anticipated emotions (BIS – REW \times satisfaction, BIS – REW \times relaxation, BIS – REW \times dejection, BIS – REW \times agitation). The variance accounted for by the regression model ($R^2 = .55$) was significant: $F(9, 206) = 27.48, p < .001$. A significant main effect of anticipated satisfaction on attitude toward the act was detected ($\beta = .70, p < .00$), showing that the higher the anticipated satisfaction linked to success in keeping the diet, the higher the evaluation of maintaining the diet. Two interactions turned out to be significant. Recall that higher scores on the BIS – REW variable indicate prevalence of the prevention focus, and lower scores prevalence of the promotion focus. Prevalence of regulatory focus interacted positively with anticipated agitation ($\beta = .36, p < .00$), and negatively with anticipated dejection ($\beta = -.31, p < .00$). No other significant interactions or main effects were found.⁵

⁴To provide further evidence of the adequacy of the 4-factor solution, confirmatory factor analysis models comparing a 2-factor valence based solution with the expected 4-factor solution were run. A comparison between models showed that the 4-factor solution fits the data satisfactorily and better than the 2-factor model: $\chi^2_{\text{diff}}(2) (N = 216) = 826.16, p < .001$. All adjectives loaded highly and significantly on their respective factors.

⁵We preferred to use a single index summarising prevalence of one of the two regulatory foci instead of analysing separately BIS (Prevention focus) and Reward Responsiveness (Promotion focus) interactions with anticipated emotions. Using this latter strategy yields results and conclusions highly similar to those yielded by the difference index; we prefer reporting the index-based results to maximise the comparability of the reported results across the two studies.

TABLE 1
Zero-order correlations, means, and (standard deviations) for Study 1 variables (N=216)

	1	2	3	4	5	6	7	8
1. Attitude	1							
2. BIS	.21*	1						
3. BAS Reward Responsiveness (REW)	.08	.18*	1					
4. BIS - REW	.10	.66**	-.61**	1				
5. Anticipated Satisfaction	.70**	.17*	.16*	.01	1			
6. Anticipated Relaxation	.42**	.05	.04	.02	.62	1		
7. Anticipated Dejection	.28**	.17*	-.03	.16*	.41**	.37**	1	
8. Anticipated Agitation	.21*	.13	-.06	.15*	.35**	.49**	.74**	1
<i>M (SD)</i>	4.86 (1.67)	3.64 (0.62)	4.30 (0.58)	-0.66 (0.77)	4.55 (1.62)	3.27 (1.48)	3.11 (1.60)	2.41 (1.50)

BIS - REW, BIS - Reward Responsiveness difference score. * $p < .05$; ** $p < .001$.

The directions of the two interactions support our hypotheses. When a prevention focus is prevalent, more intense failure-related anticipated agitation induces more positive evaluations, and when a promotion focus is stronger, more intense failure-related anticipated dejection leads to more favourable evaluations of the diet. To disentangle further the interactions, the BIS – REW score was dichotomised at the median to obtain a new variable of prevalent focus identifying a group of individuals regulated by the prevention focus ($N = 106$), coded “1”, and a group of individuals regulated by promotion focus ($N = 110$), coded “0”. Then regression equations having anticipated agitation or anticipated dejection at their maximum level (7) and their interactions with the dichotomised variable were analysed (Aiken & West, 1996). By using this procedure, the unstandardised regression coefficient for the dichotomous variable of prevalent focus represents the difference in the attitude score among the promotion and the prevention groups (holding constant effects of the other predictors), and the t -test for this coefficient shows the significance of the difference (Overton, 2001). We use extreme values of anticipated emotions because in moderated regression the meaning of the interaction involving at least one continuous variable is often diffuse along the scores (McClelland & Judd, 1993), and therefore could be difficult to interpret it focusing on non-extreme values.⁶ Figure 1 summarises the interactions.

As expected, intense agitation-related emotions (anxiety) to the prospect of failure in keeping to the diet were associated with more favourable attitudes in individuals with a prevalent prevention focus ($M = 5.72$) than for participants with a stronger promotion focus ($M = 3.16$). This difference was significant $t(206) = 3.05$, $p < .01$. On the other hand, anticipated dejection-related emotions lead to more favourable ($M = 5.86$) evaluations of the diet for promotion focused individuals than for prevention focused participants ($M = 4.46$). This difference was also significant, $t(206) = 2.11$, $p < .04$. No effects involving positive anticipated emotions were found.

