Unmotivated or Motivated to Fail? A Cross-Cultural Study of Achievement Motivation, Fear of Failure and Student Disengagement.

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Abstract

A classic distinction in the literature on achievement and motivation is between fear of failure and success orientations. From the perspective of Self-Worth theory, these motives are not bipolar constructs, but dimensions that interact in ways that make some students particularly vulnerable to underachievement and disengagement from school. The current study employs the Quadripolar Model of Need Achievement (Covington, 1992; Covington & Omelich, 1988) to explore how these approach and avoidance orientations are related to self-handicapping, defensive pessimism and helplessness in Eastern and Western settings. While there have been numerous calls for research of this kind across cultures (Elliot & Bempechat, 2002; Jose & Kilburg, 2007; Pintrich, 2003), little exists in the field to date. In Study 1 with 1,423 Japanese high school students, helplessness and self-handicapping were found to be highest when students were low in success orientation, and high fear in failure. These findings were also replicated in Study 2 with 643 Australian students and extended to measures of truancy, disengagement and self-reported academic achievement. Consistent with Self-Worth theory, success orientation largely moderated the relationship between fear of failure and academic engagement in both cultures. These results suggest that in the absence of firm achievement goals, fear of failure is associated with a range of maladaptive self-protective strategies. The current project thus represents a unique application of Self-Worth theory to achievement dynamics and clarifies substantive issues relevant to self-handicapping and disengagement across cultures.

Key words: Fear of Failure; Achievement; Motivation; Self-handicapping; Defensive pessimism.

Unmotivated or Motivated to Fail?

Fear of Failure and its Consequences in Australia and Japan.

All students, even the seemingly unmotivated, care about being seen as competent and able in the eyes of others. And yet, despite the undeniable benefits of trying hard, effort puts students at risk – success without trying can indicate one has talent, but failure following effort is often viewed as compelling evidence that one lacks ability. In evaluative contexts when students are concerned with the implications of failure, they can thus seek to avoid failure by succeeding, or they can manage these fears by altering the personal *meaning* of failure – for example, by expecting the worst or by controlling the circumstances that bring it about.

The motives to avoid failure and approach success have a long history in the achievement and motivation literature (see Elliot & Covington, 2001 for a review). They have been discussed as implicit needs that 'drive' behavior (Atkinson, 1957; McClelland, 1965; McClelland, Atkinson, Clark & Lowell, 1953), as neuropsychological systems (Carver & White, 1994; Gray, 1991), temperaments (Elliot & Thrash, 2002), attributions (Weiner, 1972; Weiner & Kukla, 1970), and as orientations that are malleable and closely linked with students' achievement goals (Conroy & Elliot, 2004; Covington, 1984; 1992; Covington & Beery, 1976; Elliot & Dweck, 1988). Regardless of how these constructs are labeled, a consistent theme emerges when describing failure fearing and success orientated students: the former are characterized by their fears and self-doubts, and the latter by their motivation, resilience, and their enthusiasm for learning (Covington, 1992; Elliot & Church, 1997; Elliot & Dweck, 1988). In early work classifying students as success orientated or failure avoidant, researchers considered these motives to be opposite ends of a bi-polar spectrum with people differing only in relative amounts of hope and fear (Feather, 1961,

1963; Litwin, 1966; Moulton, 1965). However, success orientation and fear of failure

may also interact in ways that lead to qualitatively different motivational profiles among

students (Covington, 1992; Martin & Marsh, 2003; Martin, Marsh & Debus, 2001a;

2001b). With over five decades of research in this area (Atkinson, 1957; Dweck &

Wortman, 1982; McClelland et al., 1953), there has been increasing calls for theoretical

integration with many suggesting this literature has become fragmented and diffuse

(Martin, 2008; Pintrich 2003). Others also point to the lack of research in cross-cultural

settings and growing inconsistencies with Western models when applied to other

cultures (Chang, 2002; Otsuka & Smith, 2005; Zusho, Pintrich & Cortina, 2005).

The current project aims to integrate and extend work on achievement and

motivation by exploring the relationship between fear of failure, success orientation and

student disengagement in both Eastern and Western settings. To do so, we have

employed Self-Worth Theory (Beery, 1975; Covington & Beery, 1976; Covington,

1992; Covington & Omelich, 1988), which considers the combined cognitive,

motivational and emotional factors in achievement striving.

Self-Worth Theory & Self-Protective Strategies

Influenced by both drive theorists (Atkinson, 1957; McClelland, 1965) and goal

orientation approaches (Ames, 1992, Dweck, 1985, Urdan 1997), Self-Worth Theory

(Beery, 1975; Covington & Beery, 1976; Covington, 1992) assumes that the search for

self-acceptance is the highest human priority and this need can give rise both to a fear of

failure and an orientation to approach success. According to Self-Worth theory, in

school where one's worth is largely measured by their ability to achieve, self-

perceptions of incompetence can trigger feelings of shame and humiliation. In these

settings, efforts to regulate one's feelings and protect one's sense of self-worth,

sometimes lead students to deflective strategies designed to alter the *meaning* of failure

by minimizing information about their 'true' level of ability. Two key strategies are defensive pessimism and self-handicapping.

Defensive pessimism is a strategy used to alter the meaning of failure by holding unrealistically low expectations for tasks where one's performance will be evaluated (Norem & Cantor, 1986a; 1986b). This strategy 'protects' students that are afraid of failing by cushioning them against debilitating anxiety prior to stress-provoking tasks (Cantor & Norem, 1989, p.23). It can also serve to alter the meaning of failure, and to keep one's own and others' expectations in check (Martin, Marsh & Debus, 2001a). As one student explained: "I think if I border slightly on the pessimistic, then if I do better than I expected then it's a pleasant surprise, and if I do worse than expected then it's less of a fall. You just try to minimize those falls." (Martin, Marsh, Williamson & Debus, 2003, p. 621). Research indicates that in the West, defensive pessimism is a common strategy among high school and college students, particularly females (Thompson & Le Fevre, 1999) with 33 – 44 per cent of students engaging in this kind of thinking (Martin, 1998; Martin & Marsh 2003). While defensive pessimism may buffer self-esteem in the event of failure (Norem & Cantor, 1986a; 1986b), longitudinal research suggests that compared to optimism, defensive pessimism is associated with lower grade-point averages (GPAs) and significantly higher global life stress and dissatisfaction, as well as increased psychological problems (Martin, Marsh & Debus, 2001b; 2003). These findings indicate that despite this strategy's self-protective appeal, among Western students, the 'ups and downs' of consistent negative expectations may take their toll over time reducing the rewards of success and leading to poorer academic performance (Norem & Cantor, 1986a, 1986b; Martin, Marsh & Debus, 2001a; 2003).

Like defensive pessimism, *Self-handicapping* is also a strategy for altering the meaning of failure but it does so by deflecting the cause of failure away from students'

ability onto premeditated excuses should failure occur (Midgley & Urdan, 2001). As one student explains: "If I leave [study] to the last minute, then I've got an excuse if I didn't do well… It's easier to say, 'I failed because I didn't put enough work into it' than 'I failed because I'm not good at it.'" (Martin, Marsh, Williamson & Debus, 2003, p.621). Examples of self-handicapping include: task-avoidance, denial, deliberately withholding effort, procrastination, lack of practice, reporting illness or other physical symptoms, drug or alcohol use, or the choice of other performance-debilitating circumstances (Covington, 1992; Martin, Marsh, & Debus, 2001a, 2001b, 2003; Riggs, 1992; Kearns, Forbes & Gardiner, 2007). Compared to defensive pessimism, self-handicapping is typically less common, with approximately 6-10 per cent of high school and university students reporting that they use this strategy (Martin, 1998; Martin & Marsh, 2003). It is also especially prevalent among boys (Midgley & Urdan, 1995; 2001; Rhodewalt & Hill, 1995; Smith, Sinclair & Chapman, 2002). Academic self-handicapping in particular, has been found to predict lower self-esteem and more negative affect over time (Zuckerman & Tsai, 2005), as well as poor self-regulation, lower academic achievement and increased likelihood of later withdrawal from studies (Martin, Marsh, & Debus, 2001b).

While, defensive pessimism and self-handicapping can work to protect self-esteem in the short term, these strategies often bring about the failure students are trying to avoid. This in-turn confirms doubts about ability and in a cumulative downward spiral can promote subsequent use of performance avoidance and handicapping strategies (Nurmi, Aunola, Salmela-Aro, & Lindroos, 2003; Zuckerman & Tsai, 2005). Covington (2000) explains that with repeated failures, students' excuses become increasingly implausible and can start to lose much of their self-protective value. When students are forced to take responsibility for these failures, but fail to see these outcomes as things they can control they may ultimately respond helplessly, disengaging from school

altogether (Abramson, Seligman, & Teasdale, 1978; Dweck, 1975; Stipek 1989). While

self-protective strategies are problematic in achievement settings, the fact that they put

students at risk of learned helplessness is perhaps of greatest concern (Covington, 1992;

Martin & Marsh, 2003; Martin, Marsh & Debus, 2001b). This is particularly true given

the wide range of negative implications helplessness holds for student motivation,

academic performance, general adjustment and psychological health (Dweck, 1975,

Fincham, Hokoda & Sanders, 1989), as well the potential long-term impact of these

behavioral patterns in later life (Ziegert, Kistner, Castro & Robertson, 2001).

Existing Research and The Cross-Cultural Divide

Research into self-handicapping, defensive pessimism and helplessness has

typically been concerned with the independent contributions of a wide range of predictor

variables including: achievement motives (Elliot & Church, 2003; Jones & Berglas, 1978;

Norem & Cantor, 1986a; 1986b); personal and classroom goal orientations (Elliot &

Church, 1997; 2003; Martin, Marsh, Williamson & Debus, 2003; Midgley & Urdan,

2001; Urdan, Midgley, & Anderman, 1998); and other variables such as perfectionism,

efficacy and control beliefs, temperament, theories of ability, and self-esteem (Elliot &

Church, 2003; Martin, Marsh & Debus 2001b; Pulford, Johnson, Awaida, 2005; Riggs,

1992; Rhodewalt, 1990; Midgley, Arunkumar & Urdan, 1996; Thompson, Davidson &

Barber, 1995). While these measures have all proved to be significant predictors, fully

explaining these behaviors remains a challenging task with even the more complex

models typically capturing only 5 to 20 per cent of the overall variance (Harris, Snyder,

Higgins & Schrag, 1986; Howell & Buro, 2009; Martin & Brawley, 2002; Midgley &

Urdan, 2001; Ommundsen, 2001).

A separate limitation of much of the work in the field of achievement and

motivation is the comparative lack of research in cross-cultural settings (Elliot & Bempechat, 2002; Jose & Kilburg, 2007; Midgley, Kaplan, & Middleton, 2001). Few theories have been tested and validated in more than one culture and when they have, findings often lack generalizability because they are gender-specific (Kudo & Numazaki, 2003; Tanaka & Yamauchi, 2001) and/or restricted to Asian-Americans and small student samples (Pualengco, Chiu & Kim 2009; Zusho, Pintrich & Cortina, 2005). The scarcity of research in this area means that Western models of achievement motivation have at times been criticized as being culturally entrenched in an ideology of individualism (Otsuka & Smith, 2005; Martin & Hau, 2010). Mobley, Slaney and Rice (2005) believe that cross-cultural research in this area is "clearly needed" and until then, existing research must be interpreted with caution as the literature's cultural divide severely restricts generalizability beyond European-American samples.

