The Regulatory Focus Strategies Scale (RFSS): A Measure of Individual Differences in the Endorsement of Regulatory Strategies

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Abstract

Regulatory focus theory (Higgins, 1997) proposes that people can have a promotion or a prevention focus when pursuing goals and choosing strategies. The Regulatory Focus Strategies Scale (RFSS), a scale that assesses the endorsement of promotion and prevention strategies for goal-pursuit, is developed and validated in three studies. Exploratory and confirmatory factor analyses in Australia and Japan showed that promotion- and prevention-focused strategic endorsement formed two largely uncorrelated factors. The RFSS exhibits adequate reliability, and discriminant and convergent validity. A cross-cultural comparison showed that Australians were more promotion- but less prevention-focused than Japanese students. The RFSS provides an additional measure that is useful in future research on self-regulatory strategies.

The Regulatory Focus Strategies Scale (RFSS): A Measure of Individual Differences in the Endorsement of Regulatory Strategies

Humans direct activities toward *goals* by devising *strategies* designed to attain them. Goal-directed activities can be regulated by focussing on their different aspects. Regulatory focus theory (Higgins, 1997, 1998) suggests that there are two distinct forms of self-regulation, *promotion* and *prevention*. Promotion-focused self-regulation involves concern with the presence and absence of positive outcomes (gains and nongains); prevention-focused self-regulation involves concern with the absence or presence of negative outcomes (nonlosses and losses). Although the goals toward which activities are directed can be construed in terms of gains or losses, RFT is also applicable to the construal of *strategies*, and distinguishes two *strategies* for goal attainment, eagerness and vigilance (Crowe & Higgins, 1997; Higgins, 1997, 1998). Eagerness is a strategy which ensures the presence of positive outcomes (i.e., hits) against their absence (i.e., misses) whereas vigilance is a strategy which ensures the absence of negative outcomes (i.e., correct rejections) against their presence (i.e., false alarms) (Crowe & Higgins, 1997). Eager strategies, such as taking risks and tackling obstacles, are promotion focused whereas vigilant strategies, such as being careful and avoiding possible problems, are prevention focused.

Although regulatory foci can be temporarily induced by situational demands (e.g., Freitas & Higgins, 2002; Higgins, Roney, Crowe, & Hymes, 1994; Liberman, Molden, Idson, & Higgins, 2001; Shah & Higgins, 2001), there are stable individual differences in tendencies to engage in promotion- and prevention-focused goal-directed activities (e.g., Higgins, Friedman, Harlow, Idson, Ayduk, & Taylor, 2001; Shah &

Higgins, 1997). Existing measures of individual differences in regulatory focus (e.g., Higgins et al., 2001; Lockwood, Jordan, & Kunda, 2002) are largely concerned with how people construe their *goals* in terms of these self-regulatory forms (see below). The present paper reports the development and validation of a scale that assesses individuals' beliefs that promotion- and prevention-focused self-regulatory *strategies* lead to goal attainment, the *Regulatory Focus Strategies Scale* (RFSS; cf. Higgins et al., 2001; Lockwood et al., 2002). We also examine cross-cultural variation in regulatory strategy endorsement using the new measure.

The Measurement of Regulatory Focus

Different methods have been used to measure promotion- or prevention-focused self-regulatory predilections. Early studies (e.g., Higgins & Tykocinski, 1992; Higgins et al., 1994) measured regulatory focus within the framework of self-discrepancy theory (Higgins, 1987), assuming that when individuals think about the things they are trying to achieve (i.e., the ideal self-guide) or on the things they should be doing (i.e., the ought self-guide) a promotion- or prevention-focus, respectively, is induced. Strength of promotion focus was operationalized as the accessibility of ideal self-guide and strength of prevention focus as the accessibility of ought self-guide. Accessibility and concern with self-regulating with respect to a particular focus have also been inferred from the magnitude of any discrepancy between the actual self and appropriate self-guides, with larger discrepancies, assessed using the Selves Questionnaire (SQ; Higgins, Klein, & Strauman, 1985), being indicative of a stronger focus. Conceptually similar is Shah, Higgins, and Friedman's (1998) self-guide strength measure which uses residualized response latencies when listing ideal and ought self-guide attributes,

and Shah, Brazy, and Higgins's (2004) lexical decision version of this measure. The latter measure involves participants first listing ideal and ought attributes along with the ideal and ought attributes for four occupational groups, which are used as filler items in the subsequent lexical decision task (along with their ideal and ought attributes, and nonwords). Residualized latencies for responses to ideal and ought attributes are used as measures of promotion and prevention strength, respectively.

These techniques have one major drawback. They are time consuming, either to score (the SQ) or administer (the reaction time and reaction time/lexical decision task measures). A short, easy-to-use pencil-and-paper measure was developed by Higgins et al. (2001). The Regulatory Focus Questionnaire (RFQ) measures individual differences in regulatory focus based on subjective histories of success in attaining goals in a promotion- or prevention-focused manner. Promotion and prevention pride reflects the subjective history of promotion-focused and prevention-focused goal attainment, respectively. They reported adequate reliability for both scales, promotion pride, α = .73, prevention pride α = .80, respectively. The scales also demonstrate good convergent and discriminant validity (Higgins et al., 2001).

Finally, Lockwood et al. (2002) developed and used a scale that measures regulatory focus more directly by assessing individuals' chronic promotion or prevention goal concerns. The scale includes a heterogenous set of items that taps inclinations to focus on achieving success and positive outcomes or avoiding failure and negative outcomes, and tendencies of fulfilling hopes, aspirations, and ideals or of responsibilities and obligations. Lockwood et al. (2002) reported good reliability (promotion, α = .81; prevention, α = .75) and predictive validity. Individuals with promotion-focused goals are more strongly motivated by positive role models, whereas

those with prevention-focused goals are more motivated by negative role models (Lockwood et al., 2002; Lockwood, Chasteen, & Wong, 2005a; Lockwood, Wong, McShane, & Dolderman, 2005c; Lockwood, Sadler, Frynan, & Tuck, 2004).

These measures are either based on the theoretical assumption that the accessibility of ideal or ought self-guides should be associated with the regulatory foci, or questions of regulatory focus regarding the construal of *goals*. Although distinct goal-focused regulation reflects one aspect of individual differences, this can also be associated with distinct strategies for goal attainment. Promotion-focused individuals use eagerness strategies, such as taking risks, more frequently whereas prevention-focused individuals use more vigilant strategies, such as being cautious, more frequently (Crowe & Higgins, 1997). Similarly, an induced promotion focus is associated with risky responses whereas an induced prevention focus is associated with conservative ones (Friedman & Förster, 2001). Freitas and Higgins (2002) found that reported enjoyment when engaging in eagerness- or vigilance-related strategies was associated with participants' regulatory focus. Anticipated enjoyment was greater when strategy type matched regulatory focus than when it did not. Despite the prominence given to the study of self-regulatory strategies (see Higgins & Spiegel, 2004, for a review), no measure assesses people's endorsement of these strategies. The current studies develop and evaluate a measure of people's inclinations to use promotion- and prevention-focused regulatory strategies.