Discussion

Self-regulatory focus moderated the relations among two negative anticipated emotions and evaluations of the act. The patterns of these significant interactions are consistent with the theoretical predictions under the self-regulatory systems proposed by Higgins (1996a, 1996b). As shown by our findings, the impact of

⁶ Interactive effects resulting from non-experimental moderated regression models are generally weaker than those found in experimental ANOVA models (McClelland & Judd, 1993). Also the interactions reported here are not very strong in magnitude. Using an extreme value of one of the interacting variables can further highlight the core meaning of the interaction for such moderate to weak effects. Although such extreme emotions might be less common for the behaviours investigated herein, the meaning of the interaction is more clearly conveyed with this approach.

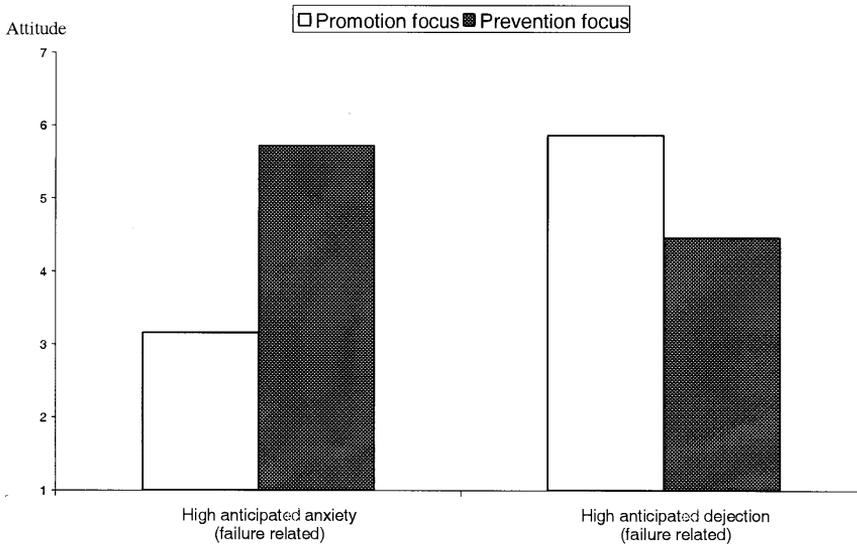


Figure 1. Study 1: Interaction between regulatory focus and anticipated emotions.

emotions on evaluations depends on chronic self-regulatory individual differences: Failure-related dejection and agitation emotions lead to more favourable evaluations for individuals with a prevalent promotion and prevention focus, respectively.

No symmetric effects for positive emotions were found. Chronic regulatory foci did not moderate the impact of success-related satisfaction and relaxation emotions on evaluations. This result represents an intriguing asymmetry involving the self-regulation of positive and negative anticipated emotions. Asymmetric motivational effects of positive and negative emotions have been theorised in the literature (Carver, 2003; Fredrickson, 2001). Conclusions about such asymmetries within regulatory focus theory cannot be made based on a single study, so we sought a replication of the results in Study 1 through our second study.

STUDY 2

To assess the generalisability of our results, we tried to replicate the findings in Study 1 by changing the behavioural domain and by manipulating the momentary accessibility of regulatory foci, instead of measuring their chronic prevalence. The behaviour used in Study 2 was “seeking out social occasions to meet new people”. To increase the momentary accessibility of one self-regulatory focus, the act was framed either as a means to achieve a promotion goal, or as a means to pursue a prevention goal. As in Study 1, anticipated

emotions and attitudes toward acting were also measured. We expected that, among individuals showing intense anticipated satisfaction and dejection emotions, those exposed to the promotion focus goal frame should evaluate more favourably doing the act than those in the prevention focus condition; whereas individuals showing intense anticipated relaxation and agitation emotions should evaluate more favourably the act in the prevention focus condition, compared with individuals in the promotion focus condition. However, as in Study 1, we were alerted to the possibility of a lack of interactions for the positive emotions.