Self-Worth Protection in the East

Cultural differences may play a particularly important role in explaining defensive pessimism, self-handicapping and helplessness. Norem (2008) argues that defensive pessimism may be well suited to students in collectivist cultures like Japan, where optimism and explicit self-enhancement are less prevalent (See also Heine & Hamamura, 2007). Chinese and Japanese students often report reduced self-esteem (Hawkins, 1994; Ip & Bond, 1995; Pulford, Johnson, Aqaida, 2005); lower self-efficacy beliefs despite out-performing their Western peers (Eaton & Dembo, 1997); and greater sensitivity to negative self-relevant information and self-criticism (Heine, Lehman, Markus & Kitayama, 1999). Furthermore, there is research to suggest that when compared to European Americans, Eastern students more readily imagine the occurrence of negative events (Chang & Asakawa, 2003).

Cultural values may also act as deterrents against strategies like self-handicapping. In Japan for example, there is greater acknowledgment and encouragement of interdependencies on family, teachers and peers in the academic process (Otsuka & Smith, 2005; Sagie, Elizur & Yamauchi, 1996). This attitude of duty and interdependence, the value placed on effort, and concerns with 'letting down' teachers, family and friends may largely serve as disincentives against the use of debilitating strategies like self-handicapping. When such behavior results in parental and peer disappointment and subsequent feelings of shame and guilt, the negative consequences of self-handicapping may come to outweigh any short-term individual benefits gained from externalizing failures.

While a substantial amount of research exists on self-handicapping (Martin & Marsh, 2003; Midgley & Urdan, 1995; 2001; Rhodewalt, 1990; 1994), defensive pessimism (Martin, Marsh & Debus, 2001a; 2001b; 2003; Norem & Cantor, 1986a) and learned helplessness (Abramson, Seligman & Teasdale, 1978; Dweck & Wortman, 1982; Stipek, 1989) to our knowledge, there have been few studies examining this behavior in East-Asian settings. Pualengco, Chiu & Kim (2009) recently examined cross-cultural differences in pre-emptive effort downplaying (PED) – a form of self-handicapping that involves publicly underreporting effort expenditure prior to test taking. They found that European Americans more readily under-reported the number of practice problems they completed prior to a test, while Asian Americans did not. Other cross-cultural research suggests that students in East-Asian countries like Japan frequently display significant differences in group-norms, motivation and thinking that simply do not conform to typical Western models of achievement and motivation (Hein, Lehman, Markus & Kitayama, 1999; Markus & Kitayama, 1991; Otsuka & Smith, 2005; Sue & Chang, 2003). Chang (1996; 2002) for example, found that in contrast to their Western peers,

high rates of pessimism might actually have adaptive consequences in the East, fostering

increased engagement and improved problem solving strategies. Similarly, Zusho,

Pintrich and Cortina (2005) discovered that while Asian-American students exhibit lower

self-efficacy beliefs and higher fear of failure than their Western peers, these factors do

not seem to have the same negative consequences for subsequent motivation or

performance. Instead, fear of failure in Eastern settings has even been identified as a

strong predictor of academic achievement – a finding at odds with much of the research

in the West (Eaton & Dembo, 1997; Heine, Kitayama & Lehman, 2001; Heine, et al.,

2001). These studies caution against simplified models of achievement and motivation

and point to the need for cross-cultural research.

The Quadripolar Model

Success orientation and fear of failure have been explored independently and in

combination as predictors of a range of student outcomes (Conroy & Elliot, 2004; Elliot

& Church, 2003; De Charms & Dave, 1965). Early work in this area viewed these

constructs as opposite ends of a bipolar spectrum (Feather, 1961, 1963; Litwin, 1966;

Moulton, 1965). However, this model was later criticized for failing to consider the

potential interplay between these opposing forces (Covington, 1992; Covington &

Mueller, 2001). Based on the early work of Atkinson and colleagues (Atkinson, 1957;

Atkinson & Litwin, 1960; McClelland 1965), Covington's refined Quadripolar Model

provides a two-dimensional framework that represents students based on their combined

fear of failure and orientation towards success (Covington, 1992; Covingting & Omelich,

1988). With this two-dimensional structure, students can be located within one of four

broad orientations: 1. Optimists (low fear of failure, high success orientation), 2.

Overstrivers (high fear of failure, high success orientation), 3. Self-protectors (high fear

of failure, low-success orientation), and 4. Failure Acceptors (low fear of failure, low-success orientation).

[Insert figure 1 about here].

Optimists

According to the Quadripolar model, 'optimists' are students who are highly success-oriented. These students are characterized by their self-confidence, resiliency, proactive orientation to tasks and their exemplary achievement behaviors (Covington & Omelich, 1991, p.86). They are self-efficacious, confident of their abilities and their self-worth. For this reason, these students are unlikely to contemplate failure or engage in defensive and self-protective behavior.

Overstrivers

Students high on both success-orientation and fear of failure meet the criteria for overstriving. For these students fear of failure may actually serve to motivate achievement behavior as they seek to avoid failure by succeeding. Like optimists, overstrivers are usually bright, diligent and meticulous. But unlike their optimistic peers, they are mainly driven by a fear of under-performing (Covington, 1992). Thompson & Parker (2007) explain that overstrivers resolve their lack of confidence in their abilities by "leaving no stone unturned" and it is this hybrid quality of hope and fear that drives their accomplishments. However, while they often achieve success, their success comes at a cost, placing them at risk of emotional fatigue and burnout despite their often-impressive achievements. As a result, these students subsequently suffer high anxiety, unstable self-esteem and lack resiliency when they encounter challenges and setbacks (Covington, 1992; Martin, Marsh & Debus, 2001a; Martin & Marsh, 2003).

While these students may engage in defensive thinking about the consequences of poor performance (Martin, Marsh & Debus, 2003), this is unlikely to translate into self-protective behavior. Despite being afraid of failing, overstriving students are also success oriented. For this reason, these students are more likely to 'channel' their fears into increased effort and academic study than they are to behave in ways that could undermine their performance.

Self-protectors

Students high on fear of failure and low on success orientation are classified as self-protectors. These students are primarily motivated by fears of failure over and above their ambitions for success. Like overstrivers, self-protectors also lack confidence but rather than seeking to prevent failure, they aim instead to reduce its 'implications'. They do so by adopting strategies that deflect the causes of failure away from their ability and consequent self-worth (Martin & Marsh, 2003; Thompson & Parker, 2007). This makes them particularly vulnerable to self-handicapping. By feigning carelessness and not studying for example, these students can attribute poor performance to lack of effort rather than lack of ability (Martin, Marsh & Debus, 2001a, 2001b).

Failure Acceptors

The final type – failure acceptance – is reserved for students low on both fear of failure and success-orientated dimensions. While these students display some similar characteristics to self-protectors – such as low self-esteem and control beliefs – they are typically distinguished by their apparent indifference to academic tasks and their overall disengagement from school (Martin & Marsh, 2003). Thompson and Parker (2007) argue that for these students, anxiety is not so much a hallmark of their achievement orientation

as is dejection and loss of hope. This is consistent with research on learned helplessness (Abramson, Seligman & Teasdale, 1978; Dweck & Leggett, 1988; Burhans & Dweck, 1995), which is why some believe failure acceptance is associated with the poorest academic outcomes in school (Martin & Marsh, 2003).

Evidence for the Quadripolar Model

The Quadripolar model provides a simple yet sophisticated explanation for underachievement and disengagement particularly as it relates to defensive and self-protective behavior (Covington & Omelich, 1991; Martin & Marsh, 2003). Research with undergraduates at the University of California, Berkeley (Covington & Omelich, 1985; 1988; 1991) also lends support to the four Quadripolar types. In these studies, success orientated students (optimists and overstrivers) displayed confidence in their own abilities and good study skills. However, overstrivers reported greater anxiety and more time spent in preparation for tests. Failure accepting students by contrast exhibited poor study skills and expressed an apparent lack of achievement affect – little pride in their success or shame at their failures.

Martin and colleagues (Martin, Marsh & Debus, 2001a) have also found some preliminary support for the links between the Quadripolar model and self-protective strategies like self-handicapping and defensive pessimism. Without directly measuring success orientation and fear of failure, the authors used multi-dimensional scaling (MDS) to represent these self-protective strategies in two-dimensional space. This procedure uses a matrix of correlations and Euclidean distance measures, to represent each variable as a point in Euclidean space: the distance between two points are inversely related to the correlation between the variables – closer when correlations are high and further apart when they are low. In this way, Martin and colleagues (2001a) were able to map self-handicapping and defensive pessimism (along with other measures like academic self-

concept and reflexivity) onto the success orientation and fear of failure dimensions based on their interrelationships with the other variables. The results of the MDS procedure indicated that defensive pessimism was associated more generally with high fear of failure and was prevalent among overstriving and self-protecting students. Self-handicapping on the other hand, emerged predominantly as a strategy of self-protection occurring when students were high in fear of failure and low in success orientation (although there was also some overlap with the dimension of failure acceptance). While these findings are consistent with predictions of the Quadripolar model, the authors recognize the need for direct measures of success orientation and fear of failure in future research (Martin, Marsh & Debus, 2001a).

Cross-cultural inconsistencies and the general lack of cross-cultural research in the field of achievement and motivation pose serious challenges for generalizability beyond Western student samples. There have, in fact, been substantial calls for cross-cultural research of this kind (Elliot & Bempechat, 2002; Jose & Kilburg, 2007; Midgley, Kaplan, & Middleton, 2001; Pintrich, 2003; Zusho, Pintrich & Cortina, 2005). In an attempt to extend research on achievement dynamics, the current project thus aims to explore how the Quadripolar types are related to underachievement and student disengagement in two highly distinct cultural settings.

Study 1: Japan

The aim of Study 1 was to explore the relationship between fear of failure, success orientation and self-protective behavior (defensive pessimism, self-handicapping and helplessness) with a large sample of Japanese high school students. We were particularly interested in testing the Quadripolar model's hypothesized interaction between the fear of failure and success orientation dimensions.

Research in the West has found a positive link between fear of failure and self-protective behavior (Elliot & Church, 2003; Martin, Marsh & Debus, 2001a). In these studies, success orientation has been a strong negative predictor of self-handicapping and helplessness. Defensive pessimism however, is believed to be simultaneously associated with fear of failure and an orientation towards success (Norem, 2007). While there is limited cross-cultural research on these strategies, research with Asian and Anglo American college students (Zusho, Pintrich & Cortina, 2005) and with Chinese and Australian middle school students (Martin & Hau, 2010), indicate that the relationship between achievement motives and academic outcomes is highly similar across cultures. These findings suggest that despite cross-cultural differences, highly similar motivational processes underlie achievement behavior in these settings. Based on these findings, we expected (H1) fear of failure would be positively associated with self-handicapping, defensive pessimism and helplessness in Japan (as is the case in the West). We also predicted that (H2) success orientation would be negatively associated with self-handicapping and helplessness but positively associated with defensive pessimism. In accordance with the Quadripolar Model (and preliminary research by Martin, Marsh & Debus, 2001a), we further anticipated that (H3) there would be an interaction between success orientation and fear of failure on self-handicapping. Specifically, that fear of failure would be positively associated with self-handicapping when students were low in success orientation (self-protectors) but would not be significantly related to self-handicapping when students were highly success-orientated (overstrivers). Finally, we predicted that (H4) there would be a significant interaction between success orientation and fear of failure on helplessness attributions with the highest scores among students who were low in fear of failure and success orientation (failure acceptors). See Figure 1 for a summary of predictions regarding each of the quadripolar types.

Method

Participants

Subjects consisted of 1,423 Japanese students from eight different high schools in the central and northern districts of Mie Ken prefecture, Japan. All schools in the prefecture were invited to take part, and involvement in the project was coordinated with the assistance of the Japan Exchange and Teaching Program (JET). The final sample of participating schools captured a diverse spread of low (1 schools), intermediate (5 schools) and high-ranking schools (2 schools) within the northern, central and southern districts[1]. Students ranged from 15 to 18 years of age (M = 15.9, SD = 0.83), 42 per cent were male and 58 per cent were female.