Cultural Differences in Regulatory Focus

Human action is goal-directed; however, the manner in which these activities are regulated varies across cultures. There is much evidence that people in Western

European-based (hereafter Western) cultures emphasize individuals' goal pursuit more than those with East Asian (hereafter Eastern) cultural backgrounds (e.g., Kashima, Kashima, Chiu et al., 2005; Kashima, Kokubo, Kashima, et al., 2004; Kashima, Yamaguchi, Kim et al., 1995; Markus, Uchida, Omoregie et al., 2006; Triandis, 1995). When children attain a goal, a typical Euro-American practice is to praise this success more than elsewhere in the world (e.g., LeVine, 1980; Whiting & Whiting, 1975), directing them to focus on success and positive outcomes. Given the similarity between the US and Australia (e.g., Kashima et al., 1995), this likely holds in Australia. In contrast, East Asian practices typically deflect praise to show appropriate humility (e.g., Lebra, 1976, Wierzbicka, 1996), leading to a down-play of positive outcomes. Given that an individual's predominant regulatory focus is associated with their socialization and interaction history with caregivers (Manian, Strauman, & Denney, 1998; Strauman, 1990), these cultural practices may have implications for individuals' predominant regulatory focus. Easterners are more likely to be prevention-focused and Westerners promotion-focused. Consistent with this analysis, Higgins, Pierro, and Kruglanski (under review) argued that culturally institutionalized social situations and socialization practices likely account for cultural differences in regulatory focus.

Lee, Aaker, and Gardner (2000) systematically investigated cultural differences in regulatory focus using scenarios portraying either individual or team goal-pursuit. Outcomes were framed either in terms of winning (a promotion-focused outcome) or losing (a prevention-focused outcome). In individual goal-pursuit, Chinese regarded not losing as more important than winning, whereas Americans rated winning and not losing equally important. In addition, Americans reported they would experience more intense promotion- (e.g., happy, proud) than prevention-focused emotions (e.g.,

relaxed, calm) if they had won whereas Chinese reported they would experience more intense prevention-focused (e.g., uptight, nervous) than promotion-focused emotions (e.g., disappointed) when they had failed. Together these results suggest that Chinese are more prevention- and less promotion-focused than Americans.

Similarly, Heine and Lehman's findings (1999) suggest that achieving promotion-focused goals is more important for Canadians than for East Asians. The failure to achieve one's ideals (i.e., larger actual:ideal discrepancies in self-discrepancy theory; Higgins, 1987) was more strongly related to depressive symptoms for European Canadians than for Asian Canadians and Japanese living in Japan.

Lockwood, Mashall and Sadler (2005b) found that Asian Canadians reported negative role models more motivating than European Canadians, and that regulatory focus mediated cultural differences in reactions to role models. Nonetheless, although they found that Asian Canadians were more concerned with prevention-focused goals than European Canadians, there was no culture difference in concern with promotion-focused goals.

Finally, Higgins et al. (under review) found that in the United States, individuals are higher in promotion pride than prevention pride whereas the reverse is the case in Japan. Interestingly, inconsistent with our assertion that Australia and the United States are similar in the extent to which they value success, they found no differences in promotion and prevention pride for their Australian sample. However, it is possible that the focus on success and positive outcomes in Australia, as in the United States, results in higher endorsement of promotion rather than prevention strategies for goal attainment.

However, several issues remain with regard to cultural variations in regulatory focus. First, all cultural comparative studies have operationalized regulatory focus as the construal of goals rather than of strategies. If child rearing practices are responsible for the cultural differences in adults' predominant regulatory focus, these cultural differences may generalize to strategies, but this has not been examined. Second, Lockwood et al.'s (2002) measure contains items about the importance of obligations and duties which may be core beliefs of collectivism (Oyserman, Coon, & Kemmelmeijer, 2001). Although collectivism may explain cultural differences in regulatory focus (Lee et al., 2000), a measure of regulatory focus needs to unconfound this from its explanatory concept. In the current studies, the RFSS was used to examine cultural differences in regulatory strategy endorsement between Euro-Australians and Asians living in Australia as well as Japanese living in Japan.

Study 1

The RFSS was designed as a measure of the extent to which individuals prefer two distinct types of self-regulatory strategy, eagerness and vigilance, which are associated with promotion-and prevention-focused self-regulation, respectively. People with a stronger promotion focus should believe that eager strategies, such as a willingness to take risks and to tackle possible problems or obstacles, lead to goal attainment whereas those with a stronger prevention focus should agree that vigilant strategies, such as being careful and avoiding possible problems or obstacles, lead to goal attainment. Based on a pilot study, 28 items were drawn from a larger initial item pool for Study 1. Half of the items described eager strategies (e.g., "To achieve something you need to be optimistic") whereas the remainder described vigilant

strategies (e.g., "Being cautious is the best policy for success"). Because a goal can be attained by achieving success and by avoiding failure, care was taken to have items reflecting both outcome types.

We examined the discriminant validity of the derived scales first by including Higgins et al.'s (2001) RFQ. The RFSS reflects individuals' beliefs that different regulatory strategies help them to achieve success or avoid failure, whereas the RFQ reflects an individual's outcome orientation based on their past subjective experiences of success or failure. Thus, the two scales assess different aspects of self-regulation and, as a result, should be largely statistically independent. Furthermore, higher promotion or prevention pride, which reflects personal history, may or may not imply an orientation to using promotion- or prevention-focused strategies, which may reflect cultural child-rearing practices. Thus, we expect the RFSS scales to correlate, at best, weakly with the RFQ scales.

Second, we included the Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965) because Moretti and Higgins (1999) found that self-esteem was related to actual:ideal discrepancy magnitudes, which have been used to measure chronic promotion focus (e.g., Higgins & Tykocinski, 1992; Higgins et al., 1994). This is not surprising as both actual:ideal discrepancy magnitudes and the RSES assess subjective appraisals of success at achieving promotion-focused goals, as does the promotion pride. Consistent with this interpretation, Higgins et al. (under review) found that RSES-assessed self-esteem was higher for predominantly promotion-focused individuals compared to those who are predominantly prevention-focused. However, as the RFSS assesses beliefs about the utility of self-regulatory strategies, we predicted

that promotion-focused strategy endorsement would show a weak relationship with the RSES.

To examine convergent validity, we included other measures expected to correlate with our strategy-based measures because they reflect individuals' ways of interacting with the world. The Life Orientation Test – Revised (LOT-R, Scheier, Carver, & Bridges, 1994) assesses optimism and pessimism. Grant and Higgins (2003) found optimism to be positively, and neuroticism negatively, associated with both promotion and prevention pride. We predicted that pessimism would be positively associated with prevention strategy endorsement as a pessimistic outlook would lead individuals, because they believe that things are likely to go wrong, to be more cautious and vigilant. In contrast, we predicted that optimism would positively correlate with promotion strategy endorsement because it reflects the tendency to be gregarious, assertive, and to seek excitement. Consistent with these predictions, Tamir, Chiu, and Gross (in press) found that individuals reported that emotions associated with a pessimistic outlook, specifically being worried, scared, and nervous, are useful for the pursuit of avoidance goals (e.g., avoiding making mistakes) compared to approach goals (e.g., being successful) whereas emotions associated with an optimistic outlook, specifically being excited, enthusiastic, and elated, are useful for the pursuit of approach goals (e.g., being successful).