Method

Participants and procedure

A total of 299 individuals participated in the study. The participants were tourists whose native language was English and who were spending their vacations in Rome and Florence, Italy. The sample included 123 men and 176 women, with ages ranging from 14 to 70 ($M = 29.95$, $SD = 11.71$). Participants were approached in museums and nearby monuments and asked to fill out a questionnaire concerning, “how people think about themselves, and their opinions concerning some everyday behaviours”. The questionnaire began first with a brief frame where goals related to prevention or promotion focus were outlined. The behaviour investigated was framed either as a promotion goal or as a prevention goal:

It is not sufficient to remain in the same social circle if you want to *prevent a monotonous social life* [if you want to *achieve an active social life*]. It is necessary rather to *avoid socialising with just the same people* [to *socialize with other people*], so as to *prevent yourself from having a low quality of life* [to *maintain a high quality of life*]. This can be made possible by seeking out social occasions with new people. Evidence shows that 80% of people who adopt this approach avoid a low quality of life [report a higher quality of life], compared with 20% of those who do not. Therefore, failing to seek out different social occasions [seeking out different social occasions] will restrict you from meeting new people [can help you to meet new people]. This in turn will prevent the widening of your social circle, thus resulting in an unavoidably low quality of life [thus widening your social circle and resulting in an overall higher quality of life].

The two goal frames put the same behaviour (“seeking out social occasions...”) in two different goal settings. In the prevention focus condition, the behaviour was suggested as a means to “avoid socialising with just the same people” and to “prevent... having a low quality of life”. In the promotion focus condition, the goal described was to “achieve an active social life”, “socialise with new people”, and “maintain a high quality of life”. The framing of the two paragraphs emphasises a focus on the motivational concerns implied by prevention and promotion orientations.

Questionnaires including the two different paragraphs were administered randomly to participants. A total of 150 participants read the prevention framed paragraph, and 149 individuals read the promotion framed paragraph. After reading the goal frame, participants responded to some filler questions related to their vacation in Italy, before they completed measures of anticipated emotions of success and failure with respect to “seeking out social occasions to meet new people when you are back home”, and measures of their attitudes toward the behaviour.

Measures

Anticipated emotions of success and failure. Anticipated emotions of success were introduced by asking respondents: “If you *were able* to seek out social occasions to meet new people when you are back home, how would this make you feel?” Anticipated emotions of failure were introduced by asking subjects: “If you *failed* to seek out social occasions to meet new people when you are back home, how would this make you feel?” Two indicators for each anticipatory emotions were used: “happy” and “enthusiastic” for satisfaction-related emotions ($r = .72$); “calm” and “peaceful” for relaxation-related emotions ($r = .71$); “sad” and “dejected” for dejection-related emotions: ($r = .84$); “tense” and “anxious” for agitation-related emotions ($r = .82$). Responses were recorded on a 7-point scale (1 “not at all” to 7 “extremely”).⁷ *Attitudes* toward seeking out social occasions were measured by three semantic differential items with 7-point response scales, introduced by: “For me personally, seeking out social occasions to meet new people when I am back home, could be described as”: The semantic differential items were: bad/good, ineffective/effective, and foolish/wise ($\alpha = .81$).

Results

Responses of 4 individuals were eliminated from the analyses due to missing values, resulting in a total sample size of 295 (145 in the promotion condition, 150 in the prevention condition). Descriptive statistics are displayed in Table 2.

The moderating effects of the goal frames were tested by a multiple regression with appropriate product term composites (Cohen, 1978), variables were mean centred (Jaccard, Turrisi, & Wan, 1990). Attitudes toward the behaviour were regressed on anticipated satisfaction-, relaxation-, dejection-, and agitation-related emotions, the dummy coded variable representing the groups where the promotion goal (coded “0”) or the prevention goal (coded

⁷ As in Study 1, confirmatory factor analysis showed that a 4-factor solution was preferable over a 2-factor valence-based solution: $\chi^2_{\text{diff.}(2)} (N = 295) = 283.12, p < .001$. All adjectives loaded highly on their respective factor.