Measures

For all scale items in the questionnaire, subjects were asked to rate their agreement on a 7-point Likert scale. After reverse-coding, high scores on items indicated greater agreement with the item in question. Where Japanese versions of scales were available, they were obtained from the original authors. All other survey items underwent translation and back translation by two bilingual translators fluent in Japanese and English. The translators worked independently and problematic items were discussed and modified until both translators and the authors were satisfied that the Japanese items were semantically equivalent. All measures displayed adequate internal reliability (coefficient alpha), and all scale items were retained in each measure.

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[1] Our sample of Japanese schools included: Matsusaka High; Kameyama High; Kuwana Nishi High; Komono High; Iino Senior High; Nabari Kikyogaoka Senior High School; Nabari Nishi and Kambe High School. High and low performing schools are those falling within the top and bottom 15 percent of the distribution. Rankings are based on Mie Ken prefecture high school entrance exam results can be found on the following three webpages: 1) Northern District - http://mie.tokai-school.net/public/hokubu/ 2) Central District - http://mie.tokai-school.net/public/tyubu/ 3) Southern District - http://mie.tokai-school.net/public/nanbu/

Success Orientation

While early measures of success orientation have focused almost exclusively on the competitive nature of this drive (Atkinson, 1978; Atkinson & Litwin, 1960; McClelland, 1965), Covington's (1992) refined Quadripolar Model conceives success orientation as a combined performance approach and mastery motive. For this reason, we chose to assess Success Orientation using the mastery- and performance-approach subscales of Elliot and McGregor's (2001) revised Achievement Goal Questionnaire (AGQ-R). This combined measure also offers a number of advantages over using a measure of mastery or performance goals alone. For example, research indicates that both goal orientations can have independent and additive effects on achievement and motivation: mastery goals typically predict interest and enrolment, while performance approach goals are stronger predictors of academic achievement (Elliot & Church, 1997; Linnenbrink, 2005; Harackiewicz et al., 2002; see Harackiewicz et al., 2000 for a review). Furthermore, these goals can work in combination predicting reduced anxiety and depression (Siderdis, 2005), and more adaptive outcomes for achievement and motivation than the pursuit of mastery or performance goals alone (Barron & Harackiewicz, 2001; Pintrich, 2000).[2]

The AGQ-R consists of three items measuring performance-approach goals (e.g. "It is important to me to do well compared to others in this class") and three items measuring mastery-approach goals (e.g. "It is important for me to understand the content of this course as thoroughly as possible"). The summed scores on the six AGQ-R items

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[2] Recognising that this combined measure has some controversial aspects (Midgley, Kaplan & Middleton, 2001) all regression analyses were repeated using only mastery goals as a measure of success orientation. 95% confidence intervals for R^2 were computed at each step to ascertain whether there were significant differences in effect sizes for the alternative regression models. In all analyses the main effects and interactions reported in the text were significant and in the same directions. There were also no significant differences in overall variance explained.

were used to provide a general index of students desire to approach success ($\alpha = .86$).

Research indicates that the AGQ is a reliable measure and shows sound construct and

external validity, latent mean stability, and longitudinal invariance (Elliot & McGregor,

2001; Elliot & Church, 1997).

Fear of Failure

In the current study, fear of failure was measured using the 5-item Performance

Failure Appraisal Inventory – Short Form (PFAI-S; Conroy, Willow & Metzler, 2002).

The PFAI is a multi-dimensional measure of the cognitive-motivational-relational

appraisals associated with fear of failure. The scale consists of 5-factors which assess: (a)

fears of experiencing shame and embarrassment, (b) fears of devaluing one's self-

estimate, (c) fears of having an uncertain future, (d) fears of important others losing

interest and, (e) fears of upsetting important others. The PFAI-S is made up of the most

representative items from each of the five factors. Research indicates that the PFAI-S

demonstrates good construct validity, is internally consistent, reliable and shows factorial

invariance across groups and over time (Conroy, 2001; Conroy & Elliot, 2004; Conroy,

Metzler & Hofer, 2003). Sample items include: "When I am failing, I am afraid that I

might not have enough talent" and "When I am failing, I worry about what others think

about me" ($\alpha = .84$). Scores were summed to provide a general index of students' fear of

failing.

Fear of failure and success orientation were both anchored on 7-point Likert

scales, responses ranging from 1 (Not at all true of me) to 7 (Very true of me). While

these motives have been used as categorical and bipolar predictors of achievement

outcomes (Atkinson & Litwin, 1960; Feather, 1961, 1963; Litwin, 1966; Moulton, 1965),

in the current study these dimensions are treated as continuous variables. This approach

avoids the loss of power associated with typologizing dimensional variables (Cohen, 1983). It also allows us to retain all subjects in our analyses – including those close to the mean. For ease of explanation however, we refer to Optimists, Overstrivers, Self-protectors and Failure Acceptors in broad terms as students displaying higher and lower scores on the combined success orientation and fear of failure dimensions.

Dependent Measures

Academic Self-handicapping behavior was measured using the 6-item subscale from the Patterns of Adaptive Learning Survey (PALS; Midgley, et al., 1998). Each of the 6 items asks about an a priori defensive strategy used to influence self-presentation and are thereby distinguishable from attributions (e.g. "Some students purposely don't try hard in class. Then if they don't do well, they can say it is because they didn't try. How true is this of you?" α = .80). Responses ranged from 1 (Not at all true of me) to 7 (Very true of me).

Defensive Pessimism was measured using the 6-item Japanese Defensive Pessimism Questionnaire (J-DPQ; Hogoshi & Kodama, 2005). The scale assesses the extent to which students hold pessimistic expectations for their future academic performance relative to how well they have performed in the past (e.g. "I go into academic situations expecting the worst, even though I know I will probably do OK.") The J-DPQ is based on the original English version of by Norem and Cantor (1986a; 1986b) and displays good construct validity, internal consistency (α= .78) and test-retest reliability at 2 months (r = .74, Hosogoshi & Kodama, 2005). Cronbach's alpha for the current sample was .77.

Helplessness Beliefs were assessed using the 7-item 'Helplessness Beliefs' sub-scale from the Strategy and Attribution Questionnaire (SAQ; Nurmi, Salmela-Aro & Haavisto, 1995). The scale is designed specifically to assess helplessness attributions with reference to perceived control over academic outcomes (e.g. "I do not have the means to affect the way my studies go"). Research indicates the scale displays good construct validity, internal reliability (.70 and above), and test-retest reliability at 6 months (α= .4 to .9, Nurmi, Aunola, Samela-Aro & Lindroos, 2003; Nurmi, Salmela-Aro & Haavisto, 1995). Defensive pessimism and helplessness beliefs were both anchored on 7-point Likert scales, ranging from 1 (Strongly disagree) to 7 (Strongly agree). Cronbach's alpha for the current sample was .61.

Procedure

All questionnaires were administered to students in their English classes by Assistant Language Teachers (ALTs) on the Japan Exchange and Teaching program (JET). Students were informed that participation was voluntary, anonymous and that there were no right or wrong answers. They were also informed that the information would be kept confidential and that no one at home or school would see their results. Surveys were completed in 20-30 minutes under normal classroom and were anonymously sealed in envelopes and returned to the primary researcher via mail. The project was granted full ethics approval by the ANU Human Research Ethics Committee (HREC), the Mie Ken Board of Education and was approved by all relevant teachers and principals at participating schools.

Results – Study 1

Prior to analysis, all variables were examined through SPSS for accuracy of data entry, missing values and distributional assumptions of multivariate analysis (Tabachnick & Fidell, 2007). Assumptions of normality, linearity and homogeneity of variance were all found to be satisfactory. Of the total 1,450 participants, 27 surveys were left blank or incomplete (missing data > 10%) and were excluded from the analysis. This reduced the total to 1423 subjects (a response rate of 98%). Missing data were rare (< 1%) and were imputed with the overall mean for that variable – a conservative technique in such cases (Tabachnick & Fidell, 2007).

Descriptive Statistics

Means (M), standard deviations (SD), ranges, internal consistencies (α) and correlations for all variables are presented in Table 1. For fear of failure (PFAI-S), 19.3 per cent of students reported average agreement on each of the 5-items (e.g. total scores of 25 and above). For the 6-item measure of success orientation (AGQ-R), 36 per cent of students reported average agreement (e.g. scores of 30 and above). Of the dependent variables, self-handicapping (PALS) and helplessness (SAQ) were endorsed less strongly: 3 per cent of students scored above 30 (average agreement) on the self-handicapping measure, and only 1 per cent of students scored above 35 (average agreement) on attributions of helplessness. Defensive pessimism (J-DPQ) by contrast, was more frequently endorsed with 14.4 per cent of students agreeing somewhat or above (scores of 30 and above) across the 6-item J-DPQ.

[Insert table 1 about here].

Correlations between Variables

Consistent with H1, fear of failure was positively associated with self-handicapping and defensive pessimism. While there was also a significant relationship between fear of failure and helplessness beliefs, the correlation was quite low ($r = .08$). Our predictions regarding success orientation (H2) were also partially supported by the positive relationship with defensive pessimism and the negative relationship that emerged between success orientation and helplessness. Counter to H2 however, in Japan there was no significant negative correlation between success orientation and self-handicapping.

Multiple Regression Analyses

In order to explore the predicted interaction between fear of failure and success orientation, a series of two-step hierarchical regressions analyses were conducted on self-handicapping, defensive pessimism and helplessness. Demographic variables including age, school and gender were entered as predictor variables first using statistical entry procedures ($p < .05$ for entry and $p > .10$ for removal). Overall these variables were not significant predictors and resulted in only marginal increases in explained variance for the dependent variables (R^2 Change $< .01$)[3]. For this reason, demographic variables were not included as covariates in the final analysis. Students' mean scores on the fear of failure and success orientation axes were standardized and an interaction term was computed between the two continuous predictors (see Aiken & West, 1991). Table 2 displays the standardised regression coefficients (β), R^2 and R^2 change for the full and restricted models in each analysis. Non-central 95% confidence intervals were also calculated for R^2 at each step.

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[3] Gender accounted for a small portion of variance in self-handicapping, $F(2, 1420) = 6.425$, $p < .05$, $B = .07$, $R^2 = .004$ and helplessness $F(2, 1420) = 7.86$, $p < .01$, $B = -.08$, $R^2 = .006$ but not defensive pessimism. On average girls scored marginally higher than boys on self-handicapping ($M_{girls} = 17.7$ vs. $M_{boys} = 16.82$), and lower than boys on attributions of helplessness ($M_{girls} = 20.97$ vs. $M_{boys} = 21.76$), There were no significant effects for age on any of these variables and no significant two or three-way interactions with age or gender.

[Insert table 2 about here].

Results from the regression analyses indicated that independently fear of failure and success orientation accounted for a significant amount of variance in self-handicapping $F(2, 1420) = 53.69$, $p < .001$; defensive pessimism ($F(2, 1419) = 181.93$, $p < .001$) and attributions of helplessness ($F(2, 1420) = 46.97$, $p < .001$). The predicted interaction between these two variables was also significant for self-handicapping ($F(1, 1419) = 28.33$, $p < .001$) and for helplessness ($F(1, 1419) = 6.54$, $p < .05$) but not for defensive pessimism ($F(1, 1419) = 1.00$, $p > .05$). To interpret the interaction effect (Figure 2 and 3), predicted values for self-handicapping and helplessness were computed and graphed at 1 standard deviation above and below mean for fear of failure and success orientation (see Aiken & West, 1991).