We also included measures of extraversion and neuroticism (Rawlings, 2001). Higgins et al. (under review) argued that extraversion is a strategic channel for expressing promotion-focussed regulatory means (e.g., eagerness and enthusiasm) whereas neuroticism is an outcome characteristic that relates to feelings of tension, worry, and anxiety, that are associated with failures of the prevention regulatory system

(i.e., actual:ought self-discrepancies; Higgins, 1987). Thus, we predicted that extraversion would be associated with promotion strategy endorsement whereas neuroticism would be associated with prevention strategy endorsement.

Also included was the Behavioral Inhibition/Activation Scales (BIS/BAS, Carver & White, 1994). Harlow, Friedman, and Higgins (1997, cited in Higgins et al., 2001) found that promotion pride was positively associated with the Reward Responsiveness and Fun Seeking subscales of the BAS. In addition, we predicted that BIS subscale, which measures individual differences in sensitivity of the behavioural inhibition system, specifically to punishment, non-rewards, and novelty, would be related to prevention but not promotion strategy endorsement. Torrubia, Ávila, Moltó, and Caseras' (2001) Sensitivity to Punishment and Sensitivity to Reward Questionnaire (SPSRQ) was included because of its similarity to the BIS/BAS, assessing the functioning of the behavioural inhibition and activation systems. Accordingly, we predicted that sensitivity to reward (SR) would positively correlate with promotion strategy endorsement whereas sensitivity to punishment (SP) would correlate with prevention strategy endorsement.

Finally, we included Levy, Stroessner, and Dweck's (1998) measure of implicit theories of personality, which reflects the extent to which individuals believe that personality is fixed (entity theory) rather than malleable (incremental theory). Entity theorists expect high consistency in behaviour (Chiu, Hong, & Dweck, 1997; Dweck, 1999). Likewise, prevention-focused individuals avoid uncertainty and change, preferring the status quo, stability, and consistency (Liberman, Idson, Camacho, & Higgins, 1999). Thus, we predicted that prevention strategy endorsement would positively correlate with entity beliefs.

Method

Participants. Participants were 183 (53 males, 130 females) undergraduate students at the University of Melbourne, whose mean age was 21.25 years (*SD* = 4.37). One hundred and two indicated that they were Euro-Australian whereas 40 indicated they were Asian (Asian Australian or international students from East and South East Asian countries). The remaining 41 participants did not indicate their ethnicity. They participated as part of an unpaid laboratory class exercise.

Procedure. As part of a larger study, participants completed the measures of interest as well as questions about gender, age, and ethnic background, presented via computers during a laboratory class.

Measures. The initial *Regulatory Focus Strategies Scale* consisted of 28 statements, half describing promotion strategies and the other half describing prevention strategies. Participants were instructed that "there are a number of different ways in which we can achieve things important to us or avoid things that we don't want" and then asked to rate their agreement or disagreement with each statement on 5-point scales, from *strongly disagree* (1) to *strongly agree* (5).

The *Regulatory Focus Questionnaire* (RFQ, Higgins et al., 2001) is an 11-item measure assesses the frequency with which individuals believe they have been successful at self-regulating with regard to a promotion (promotion pride) and a prevention focus (prevention pride) from *never or seldom* (1) to *very often* (5). Both scales were reliable: promotion pride, $\alpha = .74$; prevention pride, $\alpha = .81$.

The *Rosenberg Self-Esteem Scale* (RSES, Rosenberg, 1965), a measure of global self-esteem, includes 10 items with which participants indicate their agreement

on 4-point scales, from *strongly disagree* (1) to *strongly agree* (4). The scale was reliable (α = .88).

The *Life Orientation Test – Revised* (LOT-R, Scheier et al., 1994) is a 6-item scale, used to measure pessimism and optimism (see Scheier et al., 1994). The items relate to expectations of favourable and unfavourable life outcomes on 5-point scales from *strongly disagree* (1) to *strongly agree* (5). The scales were reliable: optimisim, α = .70; pessimism, α = .72.

Extraversion and *neuroticism* were assessed using two subscales of a 38-item measure (Rawlings, 2001) of the Five-Factor Model (Costa & McCrae, 1992a). We chose this measure because of its brevity and strong convergent validity (Rawlings, 2001) with the NEO-PI-R (Costa & McCrae, 1992b). Participants indicate how descriptive each of 38 adjectives is of them on 5-point scales, from *not at all descriptive* (1) to *very descriptive* (5). Both the extraversion and neuroticism scales have seven items. They had adequate reliability: extraversion, α = .89; neuroticism, α = .88.

The *Behavioural Inhibition/Activation System scale* (BIS/BAS, Carver & White, 1994) assesses dispositional Behavioural Inhibition and Behavioural Activation sensitivities on four subscales. One assesses behavioural inhibition sensitivity (BIS), and the remainder, behavioural activation sensitivities, Drive (BAS-D), Reward Responsiveness (BAS-R), and Fun Seeking (BAS-F). The BIS measures reactions to the anticipation of punishment, the BAS-D, persistence in pursuit of desired goals, the BAS-R, responses to the occurrence or anticipation of reward, and the BAS-F, a tendency toward impulsivity and a willingness to take risks. All items are rated on 4-point scales, from *strongly disagree* (1) to *strongly agree* (4). The reliabilities were adequate: BIS, α = .77; BAS-D, α = .76; BAS-R, α = .71; BAS-F, α = .77.

The *Sensitivity to Punishment and Sensitivity to Reward Questionnaire* (SPSRQ, Torrubia et al., 2001) has two 24-item subscales, sensitivity to reward (SR) and sensitivity to punishment (SP), which tap the functioning of the BIS and BAS. The SR assesses the impulsivity dimension of the BAS whereas the SP assesses BIS functions, in particular, avoidance of possible aversive consequences and worry produced by threat of punishment. Although the original scale used yes-no responses, the items were rated on 5-point likert scales from *strongly disagree* (1) to *strongly agree* (5) for consistency, and the mean was calculated. These modified subscales were reliable: SP, $\alpha = .88$; SR, $\alpha = .79$.

Implicit theories of personality were assessed using an adapted version of Levy et al.'s (1998) measure. Four entity and four incremental belief (reverse scored) items on 6-point scales, from *strongly agree* (1) to *strongly disagree* (6). The scale was reliable ($\alpha = .89$).

Results and Discussion

Item Reduction. Based on the descriptive statistics, two items were excluded ("To avoid failure you need to be optimistic" and "You've got to be enthusiastic to achieve something") because the full scale had not been used. Similarly, one item "The best way to achieve something is to focus on how to succeed") was excluded because of moderate skewness (-1.27) and extreme kurtosis (3.01).

