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Learned resourcefulness, academic stress, academic performance and coping responses

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LEARNED RESOURCEFULNESS, ACADEMIC STRESS, ACADEMIC PERFORMANCE AND COPING RESPONSES

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Declaration

This thesis is submitted in accordance with the regulations of the University of Wollongong in fulfilment of the requirements for the degree of Doctor of Philosophy. I certify that this manuscript is entirely my work. It has not previously been submitted for a degree at another university or institution.

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Abstract

The purpose of the study was to examine the relationship between personal dispositions, academic stress, academic performance, cognitive appraisals, and coping responses. The study consisted of three parts. The purpose of study I was to examine whether academic attributional style, locus of control, learned resourcefulness, and academic stress each predict academic performance as indicated by a student's grade point average (GPA). A second aim of the study was to examine the moderating effect of learned resourcefulness on the academic stress / academic performance relationship. In the study, 141 first-year undergraduate students from the University of Wollongong completed a set of questionnaires including the Academic Attributional Style Questionnaire (AASQ; Peterson & Barrett, 1987), IPC Scales (Levenson, 1985), Self-Control Schedule (SCS, Rosenbaum, 1980), and the Undergraduate Stress Questionnaire (USQ, Crandall, Preisler & Aussprung, 1992). Research showed that academic stress was negatively associated with academic performance. The negative effect of academic stress on academic performance was moderated by learned resourcefulness. A high level of academic stress was associated with a low GPA in low resourceful students but not in high resourceful students.

Study II examined the effect of situation and learned resourcefulness on students' coping responses. Two hundred and fifty-five students participated in the study. Students completed the Self-Control Schedule (SCS, Rosenbaum, 1980) and the revised Ways of Coping Questionnaire (WCQ; Folkman &

Lazarus, 1988). Students reported their coping responses when they had an exam or an unsatisfactory exam result. Findings indicated that situation and learned resourcefulness had a significant effect on coping responses. Students tended to use more confrontive coping, more escape-avoidance, and more seeking social support in the situation of having an exam compared to the situation of having an unsatisfactory exam result. High resourceful students used more planful problem solving, more positive reappraisal and less escape-avoidance than low resourceful students did.

Study III examined the effect of situation and learned resourcefulness on students' cognitive appraisals and their coping responses with an intra-individual design. A hundred and ten students completed appraisal-related emotions scales (Folkman & Lazarus, 1985) and the Ways of Coping Questionnaire for three different exam situations: 1) having an exam in a week's time; 2) waiting for an exam result that is possibly a pass or a fail marginally; and 3) having an unsatisfactory exam result. Results revealed that students appraised having an exam situation as less threatening and more challenging, whereas a negative outcome situation was evaluated as more threatening, more harmful and less beneficial compared to other situations. High resourceful students perceived these situations as more challenging than low resourceful students did. Situation and learned resourcefulness also had a significant effect on coping responses. Students utilised more planful problem solving, more positive reappraisal, and more seeking social support in the situation of having an exam, compared to the situations of waiting for an ambiguous exam result and having a negative exam result. They relied on more distancing in the waiting situation, and they accepted more responsibility in the situation of having an unsatisfactory exam result. Consistent with the results of study II, high resourceful students tended to use more planful problem solving, more positive

reappraisal, more seeking social support, and less escape-avoidance than low resourceful students.

The findings provide support for the transactional theory indicating the effect of situational and personal (learned resourcefulness) factors on cognitive appraisals and coping responses. The results also suggest that high resourceful students can minimise or control the detrimental effect of academic stress on their academic performance. They appraise the stressful situations as challenging and they exhibit an adaptive coping pattern. It appears that it would be profitable to teach students resourcefulness skills.