[Insert Figures 2 and 3 about here].

The resulting graph indicates that consistent with H3, success orientation appeared to moderate the association between fear of failure and negative outcomes (self-handicapping and helplessness). Analyses of simple slopes with standardized variables indicated that when students held a lower success orientation (1 SD below the mean), there was a significant and positive relationship between fear of failure and self-handicapping $B = .24$, $t (1, 1422) = .91$, $p < .001$. This relationship also remained significant for more success orientated students (1 SD above the mean) $B = 1.01$, $t (1, 1422) = 5.06$, $p < .001$. At 1.5 SDs and above however, there was no longer a significant difference in self-handicapping between students that were high or low in fear of failure $B = .62$, $t (1, 1422) = 2.0$, $p = .05$. A similar pattern was present for helplessness. When students held a low success orientation (1 SD below the mean), there was a significant and positive relationship between fear of failure and helplessness attributions $B = 1.07$, t

(1, 1422) = .6.02, *p* < .001. This remained significant a 1SD above the mean, *B* = .*49*, t

(1, 1422) = 2.705, *p* < .01. But at 1.2 SDs and above, there was no longer a significant

difference in helplessness attributions between high and low failure fearing students *B* =

.43, *t* (1, 1422) = 1.99, *p* = .05.

These results suggest that consistent with H3, fear of failure did predict increased

self-handicapping but this was mostly true of self-protective students (high fear of failure,

low success orientation). Failure acceptors, optimists and overstrivers all reported

somewhat lower endorsement of the self-handicapping items. Counter to predictions

(H4), a similar pattern also appeared for helplessness. While failure acceptors reported

greater attributions of helplessness than their success orientated peers (optimists and

overstrivers), the highest levels of helplessness were once again observed among self-

protecting students.

Commentary on Study 1

Our first study used the Quadripolar Model to predict self-handicapping,

defensive pessimism and helplessness in a largely unexplored East-Asian setting. Our

results suggest that optimists (low fear of failure, high success orientation) and

overstrivers (high fear of failure, high success orientation) both report similarly low

levels of self-handicapping and helplessness. However, these students also more

frequently report holding defensively pessimistic expectations about their future

performance. Consistent with existing research (Norem, 2007; Yamawaki, Tschanz, &

Feick, 2004), and Covington's depiction of overstriving, this was particularly true of

those students who scored high in both fear of failure and success orientation.

Interestingly, self-handicapping behavior and attributions of helplessness were

most common among students scoring high on the dimension of self-protection (high fear

of failure and low success orientation). While the findings for self-handicapping were in line with predictions, the results for helplessness attributions were surprising. Traditionally 'failure acceptance' (low fear of failure and low success orientation) has been viewed as a disaffected state of resignation to poor performance. Martin and Marsh (2003) even present a cascading model of failure avoidance with students gradually progressing from one dimension to the next in a downward spiral of underachievement with failure acceptance associated with the greatest negative outcomes (Martin & Marsh, 2003). The results from the current study are inconsistent with this view and indicate that it may be the self-protecting students who are actually at greatest risk. In Study 2 we extended these predictions to a Western context to explore the generalizability of these findings.

Study 2: Australia

The results of Study 1 lend some support to Self-Worth theory and the Quadripolar model, however they also raised questions about which students are at greatest risk of learned helplessness and disengagement from school. Because helplessness beliefs do not always translate into helpless patterns of behavior (Covington, 2000), in Study 2 we included three additional self-report measures: truancy, disengagement and academic achievement. This time, we sought to test our original hypotheses with Australian high school students. To date, there is limited cross-cultural research on self-worth protection in Eastern and Western settings (with the exception of Pualengco et al., 2009). A number of studies have, however, examined self-handicapping and defensive pessimism in Australia (Martin & Marsh, 2003; 2006; Martin, Marsh & Debus, 2001a; 2001b; 2003) and Australian students are frequently used as a basis of

comparison for this kind of cross-cultural research (Martin & Hau, 2010; McInerney, 2006).

Self-Worth Protection in the West

Despite cross-cultural differences in achievement motivation and self-regulation (Eaton & Dembo, 1997; Hein, Kitayama & Lehman, 2001; Pualengco, Chiu & Kim, 2009; Purdie & Hattie, 1996), there is little evidence for cross-cultural differences in underlying motivational processes (see Martin & Hau, 2010; Zusho et al., 2005). For this reason, we expected that the Quadripolar model would be valid across cultures and this would be evident in (H4) a similar pattern of relationships between success orientation and fear of failure on each of the dependent variables. Based on the findings from Study 1, we predicted that success orientation would again moderate the relationship between fear of failure and maladaptive student outcomes. Specifically, that (like self-handicapping and helplessness), fear of failure would be positively associated with disengagement and truancy when students were also low in success orientation. Finally, we expected that these students would report the lowest academic achievement overall. When students were highly success orientated however, we expected that they would perform better academically and that there would be a weaker association between fear of failure and self-handicapping, helplessness, truancy and disengagement.

Method

Participants

For Study 2, participants consisted of 680 Australian students in years 9-12 from five different schools in the Australian Capital Territory. Schools were again selected to capture a spread of low (1 school), intermediate (3 schools) and high performing schools (1 school) based on national performance indicators (Australian Tertiary Admission

Rankings ATAR)[4]. Of the total sample, 35 per cent of students (N = 235) were from private schools, and 65 per cent (N = 445) were from public high schools and colleges. Students ranged from 15 to 19 years of age (M = 16.6, SD = 1.01), 38 per cent (N = 258) were male and 62 per cent (N = 422) were female.

Measures

Questionnaire items consisted of English language versions of the same scales used in Study 1. To better differentiate helplessness attributions from behavior, three additional measures were incorporated to assess student disengagement, truancy and general academic achievement. Disengagement was assessed with three items adapted from the Motivation and Engagement Scale (MES-HS; Green, Martin & Marsh, 2007): "I often feel like giving up in school"; "I've pretty much given up being interested in school" and "I really couldn't care less about school" (α = .82). Truancy was measured with two-items: "I sometimes wag school" and "I'll skip class when I can get away with it" (α = .86). Both scales were anchored using the same 7-point Likert scale 1 (strongly disagree) to 7 (strongly agree). In addition to these measures, four items were used as an indicator of self-reported Academic achievement: "In the past 12 months, the grades I mostly received were…"; "I would describe myself typically as an…"; "Compared to other students my age, I think I'd be…" and "Compared to others in my class, I think I'd be…". Response choices were anchored with scores ranging from 1 ("Ds / D-average student" or "among the worst students") to 7 ("As / A-average student" or "among the best students"). Together the four items were a reliable measure of students' self-reported academic status (α = .91). Mean scores across the four items provided an average index

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[4] Our sample of schools included: Radford, Merici, Melba Copland, Canberra College and Lake Ginninderra. High and low performing schools are those falling within the top and bottom 15 percent of the distribution. Rankings for these schools based on the Australian Tertiary Admission Rank (ATAR) can be found at: www.bettereducation.com.au/results/ACT/2010/ACT.aspx

of students' perceived academic ability. Self-report measures were used because official academic and absentee records could not be obtained. While self-report measures of this kind are subject to memory and bias distortions, research indicates that these biases are typically small (Cassady, 2001). Research with high school student samples indicates the correlation between actual grades and self-reported academic achievement usually ranges from .74 to .96 (Baird, 1976; Kuncel, Crede & Thomas, 2005; Maxey & Ormsby, 1971; Sawyer, Laing & Houston, 1988; Shaw & Mattern, 2009).

Procedure

Surveys were constructed using the Online Survey Software – Qualtrix. Questionnaire items were presented in the same format as used in Study 1 but were administered online during a computer lab session. Students completed the online survey under normal classroom conditions and supervising teachers followed the same procedures outlined in Study 1. Once again students were informed that their participation was voluntary, anonymous and confidential. Ethics approval for the project was also obtained from appropriate governing bodies including: the Australian National University; the Catholic Education Office (CEO); the Department of Education and Training (DET); as well as principals and teachers at participating schools.

Results – Study 2

Of the total 680 subjects, 37 surveys were left incomplete (missing data > 10%) and were deleted reducing the total sample to 643 (a response rate of 95%). For the remaining cases, missing data was extremely rare due to form validation measures (< .01%) and where present were replaced with the mean for that variable. Data was further screened and cleaned following the same procedures outlined in Study 1.

Descriptive Statistics

Table 3 displays the means (M), standard deviations (SD), ranges, internal consistencies (α), and correlations for all variables in Study 2. For fear of failure, 26.6 per cent of Australian students reported average agreement (e.g. scores of 25 or above) on the 5-item scale (PFAI-S). For success orientation (AGQ-R), 64.1 per cent of students agreed on average with the scale items (e.g. scores of 30 and above). Of the dependent variables, 8.7 per cent of students reported that they engaged in self-handicapping (PALS scores of 30 and above); 27.7 per cent reported that they engaged in defensive pessimism (DPQ scores of 30 and above); 15.6 per cent reported that they sometimes skipped class (Truancy scores of 10 and above); 13.6 per cent reported that they felt like giving up in school (MES-HS disengagement scores of 15 and above); and no students scored above 35 (average agreement) on the helplessness attributions scale (SAQ).

Correlations between Variables

Correlations between variables (Table 3) revealed that in line with predictions and findings from Study 1, success orientation was positively associated with defensive pessimism and self-reported achievement but negatively associated with self-handicapping, helplessness, disengagement and truancy. Fear of failure on the other hand, was positively associated with self-handicapping, defensive pessimism and disengagement but unrelated to helplessness, truancy or achievement.

[Insert table 3 about here].

Multiple Regression Analyses

Two-step hierarchical regression analyses were again used to test our hypotheses this time with Australian students. Once again, demographic variables were omitted from the final analyses[5]. The results from these analyses are provided in Table 4.

[Insert table 4 about here].

Consistent with the results from Study 1, fear of failure and success orientation significantly predicted self-handicapping ($F(2, 640) = 32.77, p < .001$), defensive pessimism ($F(2, 640) = 105.63, p < .001$) and students' tendencies to engage in helpless patterns of thinking ($F(2, 640) = 39.82, p < .001$). On each of these outcomes, the model explained 10 to 25 per cent of the overall variance. The predicted interaction between these dimensions was also significant for self-handicapping ($F(1, 639) = 9.10, p < .01$) but not for helplessness ($F(1, 639) = .80, p > .05$) or defensive pessimism ($F(1, 639) = .1$, $p > .05$). As seen in Study 1, self-protecting students displayed the highest rates of self-handicapping (see Figure 4). Analyses of simple slopes revealed that when students held a lower success orientation (1 SD below the mean), there was a significant and positive relationship between fear of failure and self-handicapping $B = 2.719$, $t(1, 642) = .6.537, p < .001$. This relationship also remained significant for success orientated students (1 SD above the mean), $B = 1.185$, $t(1, 642) = 3.156, p < .01$. At 1.5 SDs above the mean however, this relationship ceased to be significant $B = .802$, $t(1, 642) = 1.732, p > .05$.

Additional Measures

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[5] Controlling for demographic variables resulted in a marginal increase in explained variance – typically less than 1%. Gender accounted for a small portion of variance in self-handicapping, $F(2, 640) = 7.82, p < .01, B = -.11, R^2 < .01$ helplessness, $F(2, 640) = 11.61 p < .01, B = -.14, R^2 < .01$, and defensive pessimism $F(2, 640) = 19.19, p < .001, B = .12, R^2 = .02$. On average girls scored marginally lower than boys on self-handicapping ($M_{girls} = 18.7$ vs. $M_{boys} = 20.4$), and helplessness ($M_{girls} = 19.0$ vs. $M_{boys} = 20.7$), but higher on defensive pessimism ($M_{girls} = 27$ vs. $M_{boys} = 25$). There were no significant effects for gender on truancy, disengagement or grades. Age did not account for a significant portion of variance on any of the dependent variables with the exception of truancy $F(2, 640) = 11.85 p < .01, B = .17, R^2 = .03$.