The scree plot of a principal component analysis of the remaining 25 items suggested a 2-component solution, which accounted for 33.24% of the variance. One factor reflected a 'promotion' component (14.0%) and the other 'prevention' (19.28%). When the items were resubmitted for a second analysis, with two components extracted

and rotated using oblimin with Kaiser normalization, all items loaded on the appropriate factors and there were no cross-loadings.

Only items with loadings higher than .4 on the corresponding component were selected for the final scale. We selected equal numbers of items framed in the two different ways of attaining a goal, "achieving success" and "avoiding failure", while avoiding repetition. The final scale consisted of 16 items, with half constituting the prevention strategies subscale, and the remainder, the promotion strategies subscale.

The 16 items were entered into a principal components analysis. Two factors were extracted and rotated using oblimin with Kaiser normalization. Again, factors that corresponded to the hypothesised promotion and prevention components emerged. They accounted for 39.21% of the variance, with the 'promotion' component accounting for 18.25% and the 'prevention' component 21.0%. None of the hypothesised prevention strategy items loaded on the promotion component and none of the hypothesised promotion strategy items loaded on to the prevention component. The final Regulatory Focus Strategies Scale (RFSS), with the item factor loadings, is shown in Table 1. As expected, the two factors were orthogonal, $r = .04$, *ns*. Both scales were reliable: promotion, $\alpha = .73$; prevention, $\alpha = .78$.

The mean scores for the promotion and prevention subscales were calculated. Because participants were a group of above average academic achievers, we expected that they would endorse promotion strategies more than prevention focused strategies.[1] This was the case. On average, promotion strategy endorsement was stronger ($M = 3.52$, $SD = .53$) than prevention strategy endorsement ($M = 3.26$, $SD = .56$) $t\ (182) = 4.59$, $p < .001$, $r = .32$.[2]

Convergent and Discriminant Validity. The promotion and prevention strategies subscales were correlated with the RFQ and other scales (see Table 2).[3] First, discriminant validity was indicated by the subscales' lack of correlations with promotion and prevention pride subscales. Although prevention strategy endorsement negatively correlated with promotion pride, no other correlations were significant. Not surprisingly, those who reported histories of successful promotion-focused goal-pursuit did not endorse the use of prevention-focused strategies.

As anticipated, self-esteem did not relate to promotion strategy endorsement, although it was positively correlated with promotion pride (Table 2). Thus, strategy-based regulatory focus is statistically independent of goal-based regulatory focus. In contrast, self-esteem negatively related to prevention strategy endorsement.

As noted above, promotion pride correlated positively with self-esteem, and negatively with pessimism. These variables moderately correlated with prevention strategy endorsement in the opposite direction, suggesting that they may be acting as third variables producing a spurious negative correlation between promotion-pride and a prevention strategy endorsement. To investigate this possibility, we controlled for pessimism and self-esteem. The partial correlation between promotion pride and prevention strategy endorsement was not significant, $pr = -.09$. Thus, the RFSS appears to measure a distinct dimension of regulatory focus that is not tapped by the RFQ (Higgins et al., 2001).

The RFSS measures of promotion- and prevention-focus strategy endorsement showed, for the most part, the expected pattern of correlations with other variables. The LOT-R optimism subscale correlated positively with the promotion, but not prevention, strategy endorsement, and the LOT-R pessimism subscale correlated positively with

prevention, but not promotion, strategy endorsement. Extraversion positively correlated with the promotion, but not prevention, strategy endorsement whereas neuroticism positively correlated with the prevention, but not promotion, strategy endorsement.

Responses to the BIS/BAS subscales showed the expected pattern of correlations. The BIS correlated positively with prevention strategy endorsement but not with promotion strategy endorsement, providing evidence of the scales' convergent validity. Likewise, the three BAS subscales correlated with promotion strategy endorsement. This is not surprising as items on BAS-D relate to persistent pursuit of desired goals (i.e., an eagerness and approach orientation), whereas those on the BAS-F reflect a tendency toward impulsivity and a willingness to take risks, and those on the BAS-R items reflect positive responses to the occurrence or anticipation of goal achievement.

The BAS-R also correlated positively with prevention strategy endorsement, although to a lesser extent than with promotion strategy endorsement. This result was unexpected. However, it is understandable given our conceptualization and operationalization of strategy-based regulatory foci, specifically that promotion- and prevention-focus strategies are adopted to both *achieve success* and to *avoid failure*. This is consistent with our assumption that prevention-focused strategies can be used to achieve success, which highly reward sensitive individuals would pursue.

The two subscales of the SPSRQ also showed the expected pattern. Scores on the SP scale, which is indicative of BIS functioning, positively correlated with prevention, but not promotion, strategy endorsement. Not surprisingly, this subscale positively correlated with BIS. Similarly, the SR subscale, indicative of BAS

functioning, positively correlated with prevention, but not promotion, strategy endorsement, and with the three BAS scales.

Also consistent with predictions, entity theory beliefs positively correlated with prevention, but not promotion, strategy endorsement. Beliefs that people's dispositions cannot be changed are associated, at least in the social and interpersonal domains, with the notion that one pursues goals vigilantly while taking due precautions.

Higgins et al. (2001) reported that promotion and prevention pride do not differ as a function of gender. Accordingly, we predicted there would be no gender differences in promotion and prevention strategy endorsement, which was the case (see Table 3). Gender differences were only found for the BIS and the RSES. Consistent with previous findings (e.g., Carver & White, 1994; Rosenberg, 1965), females scored higher on the BIS, and had lower self-esteem, than males.

Cultural Differences in Regulatory Focus. Only data from participants who identified themselves either as Euro-Australian (N = 102) or Asians (N = 40) were included in this cross-cultural analysis. As predicted, Asians scored significantly higher on prevention strategy endorsement than Euro-Australians, t (140) = -3.39, p. < .001, r = .28 (see Table 3). However, consistent with Higgins et al. (under review), there was no difference in Promotion or Prevention Pride for our Euro-Australian sample, t (102) = 1.13, p = .261, r = .10.

Consistent with past research in North America (e.g., Lee et al., 2000), Asians were also more sensitive to punishment and lower in self-esteem than Euro-Australians. Interestingly, they more strongly endorsed promotion strategies than Euro-Australian participants, t (140) = -2.19, p. < .05, r = .18. Thus, our Asian sample not only endorsed being cautious and watching out for potential obstacles during goal pursuit, but were

also more willing to take risks, to be optimistic, and not worry about making mistakes. They also scored higher on BAS-D. It appears that in Australia Asians may retain their cultural practice of being strategically prevention-focused but they are also strategically promotion-focused.