TABLE 2
Zero-order correlations, means, and (standard deviations) for Study 2
variables ($N=295$)

	1	2	3	4	5	6
1. Attitude	1					
2. Focus Manipulation	.09	1				
3. Anticipated Satisfaction	.50**	.04	1			
4. Anticipated Relaxation	.25**	-.01	.28**	1		
5. Anticipated Dejection	.32**	-.12*	.34**	.14*	1	
6. Anticipated Agitation	.21**	-.04	.21**	.33**	.67**	1
<i>M</i>	5.21	–	5.32	3.50	3.32	2.49
<i>(SD)</i>	(1.14)		(1.14)	(1.40)	(1.73)	(1.51)

Note: Promotion manipulation was coded “0”; Prevention manipulation was coded “1”. * $p < .05$; ** $p < .001$.

“1”) was framed, and four product terms representing interactions among goal frame and anticipated emotions. The variance accounted for by the regression model ($R^2 = .32$) was significant: $F(9, 285) = 15.02, p < .001$. As found in Study 1, a main effect of anticipated satisfaction on act evaluation was detected ($\beta = .38, p < .00$), showing that the higher the anticipated satisfaction linked to success in seeking social occasions to meet new people, the more favourable the evaluation of performing the behaviour. As in Study 1, two interactions turned out to be significant. Recall that a higher code was given to identify the group where the prevention goal was induced. Thus, consistent with our hypotheses, goal framing interacted negatively with anticipated dejection ($\beta = -.28, p < .01$) and positively with anticipated agitation ($\beta = .22, p < .03$) in predicting the evaluation of performing the behaviour. No other significant effects were found.

To disentangle more clearly the interaction (e.g., Aiken & West, 1996), evaluation scores were estimated in the two conditions when agitation- and dejection-related emotions were at their maximum level (7). The significance of differences in attitudes across conditions was provided by the t -test of the main effect of the dichotomous manipulation variable (Overton, 2001), holding constant the effects of the other predictors. Figure 2 displays the results. As hypothesised, individuals in the prevention focus goal frame with intense anticipated agitation showed more favourable attitudes ($M = 5.53$) than those in the promotion focus condition ($M = 4.68$). This difference failed to reach the two-tailed conventional ($\alpha = .05$) threshold for significance, $t(285) = 1.73, p < .09$, but it is significant using a one-tailed test, which is appropriate since our hypotheses were clearly directional. Further, it was expected and found that individuals in the promotion focus goal frame with intense anticipated dejection

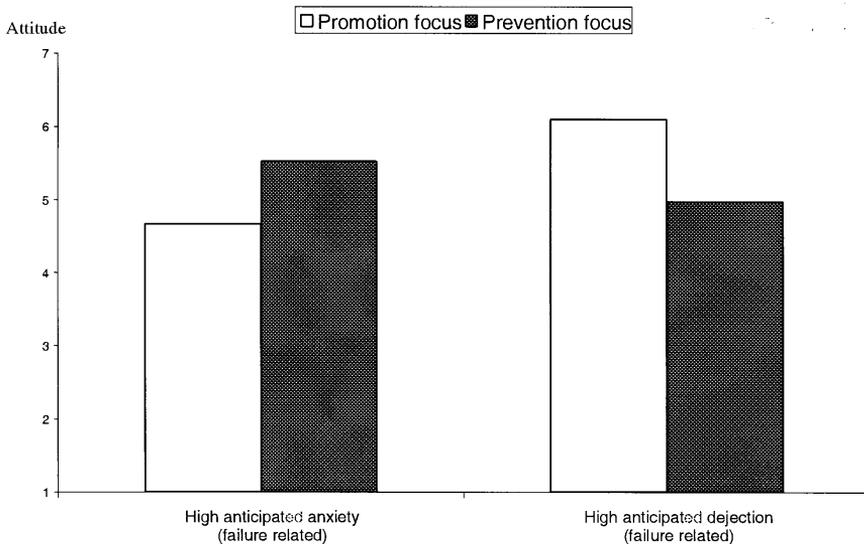


Figure 2. Study 2: Interaction between regulatory focus and anticipated emotions.

rated the act more favourably ($M = 6.13$) than participants in the prevention focus condition ($M = 4.98$). This difference was significant, $t(285) = 3.15$, $p < .01$. As in Study 1, no interactions involving positive anticipated emotions were found.