A second series of hierarchical regressions were conducted on the three additional

dependent variables: disengagement, truancy and self-reported achievement (See Table

5).

[Insert table 5 about here].

In the second series of analyses, success orientation and fear of failure accounted

for significant portions of variance on all three measures: disengagement ($F(2, 640) =$

43.168, $p < .001$), truancy ($F(3, 639) = 16.989$, $p < .01$) and self-reported achievement

($F(2, 1420) = 68.05$, $p < .001$). In each analysis the predicted interaction between the two

dimensions was significant ($F(1, 639) = 6.72$, $p < .001$; $F(1, 639) = 8.58$, $p < .01$; $F(1,$

$639) = 10.13$, $p < .01$ respectively)[6]. To interpret the interaction effects, the predicted

values for high and low failure-fearing students were again graphed and can be seen in

Figures 4, 5 and 6.

An analysis of simple slopes for disengagement revealed a positive relationship

with fear of failure at 1 SD below ($B = 1.47$, $t(1, 642) = 6.44$, $p < .001$) and 1 SD above

the mean ($B = .740$, $t(1, 642) = 3.53$, $p < .001$). The association between fear of failure

and disengagement declined with increasing success orientation and at 1.6 SDs above the

mean, fear of failure was no longer significantly associated with disengagement $B = .522$,

$t(1, 642) = 1.933$, $p > .05$. For truancy, there was a positive relationship with fear of

failure at 1 SD below the mean, $B = .601$, $t(1, 642) = 3.212$ $p < .001$. However, at 1 SD

above the mean, this relationship was no longer significant $B = -.06$, $t(1, 642) = -.38$, $p >$

.05. Finally for self-reported achievement, fear of failure was associated with poorer

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[6] As in Study 1, we performed supplementary analyses for each of our dependent variables with mastery goals as an alternative measure of success orientation. In all analyses the main effects for fear of failure and success orientation were again significant and in the same directions. The interaction was also significant for all dependent variables with the exception of self-reported grades (F_{change} (3, 639) = 1.721, $p > .05$). There were no significant differences in overall variance explained.

overall academic achievement when students scored lower in success orientation (1 SD below the mean) B =-.35, $t(1, 642) = -5.56$, $p < .001$. However, at 1 SD above the mean, this too was no longer significant $B = -.09$, $t(1, 642) = -1.39$, $p > .05$.

[Insert figure 4, 5, and 6 about here].

Plotting the values for high and low failure-fearing students revealed a similar interaction between success orientation and fear of failure on helpless patterns of behavior. Consistent with predictions, self-protective students (low success orientation and high fear of failure) performed poorest across a range of measures. They were also most likely to report disengaging from school and skipping class. These findings are consistent with the results from Study 1 and suggest that it is the self-protecting students who may be at greatest risk of self-handicapping, helplessness and disengagement from school.

As seen in Japan, students high in success orientation (optimists and overstrivers) appeared to be more resilient to fear of failure and showed the most adaptive outcomes across all key measures. In our Australian sample, these students typically described themselves as being in the top third of their class, and reported receiving mostly As and Bs over the last 12 months. As success orientation diminished however, fear of failure was more strongly associated with poorer achievement estimates. Students high in fear of failure reported the greatest number of D and F grades and rated themselves among the worst in their class. Interestingly, students low in both success orientation and fear of failure fared better than their failure fearing peers. Rather than displaying a helpless pattern of behavior (consistent with traditional portrayals of failure acceptance), these students ranked themselves as "about average" when compared to other students and reported that they received mostly C grades over the last 12 months.

Cross-cultural Similarities

To examine whether the pattern of relationships between variables were equivalent across cultures (H4), we first tested for measurement invariance using multi-group confirmatory factor analysis (CFA) with structural equation modeling (SEM). Separate analyses were conducted for each measure – success orientation, fear of failure, self-handicapping, defensive pessimism and helplessness – and were used to determine whether the English and Japanese scales were structurally equivalent in the Australian and Japanese samples. In each analysis, two nested models were compared: an unconstrained (configural) model where factor loadings and intercepts were estimated freely, and a constrained (factor loading invariance) model where parameters were fixed to be equal in both groups. Invariance at the configural level indicates that scale items are associated with the same factors in each sample. Invariance at the factor loading level indicates that the strength of relationship between items and their associated factors are also equal across cultures (Chen, 2007). Poor fit and/or a significant difference between the two models suggest a lack of invariance at the tested level (e.g. cross-cultural differences in the measured constructs and scale items).

Significant differences between models in multi-group CFA have typically been assessed using chi square (χ^2) tests, which evaluate discrepancies between the sample and fitted covariance matrices. However, because χ^2 is sensitive to large sample sizes and violations of the multivariate normality assumption, it often rejects invariant models under these conditions (Chen, 2007; Hu & Bentler, 1995). For this reason, goodness of fit indices are recommended as alternative criteria for assessing measurement invariance (see Chen, 2007 for a review). For large samples, Chen (2007) provides the following cut-offs for invariance at the configural and factor loading level: 1) a difference between models $\leq$ -.01 in the comparative fit index (CFI); and 2) a difference $\leq$ .015 in the root

mean square error of approximation (RMSEA), or $\leq .03$ in the standardized root mean

square residual (SRMR).

Using the criteria provided by Chen (2007) we examined fit indices in separate

analyses for each of our measures. Results indicated that for success orientation, the

single factor configural model fit the data well ($\chi^2 = 58.95$ (df = 10), p < .001, CFI = .991;

RMSEA = .049 and SRMR = .017) and there was no significant change in fit indices

when it was compared to the loading invariance model ($\Delta\chi^2 = 117.76$ (df = 15), p < .001,

ΔCFI = -.009; ΔRMSEA = .009; ΔSRMR = .012). The configural model for fear of

failure also displayed good fit ($\chi^2 = 33.23$ (df = 4), p < .001; CFI = .992; RMSEA = .06,

SRMR = .009) with no significant change in fit indices between the configural and factor

loading models ($\Delta\chi^2 = 68.478$ (df = 8), p < .001, ΔCFI = -.009; ΔRMSEA = .001 and

ΔSRMR = .03).

The configural models for self-handicapping ($\chi^2 = 150.56$ (df = 10), p < .001; CFI

= .967; RMSEA = .08, SRMR = .077), defensive pessimism ($\chi^2 = 33.504$ (df = 8), p <

.001; CFI = .992; RMSEA = .039, SRMR = .02), and helplessness ($\chi^2 = 103.99$ (df = 13),

p < .001; CFI = .973; RMSEA = .058, SRMR = .037), also fit the data well and there were

again no significant changes in fit indices between the two models (Self handicapping: $\Delta\chi^2$

= 179.98 (df = 15), p < .001, ΔCFI = -.006; ΔRMSEA = -.01 and ΔSRMR = .007;

Defensive pessimism: $\Delta\chi^2 = 52.848$ (df = 12), p < .001, ΔCFI = -.004; ΔRMSEA = .002,

ΔSRMR = -.001; Helplessness $\Delta\chi^2 = 143.20$ (df = 18), p < .001, ΔCFI = -.011; ΔRMSEA =

.00 and ΔSRMR = .031). These findings indicated that for each of our measures, the

underlying constructs were structurally equivalent across cultures.

After establishing measurement invariance in our constructs, we examined

whether the patterns emerging for the Quadripolar types were also equivalent across

cultures. We tested the main and interactive effects for culture, success orientation and fear of failure in a second set of hierarchical regression analyses. Results indicated that the interaction between fear of failure and success orientation on self-handicapping and helplessness remained significant even when controlling for culture[7]. There were also no two- or three-way interactions with culture – with the exception of a small but significant interaction with success orientation: at lower success orientation (1 SD below the mean), Australian students reported higher rates of self-handicapping ($B = .18$ $F(6, 1992) = 40.58$ $p < .001$ R^2 change = .01), defensive pessimism ($B = .13$ $F(6, 1992) = 112.73$ $p < .001$ R^2 change < .01) and helplessness ($B = .15$ $F(6, 1992) = 37.46$ $p < .001$ R^2 change = .01) than Japanese students. At higher success orientation (1 SD above the mean) however, culture ceased to be significantly associated with these outcomes. These results suggest that when success orientation is low, Australian students are particularly vulnerable to self-handicapping, defensive pessimism and helplessness. The relationship between success orientation and fear of failure however, was largely equivalent across cultures.

Commentary on Study 2

The results from Study 2 provide further evidence in support of the Quadripolar Model. Australian students, like Japanese students, appeared most prone to defensive and pessimistic thinking when they were anxious about failing. Yet, it was only when these students also displayed a lack of motivation to succeed, that they were at risk of underachievement and disengagement from school. Consistent with predictions, students showed the most adaptive behavior when they were low in fear of failure and highly

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[7] In an alternative approach we used a model comparison method to examine the fear of failure and success orientation interaction in both samples. To avoid inflated type I error rates associated with multiple significance tests, unstandardized coefficients for each of the predictor variables were examined simultaneously in 'verification' regressions that used the regression equation from one sample to explain variance in the other. We found that parameter estimates (coefficients) were equivalent across cultures.

success orientated. At one standard deviation above the mean for success orientation, fear of failure was still associated with self-reported self-handicapping and disengagement however it was no longer associated with truancy and academic achievement. Covington (1992) explains, it is the hybrid quality of hope and fear that means that overstrivers typically display adaptive patterns of performance in academic domains. Despite being afraid of failing, overstriving students are success orientated, and may thus be more likely to 'channel' their fears into increased effort and study rather than behaving in ways that could undermine their academic performance. Interestingly, in both studies self-protective students faired poorest across all measures. They reported the lowest academic achievement, were most prone to attributions of helplessness, self-handicapping, truancy and disengagement.

Discussion

The current study makes two important contributions to the literature on achievement motivation and self-worth. First, it extends predictions based on the Quadripolar Model to the domains of self-handicapping, defensive pessimism, helplessness and student disengagement. Second, it contributes to much needed research on achievement motivation in cross-cultural settings, providing one of the first empirical evaluations of self-worth protection in Eastern and Western contexts.

Self-worth Protection Across Cultures

In Study 1 and 2, the interaction between self-handicapping and fear of failure was largely consistent across cultures and in accordance with predictions based on the Quadripolar Model. In their research with Asian and Anglo-American students, Zusho et al. (2005) also found no discernable cultural differences in the relationship between

motives, goals and outcomes. Trumbull and Rothstein-Fisch (2011) argue that achievement motivation theory must move beyond cultural generalizations as a student's motivation cannot be reliably inferred from a their culture or their group membership. These findings largely support the generalizability of the Quadripolar model across cultures and suggest that when it comes to protecting one's self-worth, Eastern and Western students may have much in common.

Success Orientation

Consistent with the predictions of the Quadripolar model and existing research (Martin, Marsh & Debus, 2001), in both samples success orientation largely moderated the relationship between fear of failure and student outcomes. Australian and Japanese, students who reported high success orientation (striving for mastery and performance approach goals) typically reported lower rates of self-handicapping, helplessness, truancy and disengagement. These students also reported the highest overall academic achievement. While this was especially true when students were also low in fear of failure, when students were highly success orientated (1.5 SD above the mean for approach goals), fear of failure ceased to be significantly associated these outcomes. These findings indicate that in both cultures, success orientated goal striving may serve as a protective factor that buffers students against their fears of failing.