There are two potential explanations with regard to the Asian's promotion strategy endorsement. One is based on cultural learning and acculturation. Asians living in Australia may have acquired Australians' beliefs about the utility of promotion-focused strategies after they arrived in Australia. Some migrants "overshoot" their cultural hosts, by adopting the hosts' cultural norms even more than the hosts themselves (e.g., Rhee, Uleman, Lee, & Roman, 1995; Triandis, Kashima, Shimada, & Villareal, 1986). The other possibility is self-selection. Those Asians who come to Australia may be those who are willing to take risks, leaving their home country for education (international students or first generation migrants) or being raised by those who left their countries (second generation migrants). As a result, these students may have both prevention- and promotion-focused strategic orientations.

In summary, this study showed that our new scale, the RFSS, independently assesses individuals' endorsement of promotion- and prevention-focused self-regulatory strategies for achieving success and avoiding failure. The scale has good discriminant, convergent, and construct validity. The RFSS diverges from the most popular existing measure of goal-based regulatory focus, the RFQ (Higgins et al., 2002), and its promotion strategy subscale correlates with motivational and personality measures that reflect approach orientations whereas prevention strategy subscale correlates with those that reflect avoidance orientations. Finally, Asians living in Australia (be they migrants, the children of migrants, or international students) showed

higher levels of both promotion- and prevention-focus strategy endorsement than Euro-Australians, providing partial replication of previous findings.

Study 2

The purpose of Study 2 was to provide additional evidence for the two-factor structure of the RFSS, to establish the final version of the scale, and to examine the cross-cultural differences in regulatory focus. Because Study 1 had Asian participants living in Australia, it was important to compare Euro-Australians with Asians living in their home country. We addressed this by comparing an Australian and a Japanese sample.

Method

Participants. Participants were 133 students (94 women, 39 men), enrolled at the University of Melbourne, who had not participated in Study 1. Only participants who were either born in Australia or had lived in Australia for at least 10 years were included. One hundred and thirteen identified as Euro-Australians and 18 as Asian-Australians. The remaining two did not provide ethnicity information. They ranged in age from 17 to 60 years (M = 22.85 years, SD = 7.93). Given the small number of self-identified Asian-Australians, we included them in the "Australian" sample. Their inclusion should make it more difficult to find the predicted national difference and, therefore, make the test more conservative. The Japanese sample consisted of 177 undergraduate students (75 women, 105 men) from Hitotsubashi University, Tokyo, Japan. They ranged in age from 18 to 20 years (M = 19.57, SD = 1.14).

Procedure. The RFSS was translated to Japanese by a bilingual and backtranslated to English by another to ensure the comparability of content. The questionnaire was administered in pencil-and-paper form in English in Australia and Japanese in Japan. Participants completed a questionnaire containing the 16-item RFSS and demographic questions as part of a larger study.

Results and Discussion

Scale Properties and Item Reduction. First, the Australian data were analysed by entering the 16 items into a principal components analysis. Two factors were extracted and rotated using oblimin with Kaiser normalisation. They accounted for 35.77 % of the variance, with one factor accounting for 19.84% and the second for 15.93%. Although, as expected, all promotion strategy items loaded on the first factor and all prevention strategy items on the second, two prevention strategy items ("In order to achieve something you need to be realistic"; "If you think only about how to succeed, you are bound to encounter obstacles along the way") had loadings below .3 and had poor communalities (.083 and .042). They were dropped from further analyses.

The remaining 14 items were re-entered into a second principal components analysis. Two factors were extracted and oblimin rotated. The factors accounted for 40.34% of the variance, with the first accounting for 22.55% and the second 17.79%. As expected all promotion strategy items loaded on the first factor, and all prevention strategy items, on the second (see Table 4). The factors were orthogonal, $r = .04$. The subscales exhibited adequate reliability: promotion strategy endorsement, $\alpha = .75$; prevention strategy endorsement, $\alpha = .72$.

The Japanese data were subjected to a similar analysis. The 14 scale items were entered into a principal components analysis. Two factors were extracted and oblimin rotated. They accounted for 36.6% of the variance, with the first accounting for 20.38% and the second 16.22%. Generally, the loadings were comparable with the exception of item 5 (see Table 4) with promotion strategy items loading on the promotion factor and the prevention strategy items loading on the prevention focus factor. Again, the factors were orthogonal, r = .05. The subscales exhibited adequate reliability: promotion strategy endorsement, α = .61; prevention strategy endorsement, α = .73.

To examine the comparability of the factor structure in the two samples, we used two methods. First, following van de Vijver and Leung's (1997) recommendation, we computed the identity coefficient. Values higher than .95 are evidence for factor similarity (van de Vijver and Leung, 1997). The two principal components extracted in the two cultures were highly compatible with identity coefficients of .97 for the prevention and .95 for the promotion component.

Second, the 14 items were subjected to a confirmatory factor analysis. We "parceled" the items (see Table 4) to reduce the problem of non-normality in the data (Nasser & Wisenbaker, 2003; Yuan, Bentler, & Kano, 1997). We first fit the two factor model for the two samples without constraining the model parameters. This unconstrained model fit the data well: χ^2 (26) = 21.23, p. = .159; Bentler's (1990) comparative fit index (CFI) = .985; and the root mean square residual (RMSR) = .030. We then constrained the factor loadings to be equal between the two samples. This model's fit was equally good: χ^2 (22) = 24.45, p = .223; CFI = .988, and RMSR = .033, and was not significantly worse than that of the unconstrained model: $\Delta\chi^2$ (4) = 2.91, p. = .573. This suggests that the two factor model applies in both cultures sufficiently well

to conclude that the factor structure is cross-culturally equivalent. Under the constrained model, we estimated the factor correlation separately for the two samples: they were .011 (SE = .034) and .029 (SE = .020) for Australia and Japan, respectively. In both samples, the factors were uncorrelated.

Cultural Differences. A 2 (Regulatory Focus: Prevention vs. Promotion) x 2 (Culture: Australian vs. Japanese) x 2 (Gender: Male vs. Female) mixed ANOVA was conducted to investigate the predicted cross-cultural differences in promotion and prevention strategy endorsement. There was a significant main effect of Culture, F (1, 306) = 4.77, p = .03, partial η^2 = .015, r = .12, with Japanese participants scoring higher overall than Australian participants (see Table 5). More importantly, the predicted Strategy Focus by Culture interaction was significant, F (1, 306) = 37.32, p < .001, partial η^2 = .109. Simple main effects analysis revealed that Japanese participants more strongly endorsed prevention strategies, F (1, 309) = 39.81, p < .001, partial η^2 = .114, r = .34, and less strongly endorsed promotion strategies, F (1, 309) = 11.98, p < .001, partial η^2 = .037, r = .19, than Australian participants. The exclusion of Asian Australians from the Australian sample did not alter the findings.

The results for the prevention strategy endorsement mirror those of Study 1. However, those for promotion strategy endorsement do not. In Study 1, Asian Australian participants endorsed promotion strategies more strongly than Euro-Australian participants. The difference between these results and those of Study 1 probably reflects the fact that the present East Asian sample lived in their home country whereas those in Study 1 were Asians living in Australia. Interestingly, the cultural differences in prevention strategy endorsement were consistent across both Studies, further providing support for the construct validity of the RFSS.