Discussion

The results of Study 2 closely parallel those reported for Study 1. In Study 2, promotion and prevention focus were made momentarily more accessible, whereas in Study 1 the chronic prevalence of promotion and prevention foci was measured as a dispositional orientation. High anticipated failure-related dejection lead to more favourable evaluations of doing the act, when the promotion focus was made momentarily more accessible, whereas high anticipated failure-related agitation was related to more favourable attitudes toward the act when the prevention focus was momentarily more activated. As in Study 1, no interactions were detected among regulatory focus and positively valenced anticipated emotions. The asymmetry in the results was consistent across two studies employing different participants, using an individual difference assessment vs. manipulation of regulatory foci, and different behaviours.

GENERAL DISCUSSION

Self-regulatory systems were hypothesised to moderate the influence of anticipated success- and failure-based emotions on attitudes toward an act. Two

studies showed that the two distinct self-regulatory systems moderate the impact of the intensity of agitation- and dejection-related emotions on people's evaluations of behaviour, as hypothesised. The interactions involving regulatory foci and positive emotions, however, were not supported by our data. This asymmetry deserves further discussion. We will first discuss the processes involved in the moderating effects detected in our studies, and then address the issue of asymmetry.

Regulatory fit and implicit goals

The hypotheses developed in this paper concerning agitation- and dejection-related emotions were confirmed across two studies. The significant interactions show a pattern that is consistent with the theoretical predictions under the self-regulatory systems proposed by Higgins (1996a, 1996b), and the approach and avoidance systems discussed by Carver and Scheier (1998). Participants under a promotion focus—dispositionally or situationally induced—evaluate the behaviours more favourably when they anticipate intense dejection-related emotions under the prospect of failure, compared with prevention focused participants. Prevention focused individuals anticipating intense failure-related agitation emotions rate the behaviours more favourably, compared with promotion focused participants.

These results clarify the conditions under which negative information impacts attitude processing. Individuals differ in their sensitivities to negatively valenced information. For some people (or in some situations), framing communication to trigger agitation-related emotions can be more effective, whereas for other people, targeting dejection-related emotions may prove more efficient. Previous research has not taken into account self-regulatory style as a moderator of evaluations during behavioural decision making, although the importance of differences in motivational orientations has been acknowledged (Raghunathan & Pham, 1999). Also, previous research has focused on general positive/negative affect (e.g., Elster, 1998; Zajonc, 1998), overshadowing the differences in appraisal processes and implicit goals typical of different emotions sharing the same valence. If we consider only broad categories of emotions, such as “negative affect”, subtle differences of the sort found in the present study may be overlooked.

Higgins' (2000) notion of regulatory fit may shed light on the processes responsible for the moderating effects we found. Individuals experience regulatory fit when the means they use to attain their goals match their motivational orientation. For promotion focused individuals, approach and eagerness means fit best, whereas for prevention focused people, avoidance and vigilance means fit best (e.g., Higgins et al., 1994). Regulatory fit can also increase the value of what individuals are doing (Higgins, 2000). This can happen retrospectively, where a person comes to value past decisions more to the extent that they had

greater regulatory fit, but it may also occur prospectively, where a person comes to value anticipated decisions more to the extent that they are expected to have greater regulatory fit (Idson, Liberman, & Higgins, 2000). The notion of fit between means and motivational concerns may be extended to fit between motivational concerns and anticipated emotions about outcomes. Thus, anticipated emotions may influence evaluation and decision, depending on the level of regulatory fit that the match between emotions and motivational concern may provide. A promotion focused individual, anticipating dejection failure-related emotions performing an act or achieving a goal, infers that the act or the goal matches his/her motivational concerns about the absence of positive outcomes. This regulatory matching may increase the value of the act, causing the person to see it as a pertinent means to serve his/her main motivational concerns. Thus, more favourable attitudes toward performing the behaviour should be expressed. Similarly, a prevention focused individual, anticipating intense agitation failure-related emotions performing an act or achieving a goal, infers that the act or goal is relevant for his/her motivational concerns, which are focused on avoiding negative outcomes. The fit between regulatory focus and anticipation of the right kind of negative failure-related emotions leads to a more favourable attitude toward acting. This is so because the individual is informed by anticipated failure-related agitation that performance of the act is a means serving his/her concern of avoidance of negative outcomes.