Fear of Failure

Unlike optimists and overstrivers, self-protectors and failure acceptors were characterised by their lack the motivation to approach success. In our Australian and Japanese samples, self-handicapping behavior was most common when this lack of motivation to succeed was coupled with a fear of failing. For these 'self-protecting

students' the need to protect a sense of self-worth from the implications of failure may have indeed served as a driving force behind a range of problem behaviors intended to explain and excuse poor performance. But ultimately, these strategies appear to have offered little protective value as self-handicapping was at the same time associated with the highest rates of helpless thinking and behavior. Paradoxically, despite attempts at self-presentation and the importance of appearing 'able' in the eyes of others, self-protecting students seem unable to escape their own fears that they lack the ability to avert failure should they invest the effort necessary to succeed. The fact that helplessness, self-handicapping, truancy and disengagement were all associated with a heightened fear of failure suggests that while these behaviors may appear to be the product of 'not caring enough', they may in fact be consequences of caring too much about the prospect of failure and what it means. This finding has important implications. Covington (1992) argues that increasing pressure on students to try harder in the face of failure is to invite disaster. It is largely assumed that parents and educators can control student effort by rewarding achievement and punishing the indifferent. However, this basic policy of intensification may only make matters worse, if it increases fear of failure among students who do not believe they are capable of succeeding.

High rates of helplessness, truancy and disengagement among self-protecting students may not seem that surprising, as these strategies can in themselves be forms of self-handicapping (Riggs, 1992). However, the profile that has emerged for these students is troubling. 'Failure acceptance' and helplessness has been of primary concern among many researchers in the field of psychology (Covington, 1992; Dweck & Wortman 1982). It has also been viewed largely as a problem of motivation lack – a disaffected and disinterested state of resignation to poor performance. The results from the current study paint a somewhat different picture. In both Australia and Japan, it was self-protective

students that reported the highest levels of helplessness and disengagement from school. Ironically the seemingly unmotivated students who reported that they 'couldn't care less about school' were also the ones most troubled by a fear of performing poorly. These findings run counter to traditional portrayals of a cascading model of failure avoidance (Martin & Marsh, 2003), which present failure acceptance as the ultimate negative outcome. Instead, it appears that among students low in success orientation, those who are also low in fear of failure may actually fair better than their failure fearing peers. Despite seeming relatively 'unmotivated', these students were less likely to skip class or give up on school, were more engaged in their studies and reported performing better academically overall.

Covington (1992) explains that while failure-accepting pupils are indifferent to school achievement, this lack of involvement is open to several interpretations. He cautions that while some students may display helplessness and passive resistance, others may naturally search for alternative sources of self-worth. Rather than making excuses or rejecting school altogether, these students may instead be focusing on other domains, defining themselves, for example, by their sporting, social or extra-curricular activities. In this way, 'failure-accepting' students may in effect be downplaying and 're-defining' their failures in a way that is less threatening to self-esteem.

Limitations

While the current project represents one of the largest cross-cultural studies in this area to date, a number of limitations should be noted. First, the measures used in the current study to assess fear of failure and success orientation are by no means the only measures available. Indeed, there is a long history of debate over how these achievement constructs should best be assessed (Atkinson & Litwin 1960; Donnellan, 2008; Ziegler,

Schmukle, Egloff & Buhner, 2010), and whether they are in fact orthogonal (Atkinson & Litwin 1960). The motive to approach success for example, has been viewed as a stable personality trait (n Ach) and as an antecedent to achievement goals (Atkinson, 1957; McClelland, 1965; McClelland, Atkinson, Clark & Lowell, 1953). It has also been assessed with implicit measures such as the projective picture-based Thematic Apperception Test (TAT, McClelland et al. 1953; 1958) and semi-projective instruments like the Achievement Motives Grid (Schmalt, 1999). Goal theorists on the other hand, have focused more on the importance of mastery and learning goals (Martin & Marsh, 2003; Kaplan & Middleton, 2001; Midgley et al., 2001), and on students' beliefs, values and perceived sense of control (Martin & Marsh, 2003). Consistent with Self-Worth theory, in the current study we assessed success orientation using a combined measure of mastery- and performance-approach goals (AGQ-R, Elliot & McGregor, 2001): a method, which offers a number of theoretical and practical advantages (see Harackiewicz et al., 2000; 2002 for a review). We also conducted a series of supplementary analyses using only the mastery items to accommodate concerns others may have with the inclusion of the performance goal construct (Midgley, Kaplan & Middleton, 2001). These analyses mostly revealed no significant differences in our results. It may nonetheless be interesting to examine alternative measures of success striving and fear of failure in an effort to replicate and extend our findings.

A second issue relates to translation and cross-cultural comparisons. Cross-cultural research frequently suffers from difficulties with inappropriate translations, biased sampling practices, small or practically insignificant findings, and/or cultural differences in response styles and subjects' understanding of core psychological constructs (For a discussion see Matsumoto, Grissom & Dinnel, 2001; Hein, Buchtel & Norenzayan, 2008; Schmitt, Allik, McCrae & Benet-Martinez, 2007). In the current

study, we made efforts to ensure our Australian and Japanese samples were similar with respect to age, gender and educational status. Our measures were also carefully translated, back translated and assessed for cross-cultural invariance. Despite these efforts, we acknowledge that true metric equivalence is notoriously difficult to obtain in cross-cultural research and some are sceptical that it can be obtained at all (Heine, Lehman, Peng, & Greenholtz, 2002; van de Vijver & Leung, 1997). We therefore advise caution when interpreting rates of fear of failure, success orientation and self-protective behavior in our Australian and Japanese samples.

On a related note, it is important to recognize that all the independent and dependent variables used in the current study were derived entirely from self-reports. While self-reported handicapping and disengagement have been validated against actual behavior (Deppe & Harachkiewicz, 1996; Strube, 1986; Rhodewalt & Fairfield, 1991), it is possible that some students may unconsciously employ self-protective strategies or may be disinclined to concede that they adopt them. The present results must therefore be interpreted with the possibility that higher-rates of self-handicapping, truancy and student disengagement exists among these student populations. Future research should also seek to incorporate data derived from additional sources such as academic and absentee records, ratings made by parents and teachers and other forms of observational data. Incorporating multiple data sources would also provide information on shared method variance, which may serve to bias parameter estimates (Martin, Marsh & Debus, 2001).

Finally, it is also important to acknowledge that these findings are based on high school students in classroom contexts only. It is possible that similar findings may emerge in other settings (e.g. sport), or with younger children and adults but research is still needed in these settings. Developmental changes may be a particularly interesting avenue for future research. Midgley, Arunkumar and Urdan (1996) stress the importance

of attending to developmental differences in self-handicapping and student disengagement, since knowing when students start using these strategies is important if long-term solutions to these problems are to be found.

Conclusions

The primary aim of the current studies was to explore the prevalence of defensive pessimism, self-handicapping and helpless attributions in Australia and Japan while also evaluating the utility of the Quadripolar Model in predicting different forms of self-protective behavior. Results from Study 1 and 2 suggest that fear of failure has minimal impact on achievement outcomes when it is coupled with a strong desire to excel in class and master the material presented. But, when success orientation diminishes, fear of failure may hold severe consequences for academic performance and is associated with self-handicapping, truancy, poorer academic achievement and even the rejection of school altogether. Interestingly, our findings were consistent in two highly distinct cultural settings with the same motivational profiles emerging for students in Australia and Japan. These findings suggest that the Quadripolar Model holds much promise as a method for predicting underachievement and student disengagement across cultures.

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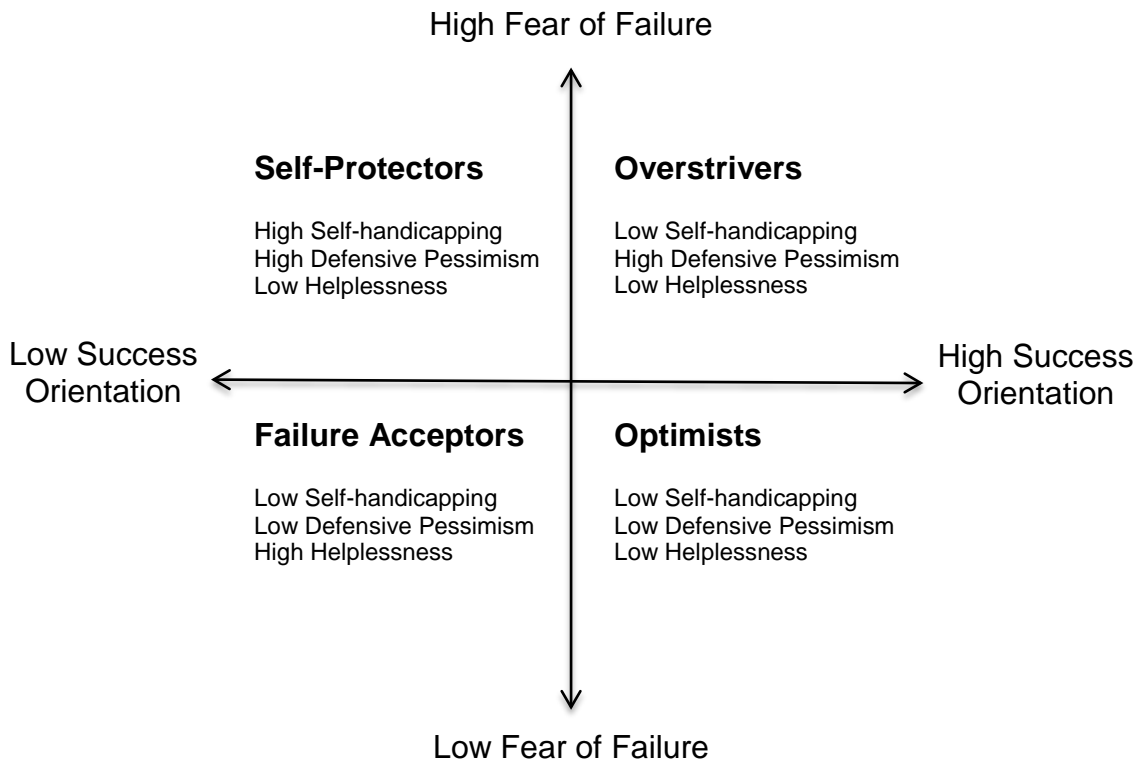
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Figure 1. *The Quadripolar Model of Achievement Motivation*

High Fear of Failure

Self-Protectors

High Self-handicapping
High Defensive Pessimism
Low Helplessness

Overstrivers

Low Self-handicapping
High Defensive Pessimism
Low Helplessness

Low Success
Orientation

High Success
Orientation

Failure Acceptors

Low Self-handicapping
Low Defensive Pessimism
High Helplessness

Optimists

Low Self-handicapping
Low Defensive Pessimism
Low Helplessness

Low Fear of Failure

Figure 1 Caption:

Figure 1. Quadripolar model of achievement motivation and predictions regarding self-handicapping, defensive pessimism and helplessness adapted from Covington, M. (1992) *Making the Grade: A Self-Worth Perspective on Motivation and School Reform* Cambridge: Cambridge University Press.