The only other significant effect was a 2-way interaction between Strategy Focus and Sex that was not moderated by culture, F (1, 309) = 6.67, p = .01, partial η^2 = .021. Simple main effects analysis revealed that, inconsistent with predictions and Study 1 results, males more strongly endorsed prevention strategies, F (1, 309) = 13.55, p < .001, partial η^2 = .042, r = .20, and less strongly endorsed promotion strategies, F (1, 309) = 5.20, p = .023, partial η^2 = .017, r = .13, than females.

As the final scale included more items that reflect the use of promotion strategies for achieving success than the other three item types, we removed the two promotion/success items with lowest loadings on the promotion component (i.e., items 5 and 13) to balance the item content. This new six-item scale gave similar results to the eight-item version, in that there was main effect of Culture and a 2-way interaction of Strategy Focus and Culture. Although the interaction of Strategy Focus and Sex was no longer significant, the poor reliability with the Japanese sample (α = .54) made this result rather difficult to interpret. On balance, we decided that retaining the two lower-loading items in the final scale was warranted.

The results of this study support the classification of the self-regulatory strategies that can be used for achieving success or avoiding failure into two distinct types, those that are promotion-focused and those that are prevention-focused, and that the degrees to which individuals endorse their use differ meaningfully across cultures.

Study 3

The third study was designed to confirm the factor structure of the RFFS, specifically that the structure based on promotion- and prevention-focused regulatory strategies provides a better fit than that constructed on the basis of goals, that is,

whether the item refers to achieving success or avoiding failure. One could argue that achieving success and avoiding failure reflect goal-based promotion and prevention foci, and that this distinction may reflect the underlying latent variables measured by the RFSS. To rule out this possibility, the fit of the two models was compared. A third, a single factor model was included for comparison as a rival hypothesis to a two factor model.

To further validate the RFSS, its relationship with RFQ was examined again. Gender and cultural differences were also examined. We made no predictions about gender differences given the contradictory findings in Studies 1 and 2. We predicted that Asian participants would more strongly endorse prevention strategies than Euro-Australian participants; however, we left the question of cultural differences in promotion strategy endorsement as exploratory because the Asian participants in this study were living in Australia.

Method

Participants and Procedure. Participants were 410 (308 women, 102 men) undergraduate students at the University of Melbourne, Australia, who had not participated in Studies 1 or 2. Two hundred and forty-nine were born in Australia and 161 elsewhere, with 104 born in East Asian or South East Asian countries, and 47 elsewhere. Participants ranged in age from 18 to 52 years (M= 21.66, SD = 5.16). As in Study 2, the questionnaire consisting of the RFSS and the RFQ was presented in pencil-and-paper format and was completed during a psychology class. Participants also provided age and sex information.

Results and Discussion

Confirmatory Factor Analysis. The predicted 2-factor structure (Model 1), based on the endorsement of prevention and promotion strategies, was compared to the alternative model (Model 2), a 2-factor structure based on goals (i.e., achieving success vs. avoiding failure). Based on the covariance matrix of the 14 items, identified in Study 2 as good indicators of promotion and prevention strategies, maximum likelihood estimations were obtained for Model 1 and 2. In this analysis, item parceling was not used as it would have prevented examining the independent effects of the strategic regulatory focus and outcome. For both models, first, each item was assumed to load on the hypothesized latent variable (promotion and prevention for Model 1, and achieving success and avoiding failure for Model 2), and then correlations between error terms within each latent variable were permitted for those parameters that indicated the modification index greater than 4.0. No correlation was permitted between errors for items hypothesized to load on different latent factors. Based on these criteria, for both models, eight correlations between errors were included. Table 6 presents the standardised regression coefficients for Model 1 and 2, χ^2, Bentler's (1990) comparative fit index (CFI), and the root mean square residual (RMSR). By all criteria, Model 1 better fit than Model 2. The standardized regression parameters for Model 1 were all positive and significantly different from zero. In contrast, the parameters for Model 2 were difficult to interpret with some parameters indicating negative signs.

The estimated correlation between the latent variables for Model 1 was -.18, which is significantly different from zero. This suggests that the two latent variables for Model 1, promotion- and prevention-focused strategy endorsement, are only slightly negatively correlated. To be certain about the adequacy of the two dimensionality of

Model 1, the correlation between the two latent variables were constrained to be -1 (the variances of these latent variables were fixed at 1). The overall χ^2 was 332.41. The difference between the two χ^2 statistics was 166.3, highly significant with 1 degree of freedom, suggesting that a unidimensional model (i.e., Model 3) is a significantly worse fit to the data.

Discriminant Validity. Consistent with Study 1 results, scores on the promotion and prevention strategy endorsement subscales did not correlate with promotion or prevention pride, all *r*s < .09, *ns.* This study, thus, provides further evidence that the RFSS reflects individuals' current regulatory strategy orientations towards achieving success and avoiding failure, whereas the RFQ reflects an individual's subjective history of success at promotion- and prevention-focused self-regulation. Clearly, the two scales measure different aspects of regulatory focus.

Cultural Differences. As in Study 1, to achieve a meaningful cultural comparison between groups we used only Australian- and Asian-born participants and excluded the data of participants who were born elsewhere. The ratings of promotion and prevention strategy endorsement were averaged across the two subscales. Consistent with Study 1 results, promotion strategy endorsement (M = 3.39, SD = .57) was stronger than prevention strategy endorsement (M = 3.24, SD = .65), t (409) = 3.27, p < .001, r = .16.

A 2 (Regulatory Focus: Prevention vs. Promotion) x 2 (Culture: Australian-born vs. Asian-born) x 2 (Gender: Male vs. Female) mixed ANOVA examined the predicted cross-cultural differences in promotion and prevention strategy endorsement. There was a significant main effect of Culture, F (1, 345) = 17.35, p < .001, partial η^2 = .048. Asian-born participants had higher scores overall than

Australian-born participants. This is consistent with that obtained in Studies 1 and 2. More importantly, the Regulatory Focus by Culture interaction was significant, F (1, 345) = 9.10, p = .003, partial η^2 = .026. Simple main effects analysis revealed that Asian-born participants endorsed prevention strategies more strongly than Australian-born participants, F (1, 353) = 30.97, p < .001, partial η^2 = .081, r = .28 (see Table 7). There was no significant difference between Asian and Australian participants in the endorsement of promotion strategies, F (1, 353) = .87, p = .351, partial η^2 = .002, r = .05. Finally, the main effect of gender and all its higher-order interactions were not significant.

Again, we checked the effect of removing the two promotion/success items with relatively low loadings on the component (i.e., items 5 and 13), making "balanced" scales. Their removal did not change the results in any way. However, again, the reliability of the scale was reduced (original scale, α = .67, reduced scale, α = .61). This confirmed the necessity of retaining these items in the scale.