The fit between anticipated emotions and motivational orientation reflects on attitudes toward an act also because regulatory fit may provide the right level of activation for the decision maker (Higgins, 2000). Idson et al. (2000) showed that people experiencing regulatory fit between motivational orientation and means also feel more alert, and alertness was related with how good the evaluation of a choice was rated (Higgins, 2000). The notion of the effect of regulatory fit on activation may be applied to our findings. Participants who were prevention focused might have experienced heightened alertness after imagining that anticipated failure makes them feel anxious, whereas participants who were promotion focused might have experienced heightened alertness after imagining that anticipated failure makes them feel dejected. This state of alertness, albeit coming from different emotional appraisals, could have motivated promotion and prevention participants to express favourable attitudes toward acting. Emotions must not only reach a certain level of intensity to make the person alert, but emotions must also be of the right kind (i.e., emotions must fit one's motivational orientation). As shown by our results, intense failure-related dejection or agitation did not lead to favourable attitudes toward performing the behaviours when emotional anticipation failed to match the dominant regulatory concern.

Raghunathan and Pham (1999) used the notion of implicit goals to explain opposite decisions made by sad and anxious individuals. Facing a choice, individuals might ask themselves, "how do I feel about it?", and derive from

the answer “sad” or “anxious”, different mood-repairing goals to pursue: rewards to repair sadness, security to repair anxiety. This way of reasoning combines assumptions of affect as information (Schwarz & Clore, 1996) with insights from appraisal theories of emotions (Lazarus, 1991) and research on motivational orientations (e.g., Higgins, 1997). Our hypotheses, starting from regulatory foci theory and the notion of regulatory fit, also allow that our results may have been influenced by the “how do I feel about it?” heuristic. Participants in our studies could have inferred from the intense emotions elicited by prospects of failure that performance of the behaviour was important for them. However, the moderating effects of motivational orientation show that these inferences need to be based on anticipated emotions *matching* the individual’s *motivational orientation*.

Our results may also be interpreted on the basis of Raghunathan and Pham’s (1999) reasoning on implicit goals elicited by different emotional appraisals. Anticipated emotions of dejection and agitation might have stimulated different implicit goals; when these implicit goals matched the individual’s motivational orientation, they influenced attitudes toward the behaviours. Nevertheless, it is worth noting that Raghunathan and Pham (1999) proposed that differential effects on emotions sharing the same valence should be typical of choice situations among different alternatives (e.g., do “A” rather than “B”), but our results suggest that (anticipated) sadness and anxiety may also influence the *evaluation stage* of decision making. Thus, our research may also be considered a generalisation of Raghunathan and Pham’s (1999) results to other stages of decision making, and also as evidence supporting their focus on the importance of specific emotions and implicit goals during decision making.

Asymmetries

Relaxation- and satisfaction-related emotions did not interact with regulatory foci in the same fashion as did negative emotions. It would seem that regulatory foci theory should predict that regulatory foci govern both positive and negative emotional processes (e.g., Higgins, 1997). Although obviously no final conclusion can be drawn from our results, and further research is needed to investigate the intriguing asymmetries detected in our study, it appears likely that the asymmetries represent basic psychological processes in need of interpretation. Indeed, we interpret our results as indicative of asymmetries found in recent theories of emotions.

Cacioppo and Gardner (1999) propose that negative and positive emotional self-regulation are governed by different psychological processes. Asymmetries have been discovered in other areas of emotion research, including the effects of positive and negative moods on information retrieval (Isen, Shalcker, Clark & Karp, 1978), encoding (Nasby & Yando, 1982), and state-dependent learning

(Bartlett, Bursleson, & Santrock, 1982). Positive affect facilitates heuristic processing, while negative affect leads to systematic processing (Schwarz & Bohner, 1996). In general, robust evidence exists for the separability of effects for positive and negative affect (for a review, see Cacioppo & Gardner, 1999).