Figure 2: *Interaction between Fear of Failure and Success Orientation on Self-Handicapping (Japan N=1423)*
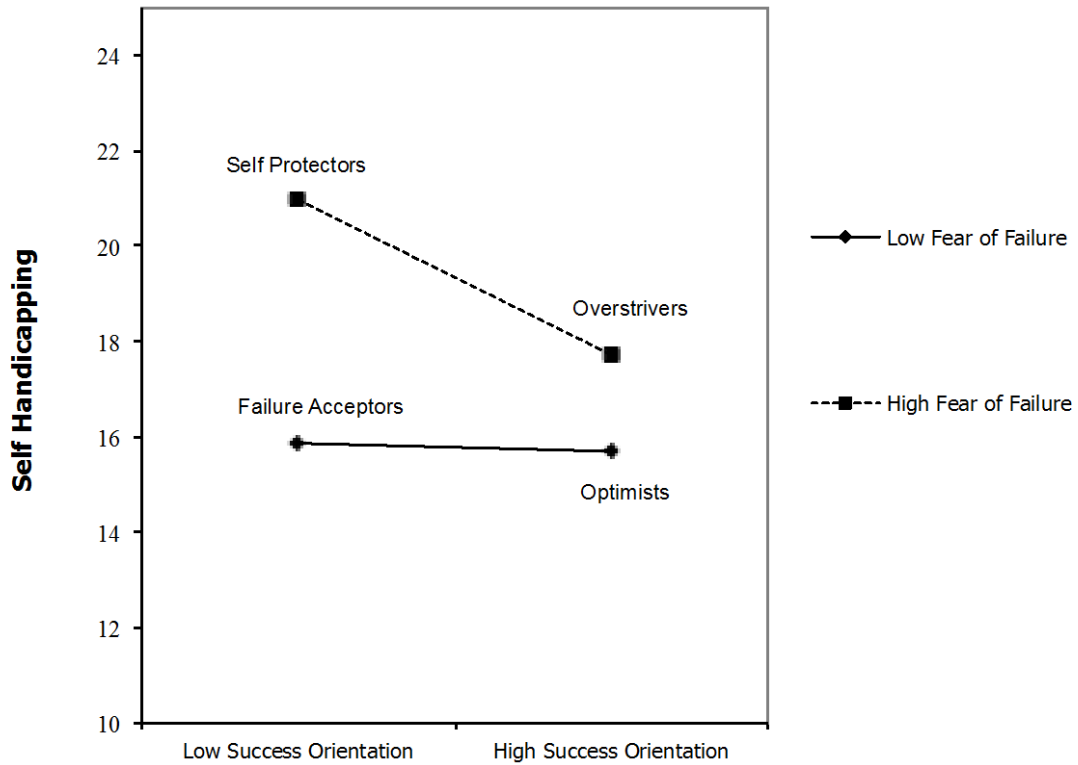

Figure 2. Predicted Self-handicapping as a function of fear of failure and success orientation. Values are based on standardized coefficients and represent one standard deviation below and above the mean. Total self-handicapping scores range from a minimum of 6 to a maximum of 48.

Figure 3: *Interaction between Fear of Failure and Success Orientation on Helplessness Attributions (Japan N=1423)*
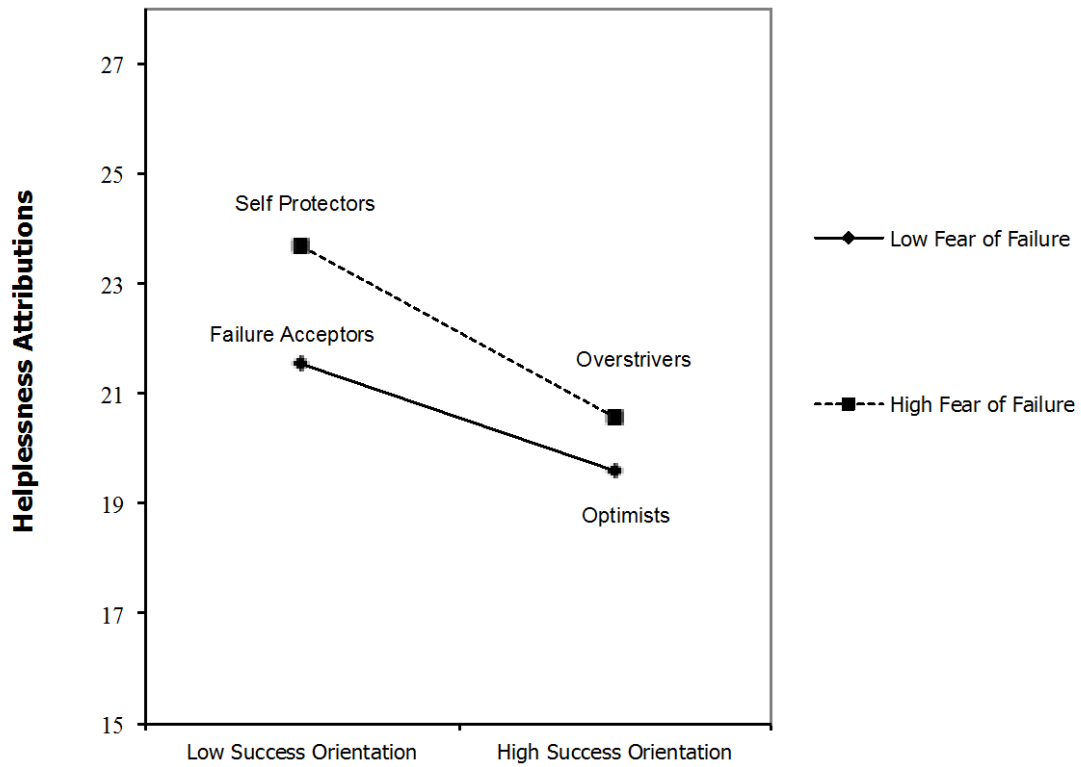

Figure 3. Predicted Helplessness as a function of fear of failure and success orientation. Values are based on standardized coefficients and represent one standard deviation below and above the mean. Helplessness attribution scores range from a minimum of 7 to a maximum of 43.

Figure 4. *Interaction between Fear of Failure and Success Orientation on Self-handicapping (Australia N=643)*
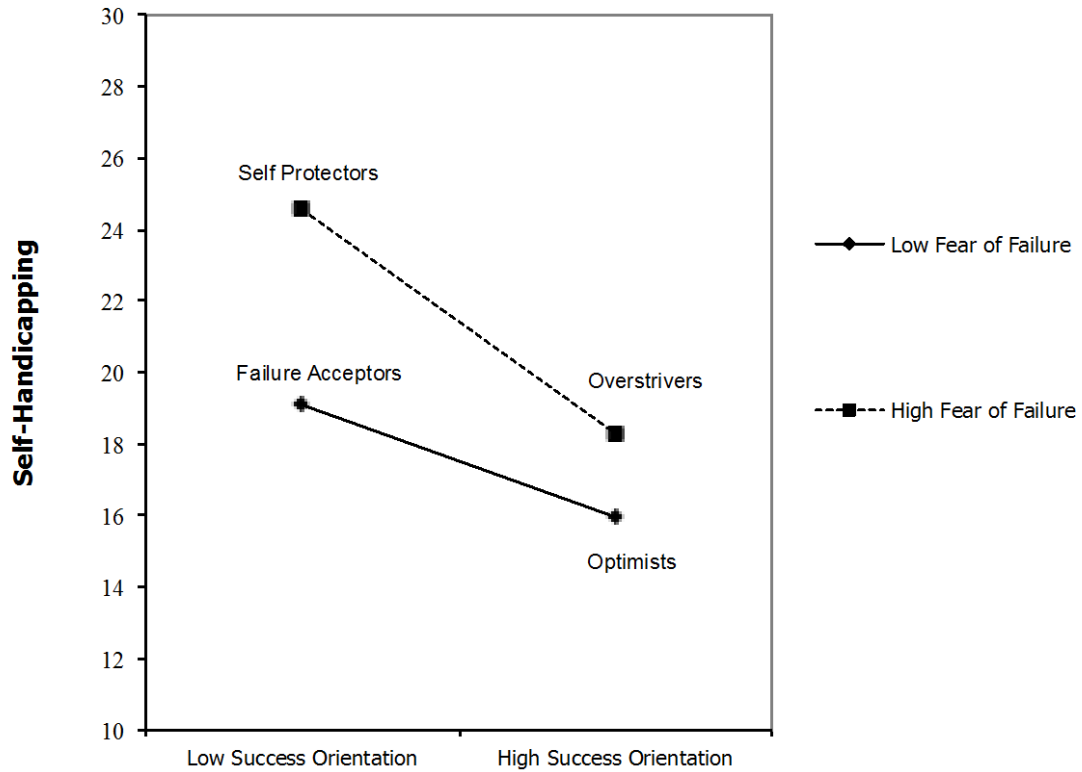

Figure 4. Predicted Self-handicapping as a function of fear of failure and success orientation. Values are based on standardized coefficients and represent one standard deviation below and above the mean. Total self-handicapping scores range from a minimum of 6 to a maximum of 42.

Figure 5. *Interaction between Fear of Failure and Success Orientation on Student Disengagement (Australia N=643)*
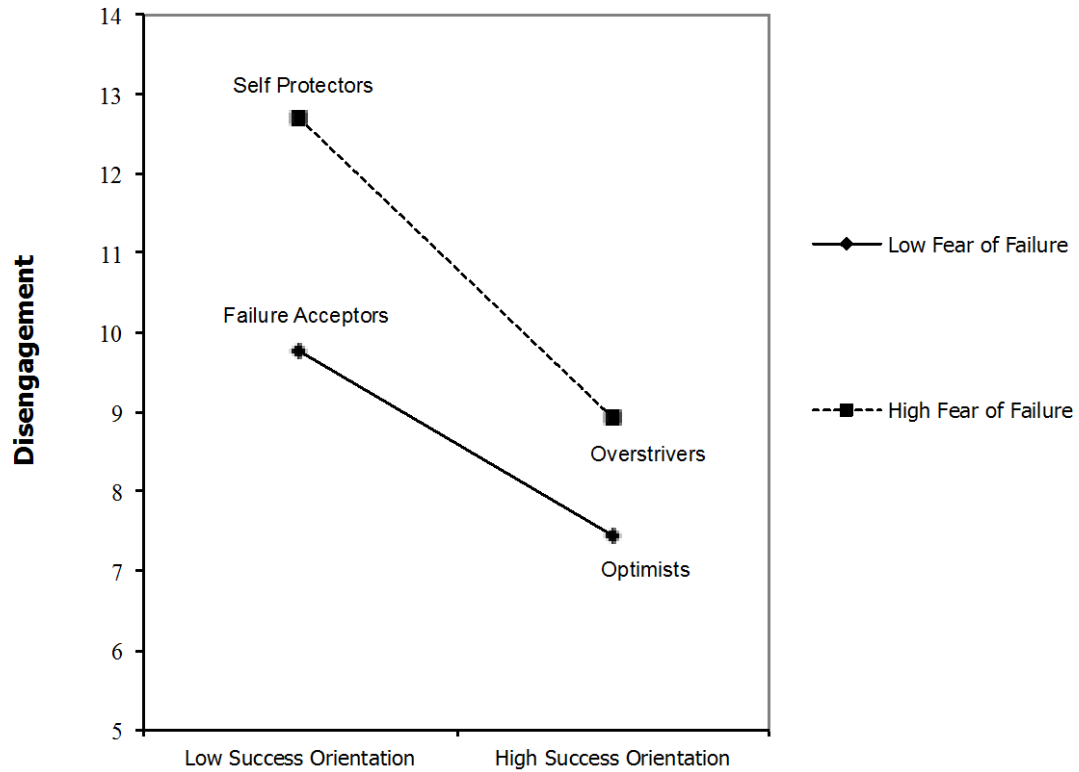

Figure 5. Predicted Disengagement as a function of fear of failure and success orientation. Values are based on standardized coefficients and represent one standard deviation below and above the mean. Total disengagement scores range from a minimum of 3 to a maximum of 21.