General Discussion

The RFSS was designed to measure individual differences in beliefs about the utility of promotion- and prevention-focused self-regulatory strategies. In three studies, we developed and evaluated its psychometric properties. Overall, they provide substantial evidence for the reliability and validity of the two subscales of the RFSS: promotion and prevention strategy endorsement. The exploratory factor analysis of the 28 items used in Study 1 resulted in a 16-item version of the scale which was shortened to the final 14-item version in Study 2. Although balancing the content of the promotion subscale by removing two promotion/success items may be desirable under some

circumstances (i.e., when the success vs. failure outcome distinction is important), the removal of the items seem to lower reliability. We suggest the retention of all 14 items on balance.

As predicted, the RFSS subscales correlated with other measures of motivation and self-regulation. Importantly, correlations were strongest for scales reflecting behavioural dimensions of self-regulation, such as the BIS/BAS (Carver & White, 1994) and the SPSRQ (Torrubia et al., 2001) and weaker for scales reflecting goal-based regulatory focus, such as the RFQ (Higgins et al., 2001), and the RSES (Rosenberg, 1965). Moreover, promotion and prevention subscale scores correlated with measures that conceptually correspond; promotion strategy endorsement with measures of reflecting eager strategies and sensitivity to reward and prevention strategy endorsement with measures reflecting vigilant strategies and a sensitivity to punishment. However, they did not correlate with promotion or prevention pride or the RSES, providing support for our assumption that the RFSS assesses different regulatory focus aspects to those assessed with outcome-based measures.

The cultural comparisons demonstrated that the RFSS discriminates between the regulatory focus of individuals from different cultural backgrounds. Prevention strategy endorsement was consistently stronger for Asian participants compared to Euro-Australian individuals, regardless of whether the Asian individuals are resident in Asia (i.e., Japan, Study 2) or in Australia (Studies 1 and 3). In contrast, promotion strategy endorsement was only stronger for Euro-Australians compared to Asians when the latter were living in their home culture. Although it is too early to say whether this is due to acculturation or self-selection, the results suggest that Asian cultures may have a strong cultural practice to use prevention-focused strategies.

Further research is needed to investigate whether the RFSS predicts behaviours. As the RFSS measures individuals' endorsement of promotion and prevention strategies, it should predict the type of strategy they adopt. The validity of the RFSS requires clear evidence of the link between the strength of endorsement of the two strategy types and the actual strategy type used in a range of situations. Thus, individuals who endorse the use of promotion strategies should be more likely to engage in riskier behavior whereas those who endorse the use of prevention strategies should be more likely to engage in vigilant behaviour.

Likewise, clear evidence is needed that when individuals are placed in situations in which they are required to make decisions, evaluate options, or respond to persuasive messages that are framed in terms of the two types of regulatory strategy, the "usual" regulatory fit results occur (e.g., Cesario, Grant, & Higgins, 2004; Higgins, Idson, Freitas, Spiegel, & Molden, 2003; Spiegel, Grant-Pillow, & Higgins, 2004). Regulatory fit occurs when a situation is framed in a manner that is consistent with the participants' chronic or temporarily induced regulatory focus. Thus, those with greater relative endorsement of promotion strategies should value the outcome of that decision more highly if they make decisions using promotion strategies than if they make decisions using prevention strategies. Similarly, decisions made using strategies that "fit" relative strategy endorsement should "feel right" relative to those made using strategies that do not "fit". Likewise, messages should be more persuasive when they are consistent with relative strategy endorsement.

In summary, the RFSS is a reliable and valid measure of promotion and prevention strategy endorsement. We believe it assesses strategy-based self-regulatory predilections and that it offers researchers a means of assessing these predilections that

complements existing goal-focused measures. This scale provides an additional tool for future regulatory focus studies.

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Table 1: Items, with factor loadings, for the Prevention Focus subscale and the Promotion Focus subscale of the final Regulatory Focus Strategy Scale (RFS) (Study 1).

Regulatory Focus Strategy Scale	Factor Loading
Prevention Strategy Items	
To achieve something, one must be cautious.	**.775**
To avoid failure, one has to be careful.	**.724**
Being cautious is the best policy for success.	**.713**
To achieve something, it is most important to know all the potential obstacles.	**.696**
Being cautious is the best way to avoid failure.	**.647**
To avoid failure, it is important to keep in mind all the potential obstacles that might get in your way.	**.509**
In order to achieve something you need to be realistic.	**.453**
If you think only about how to succeed, you are bound to encounter obstacles along the way.	**.404**
Promotion Strategy Items	
You have to take risks if you want to avoid failing.	**.671**
The worst thing you can do when trying to achieve a goal is to worry about making mistakes.	**.669**
Taking risks is essential for success.	**.659**
If you want to avoid failing, the worst thing you can do is to think about making mistakes.	**.603**
To achieve something, one must try all possible ways of achieving it.	**.548**
If you keep worrying about mistakes, you will never achieve anything.	**.540**
To achieve something, you need to be optimistic	**.502**
To avoid failure, you have to be enthusiastic.	**.422**

Table 2**:** Pearson's correlations for Prevention and Promotion Strategy Orientation, Prevention and Promotion Pride, Rosenberg Self-Esteem Scale, Life Orientation Test – Revised, Extraversion and Neuroticism, Behavioral Inhibition System /Activation System Scales, Sensitivity to Punishment and Reward Scales, and Personality Belief Scale (Study 1).

	Prom Focus	Prev Pride	Prom Pride	RSES	LOT_ opt	LOT_ pes	extra	neurot	BIS	BAS_ R	BAS_ D	BAS_ F	SP	SR	PBS
PrevFocus	.04	-.02	**-.31****	-.29	.02	.39	-.09	.19*	**.15***	**.16***	.06	-.13	**.35****	.00	**.25****
PromFocus		-.08	.07	.11	.50	-.02	**.28****	-.13	.00	**.24****	**.26****	**.27****	-.06	**.22****	.00
PrevPride			.06	.06	-.03	-.07	-.14	.03	**.15***	-.09	**-.38****	**-.31****	.11	**-.21****	.06
PromPride				**0.60****	.12	**-.57****	**.29****	-.31**	**-.20****	.04	**.17***	**.16***	**-.50****	.05	-.01
RSES					**.16***	**-.57****	**.38****	-.45**	**-.27****	**.18***	.13	.08	**-.52****	.11	-.02
LOT_opt						-.06	**.17***	-.11	-.05	**.17***	**.18***	.12	-.10	.02	-.04
LOT_pes							**-.19****	.24**	**-.16***	-.08	-.01	.02	**.40****	-.03	-.12
extra								-.36**	**-.26****	**.28****	**.31****	**.50****	**-.45****	.34**	-.07
neuroticism									.57**	-.03	-.10	-.23**	.59**	-.12	-.03
BIS										**.19****	**-.15***	**-.22****	**.57****	-.01	.11
BAS_R											**.36****	**.37****	.03	**.36****	**.15****
BAS_D												**.41****	**-.19****	**.31****	.06
BAS_F													**-.36****	**.42****	-.04
SP														.00	.03
SR															-.02

PrevFocus: Prevention Strategy Orientation; PromFocus: Promotion Strategy Orientation; PrevPride: Prevention Pride; PromPride: Promotion Pride; RSES: Rosenberg Self-esteem Scale; BIS: Behavioural Inhibition System scale; BAS-R: Reward Responsiveness; BAS-D: Drive; BAS-F: Fun Seeking; PBS: Personality Belief Scale.