At a structural level, Isen (1984) speculated that positive affect is highly interconnected with other concepts in memory, while negative affect is less well connected with other concepts in memory. These structural differences imply that positive emotions, when primed, activate more concepts than the priming of negative emotions. If this is correct, we speculate that priming of positive emotions related to success in performing a behaviour could activate evaluations toward acting. This could explain the strong main effects from anticipated satisfaction to evaluations found in our studies, which displaces or undermines effects from self-regulation via prevention/promotion focus. In contrast, the priming of negative emotions related to failure may not have directly activated attitudes because of the relative isolation or weak links that negative affectivity has with other material stored in memory (Isen, 1984). Hence, no main effect from negative anticipated emotions arose, and the two self-regulatory systems moderated the impact of intense agitation and dissatisfaction on evaluations.

Another implication of the structural differences pointed out by Isen is that negative emotions narrow attention, whereas positive emotions broaden attention (Fredrickson, 1998). Such negative emotions as anxiety and dejection adaptively narrow attention to make sure a specific threat or problem is dealt with adequately. Regulatory systems need to be involved in the management of negative emotional information, since the person should be ready to exert the most adequate behaviour to face the situation that originated the negative emotional response. Anxiety and fear in response to a threat signal the need to react appropriately by fighting or fleeing. Sadness, frustration, and dejection in response to frustration communicate a need to either increase effort towards goal striving, or change the approach taken in goal striving. Regulatory systems play a fundamental role directing the individual to the right emotional and behavioural reactions appropriate to deal with different unsatisfactory and problematic states of affair. On the other hand, positive emotions suggest that *no* problem currently needs specific attention. Therefore, positive affect broadens attention, such that new goals and activities can be pursued (Carver, 2003). This attention broadening rests on the fact that no specific action tendency may be implied by positive affect (Fredrickson, 2001). Although feeling elated is different from feeling relieved, both positive emotions tell the individuals that no more effort need be exerted in the pursuit of a goal (because it has been attained). Therefore, regulatory systems are needed less for positive emotions, since there is no regulatory requisite to direct organismic resources to specific actions. It seems that self-regulation is more important in problematic situations than in pleasant situations, and this could explain the asymmetry of our results. Further research should test these hypotheses.

Limitations

Some limitations of the study should be acknowledged. First, the evidence reported in the two studies, albeit consistent, does not point to clear causal relationships. An alternative model where the impact of attitudes on anticipated emotions is moderated by regulatory focus cannot be empirically or logically ruled out. However, we think that the direction we propose here (from anticipated emotions to attitudes) is consistent with such theories as the affect as information model (e.g., Schwarz & Bohner, 1996), and many general theories of emotions (e.g., Fredrickson, 2001; Frijda, 1986) which consider emotions as the starting point for deliberations, evaluations, and actions. A second limitation of the design is the absence of a control group with no focus framing. A third limitation may be the use of proxies of chronic availability of regulatory foci (BIS/BAS scales) instead of more direct assessment of the two constructs (Higgins et al., 2001). Nevertheless, the consistent results obtained across the two studies seem to mitigate this concern. Moreover, we provided some rationale suggesting that the BIS/BAS can be considered as functionally equivalent to prevention and promotion foci, at least for the processes investigated herein.

Conclusions

Our studies were designed to examine the moderating role of regulatory focus on the impact of anticipated emotions of success and failure on action evaluations. The results show that motivational concern moderates the association between failure-related dejection and agitation anticipated emotions and attitudes toward performing an act. It appears that negative emotions follow complex paths in their influence on the evaluative stage of decision making. The pervasiveness of emotional stress and emotional negativity in decision making contexts underscores the importance of understanding how negative emotional states influence decision making. Our results suggest that negative emotional anticipations can motivate evaluations in an adaptive way, pushing the decision maker to adopt behaviours capable of reducing or avoiding negative events.

Our studies also detected an important asymmetry on how regulatory systems manage the impact of anticipated emotions on evaluations. Some arguments that may explain this asymmetry have been provided above, but more research is needed on this issue. Clearly, both positive and negative emotions have motivational content (Fredrickson, 1998), but the motivational forces they convey follow very different paths and serve different purposes. These asymmetries need to be understood to build a general and comprehensive model of motivation, affect, and decision making (Carver, 2003; Fredrickson, 2001).

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