Figure 6. *Interaction between Fear of Failure and Success Orientation on Truancy (Australia N=643)*
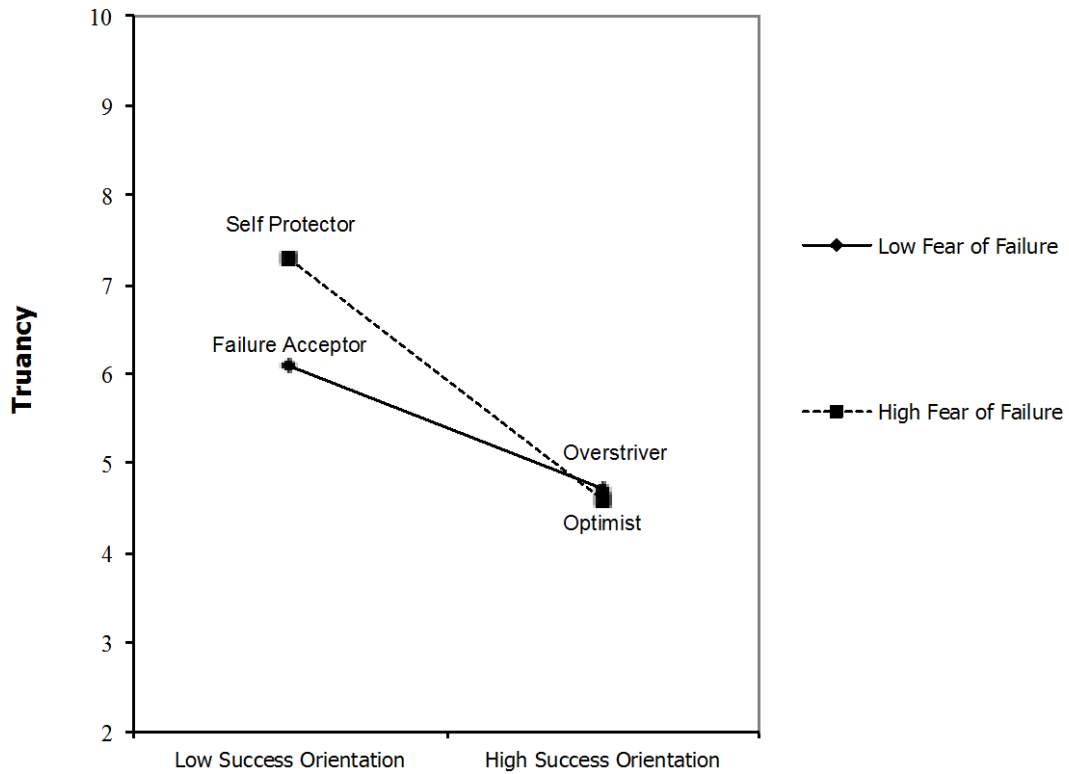

Figure 6. Predicted Truancy as a function of fear of failure and success orientation. Values are based on standardized coefficients and represent one standard deviation below and above the mean. Total truancy scores range from a minimum of 2 to a maximum of 14.

Figure 7. *Interaction between Fear of Failure and Success Orientation on Self-reported Academic Achievement (Australia N=643)*
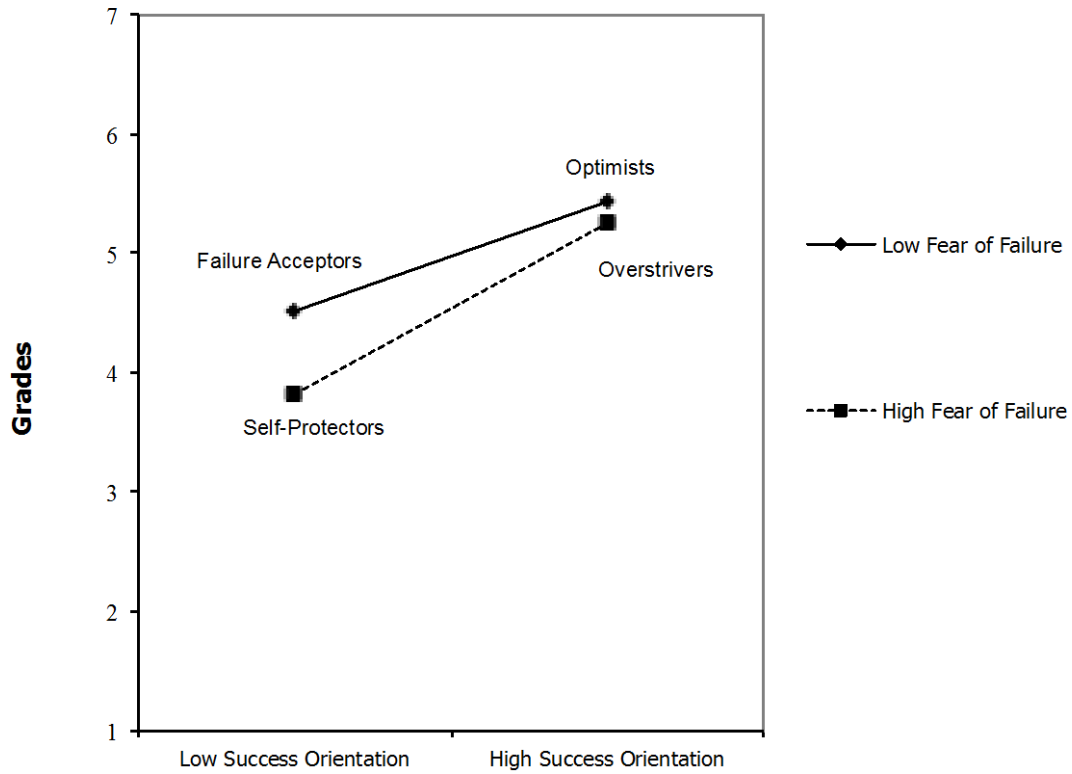

Figure 7. Predicted Mean Grades as a function of fear of failure and success orientation. Values are based on standardized coefficients and represent one standard deviation below and above the mean. Scores for grades range from 1 (D or F average/among the worst in my class) to 7 (Mostly As/among the best in my class).

Table 1: *Descriptive Statistics: Means and Standard Deviations, Cronbach's Alphas and Pearson Product-Moment Correlations (Japan, N=1423).*

Variable	M	SD	Possible Range	α	1	2	3	4	5
							Correlations		
1. Success Orientation	19.06	6.39	6.00 – 42.00	.782	1	.28***	-.05	.33***	-.20***
2. Fear of Failure	27.16	6.11	5.00 – 35.00	.838		1	.24***	.39***	.08**
3. Self Handicapping	17.35	6.60	6.00 – 42.00	.795			1	.15**	.20**
4. Defensive Pessimism	23.26	6.33	6.00 – 42.00	.768				1	-.08**
5. Helplessness Attributions	21.27	5.12	7.00 – 49.00	.611					1

*p<0.05 **p<0.01 *** *p* < 0.001

Table 2: *Study 1 (Japan): Results of Hierarchical Multiple Regression Predicting Self-Handicapping, Defensive Pessimism and Helplessness Attributions (N = 1423)*

Dependent Variable and Step	β At Step	β Final	R^2	R^2Change	95% CI [a]
Self-Handicapping					
1. Success Orientation	-.12**	-.13**			
Fear of Failure	.27**	.27**	.07**	07**	[.05, .10]
2. Success Orientation X Fear of Failure		-.14**	.09**	.02**	[.06, .10]
Defensive Pessimism					
1. Success Orientation	.24**	.24**			
Fear of Failure	.32**	.32**	.20**	.20**	[.17, .24]
2. Success Orientation X Fear of Failure		-.02	.20**	.00	[.17, .24]
Helplessness Attributions					
1. Success Orientation	-.24**	-.25**			
Fear of Failure	.15**	.15**	.06**	.06**	[.04, .09]
2. Success Orientation X Fear of Failure		-.07*	.07**	.01*	[.04, .09]

**$p < .001$ * $p < .05$

Table 2: Beta is the standardized regression coefficient. Increments for variables entered at ΔR^2 significance levels are based upon F tests for that step. [a] 95% Non-central confidence intervals were computed for R^2 at each step.

Table 3:

Study 2 (Australia): Descriptive Statistics: Means and Standard Deviations, Cronbach's Alphas and Pearson Product-Moment Correlations (N =643).

Variable	M	SD	Possible Range	α	1	2	3	4	5	6	7	8
									Correlations			
1. Success Orientation	30.94	5.94	6.00 – 42.00	.847	1	.25***	-.20***	.22***	-.30***	-.25***	-.24***	.40***
2. Fear of Failure	20.23	5.99	5.00 – 35.00	.802		1	.17***	.49***	.06	.17***	.00	-.05
3. Self Handicapping	19.28	7.80	6.00 – 42.00	.855			1	.13***	.39**	.44***	.40***	-.31***
4. Defensive Pessimism	26.26	5.60	6.00 – 42.00	.712				1	-.02	.12**	-.03	.02
5. Helplessness Attributions	19.69	6.11	7.00 – 49.00	.752					1	.39***	.31***	-.30***
6. Disengagement	9.70	4.34	3.00 – 21.00	.819						1	.50***	-.38***
7. Truancy	5.60	4.88	2.00 – 14.00	.862							1	-.30***
8. Mean self-reported grade	4.79	1.22	1.00 – 7.00	.906								1

*p<0.05 **p<0.01 *** p < 0.001

Table 4:

Study 2 (Australia): Results of Hierarchical Multiple Regression Predicting Self-Handicapping, Defensive Pessimism and Helplessness Attributions (N =643)

Dependent Variable and Step	β At Step	β Final	R^2	R^2Change	95% CI [a]
Self-Handicapping					
1. Success Orientation	-.26**	-.31**			
Fear of Failure	.24**	.25**	.09**	09**	[.05, .14]
2. Success Orientation X Fear of Failure		-.12**	.11**	.01**	[.06, .15]
Defensive Pessimism					
1. Success Orientation	.10**	.11**			
Fear of Failure	.46**	.46**	.25**	.25**	[.19, .30]
2. Success Orientation X Fear of Failure [b]		.01	.25**	.00	[.19, .30]
Helplessness Attributions					
1. Success Orientation	-.34**	-.35**			
Fear of Failure	.14**	.15**	.11**	.11**	[.07, .16]
2. Success Orientation X Fear of Failure		-.04	.11**	.00	[.07, .16]

**p < .001 * *p* < .05

Table 4: Beta is the standardized regression coefficient. Increments for variables entered at ΔR^2 significance levels are based upon F tests for that step. [a] 95% Non-central confidence intervals were computed for R^2 at each step.

Table 5:

Study 2 (Australia): Results of Hierarchical Multiple Regression Predicting Disengagement, Truancy and Self-reported Achievement (N =643)

Dependent Variable and Step	β		R^2	R^2Change	95% CI [a]
	At Step	Final			
Disengagement					
1. Success Orientation	-.31***	-.36**			
Fear of Failure	.24***	.25***	.12***	.12***	[.07, .16]
2. Success Orientation X Fear of Failure		-.11**	.13***	.01***	[.08, .17]
Truancy					
1. Success Orientation	-.26***	-.31***			
Fear of Failure	.07	.08*	.06***	.06***	[.03, .10]
2. Success Orientation X Fear of Failure [b]		-.12***	.07**	.01***	[.04, .11]
Self-reported Achievement					
1. Success Orientation	.43***	.48***			
Fear of Failure	-.16***	-.17***	.17***	.17***	[.12, .23]
2. Success Orientation X Fear of Failure		.12***	. 19***	.02***	[.14, .24]

$**p < .001 * p < .01 * p < .05.$

Table 5: Beta is the standardized regression coefficient. Increments for variables entered at ΔR^2 significance levels are based upon F tests for that step. [a] 95% Non-central confidence intervals were computed for R^2 at each step.