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 3: Means and standard deviations for males and females, and Euro-Australian and Asian-Australian respondents, and Student's t-tests for differences between gender and ethnic background (Study 1).

	Gender					Ethnic Background				
	Males N = 53		Females N = 130			Euro-Australian N = 102		Asian-Australian N = 40		
	Mean	SD	Mean	SD	*t*	Mean	SD	Mean	SD	*t*
PrevFocus	3.20	.69	3.29	.50	-1.05	3.17	.56	3.56	.46	**-3.95*** **
PromFocus	3.53	.58	3.52	.52	.17	3.46	.56	3.68	.46	**-2.19***
PrevPride	3.22	.74	3.27	.71	-.39	3.34	.69	3.06	.65	**2.24***
PromPride	3.37	.51	3.30	.53	.79	3.44	.53	3.10	.47	**3.59*** **
BIS	20.19	3.14	22.10	2.89	**-3.95*** **	21.60	3.38	21.40	2.47	.34
BAS_R	15.72	2.11	16.15	1.90	-1.37	15.84	1.99	16.28	1.77	-1.20
BAS_D	10.08	2.23	10.32	1.85	-.77	10.02	1.96	10.93	1.91	**-2.50***
BAS_F	11.04	2.21	11.18	1.90	-.45	10.86	1.93	11.25	1.97	-1.07
LOT_opt	10.85	2.09	10.90	1.42	-.19	10.85	1.62	11.40	1.34	-1.90
LOT_pes	10.58	2.51	10.33	2.37	.65	10.78	2.33	9.98	2.07	1.92
RSES	30.85	4.57	28.41	4.71	**3.21****	30.06	4.79	27.98	4.60	**2.36***
PBS	3.56	.86	3.76	.68	-1.66	3.77	.80	3.59	.67	1.24
extra	3.66	.78	3.71	.81	-.35	3.75	.75	3.59	.97	.94

*** p< .001, **p< .01, * p< .05

Table 4: Study 2: Final RFSS scale items, with factor loadings for the Promotion Focus subscale and the Prevention Focus subscale for the Australian and Japanese sample.

Regulatory Focus Scale	Factor Loading	
	Australian	Japanese
Promotion Focus Subscale		
11. Taking risks is essential for success.$_{a}$	**.722**	**.480**
14. The worst thing you can do when trying to achieve a goal is to worry about making mistakes.$_{b}$	**.728**	**.647**
12. If you want to avoid failing, the worst thing you can do is to think about making mistakes.$_{c}$	**.650**	**.576**
5. To achieve something, you need to be optimistic$_{a}$	**.571**	**.251**
13. To achieve something, one must try all possible ways of achieving it.$_{b}$	**.557**	**.618**
6. You have to take risks if you want to avoid failing.$_{a}$	**.553**	**.356**
2. If you keep worrying about mistakes, you will never achieve anything.$_{c}$	**.506**	**.582**
10. To avoid failure, you have to be enthusiastic.$_{c}$	**.471**	**.383**
Prevention Focus Subscale		
15. Being cautious is the best policy for success.$_{d}$	**.795**	**.806**
9. To achieve something, one must be cautious.$_{e}$	**.713**	**.786**
1. Being cautious is the best way to avoid failure.$_{f}$	**.704**	**.748**
7. To achieve something, it is most important to know all the potential obstacles.$_{e}$	**.579**	**.522**
16. To avoid failure, it is important to keep in mind all the potential obstacles that might get in your way.$_{f}$	**.512**	**.523**
3. To avoid failure, one has to be careful.$_{d}$	**.501**	**.426**

Note: Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalisation. The items sharing the same subscript were parceled in the confirmatory analysis

Table 5: Means and standard deviations for Promotion and Prevention Strategy Endorsement for male and female participants, and for Australian and Asian participants (Study 2).

		Male	Female	Australian	Japanese
Promotion Strategy Endorsement	Mean	3.40	3.55	3.61	3.39
	SD	.56	.59	.65	.50
Prevention Strategy Endorsement	Mean	3.61	3.34	3.21	3.65
	SD	.62	.64	.66	.57

Table 6: Standardised structural parameter estimates from the confirmatory factor analyses for Model 1, a two factor model solution based on prevention and promotion strategy structure; Model 2, a two factor model solution based on approach and avoidance goal structure (Study 3).

	Items	Model 1		Model 2	
1	Being cautious is the best way to avoid failure.	V	.65	F	.70
2	If you keep worrying about mistakes, you will never achieve anything.	M	.47	S	-.18
3	To avoid failure, one has to be careful.	V	.74	F	.72
4	In order to achieve something you need to be realistic. (removed from analysis)				
5	To achieve something, you need to be optimistic.	M	.60	S	-.16
6	You have to take risks if you want to avoid failing.	M	.22	F	-.17
7	To achieve something, it is most important to know all the potential obstacles.	V	.33	S	.31
8	If you think only about how to succeed, you are bound to encounter obstacles along the way. (removed from analysis)				
9	To achieve something, one must be cautious.	V	.68	S	.70
10	To avoid failure, you have to be enthusiastic.	M	.56	F	-.00
11	Taking risks is essential for success.	M	.48	S	-.22
12	If you want to avoid failing, the worst thing you can do is to think about making mistakes.	M	.39	F	-.14
13	To achieve something, one must try all possible ways of achieving it.	M	.30	S	.19
14	The worst thing you can do when trying to achieve a goal is to worry about making mistakes.	M	.44	S	-.11
15	Being cautious is the best policy for success.	V	.81	S	.82
16	To avoid failure, it is important to keep in mind all the potential obstacles that might get in your way.	V	.33	F	.35
	X^2	166.1		287.2	
	df	68		68	
	CFI	.915		.818	
	RMSEA	.059		.087	

Note: M = promotion; V = prevention; S = success; F = failure.

Table 7: Means and standard deviations for Prevention and Promotion Strategy Orientations for male and female participants and for Australian-born and Asian-born participants (Study 3).

		Male N = 89	Female N = 308	Australian-born N = 259	Asian-born N = 104
Prevention Strategy	Mean	3.21	3.24	3.11	3.52
	SD	.68	.64	.64	.62
Promotion Strategy	Mean	3.36	3.40	3.36	3.42
	SD	.60	.55	.57	.60

Footnotes

[1] Entry into Australian public Universities is competitive, based on nation-wide achievement rankings. Students enrolling in the University of Melbourne, as a group, consistently have the higher rankings than those attending other Universities in the State of Victoria.

[2] Throughout we use Pearson correlation to assess effect size.

[3] Items of all scales with subscales were factor analyzed and items for each subscale loaded on the corresponding factors.