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CHAPTER 1

Review of the Literature

Attribution Theory

Attribution theory is concerned with the perceived causes of a particular event and with the consequences of the causal attributions (Peterson, Buchanan & Seligman, 1995). Attribution theorists have asserted that individuals spontaneously seek to identify the causes of any events (Weiner, 1985a). Weiner (1979, 1980, 1985b), more specifically, has proposed a model describing the manner in which individuals explain their success and failure. According to Weiner's updated model (1985b), explanations about success and failure can be classified in terms of locus of causality (internal versus external), stability (stable versus unstable), and controllability (controllable versus uncontrollable).

The locus of control dimension concerns the degree to which a cause is related to factors within the person or the external environment to the person. Internal attributions include personal causes such as effort, ability, mood or health, whereas external attributions include environmental causes, such as task difficulty, luck, or teacher bias. A second dimension of causality refers to the stability of the cause over time. For example, ability is a stable cause, whereas effort is an unstable cause. Some external causes such as

difficulty of a certain task can be fairly stable, whilst other external causes such as luck are relatively unstable. Internal causes can also be stable or unstable. For example, ability is an internal and stable cause, whereas effort is an internal and unstable cause. The third dimension is controllability, which refers to whether the cause is controllable or uncontrollable by the person experiencing the event. Perceived controllability can coexist with any combination of stability and locus of causality. For instance, an internal and unstable cause (i.e., effort) would be considered controllable, whereas a stable and internal cause (i.e., ability), would, however, be viewed as uncontrollable.

Weiner has added causal globality as a fourth dimension, which refers to whether the explained cause affects a certain outcome (specific) or a variety of outcomes (global). For example, a lack of mathematical ability can be seen as a specific cause that affects outcomes related with mathematics, while intelligence is a more global cause that may influence achievement in many areas (Weiner, 1994). According to Weiner's original attribution theory (1986), causal attributions for success or failure affect expectancy of future success and affective reactions to performance outcomes, which, in turn, influence subsequent performance.

Causal Attributions and Expectancies

Weiner (1980, 1986) proposed that expectations regarding future outcomes are largely a product of attributions for past successes and failures. The stability dimension of causal attributions plays a determining role in the relationship between causal attributions and expectations concerning future outcomes. If past outcomes were attributed to stable factors (i.e., ability), then expectancies of future outcomes should be consistent with past outcomes. For example, attributing past failures to

stable factors leads to expectations of failure in the future. Similarly, success attributed to stable factors promotes expectancies of success. On the other hand, attributing past outcomes to unstable causes (i.e., effort) would not lead to an expectation that the same outcome will be experienced again in the future (Weiner, 1985b). For instance, an exam failure attributed to unstable factors, such as lack of effort, may not promote expectations of failure in subsequent exams.

Also, expectancies concerning future outcomes are assumed to change through the perceived stability of the cause of an outcome. Stable attributions for success cause a higher increase in expectancy of future success than do unstable attributions. Stable attributions for failure, however, result in a greater decrease in expectancy of future success than do unstable attributions (Weiner, 1985b). For example, if a student expected to be successful but failed in an exam, and if he/she attributes this failure to stable factors such as ability, then his/her expectations of success would shift in response to the failure. This is because he/she would believe that the cause of his/her failure will be present in the future. If the student attributes the failure to unstable factors, such as effort, his/her expectations may not change. Then he/she would still expect to be successful in the future, because he/she would believe that the cause of his/her failure will not be present in the future.

There is empirical evidence supporting the relation between causal stability and expectancy of future outcomes. Meyer (1980), for example, found a significant correlation between the stability dimension of the causal attribution for an exam performance and expectancy of future success. The results indicated that expectancy of future success was higher when success was ascribed to stable factors and lower when attributed to unstable causes. Expectancy of failure was higher when failure was attributed to stable

factors, such as general intelligence, and lower when attributed to unstable causes, such as difficulty of exam. In a field study, Day (1982) investigated the relationship between attributions and intentions in a natural academic event. Subjects who were prematurely withdrawing from university were asked the causes of their withdrawal and then their intentions concerning their possible return to university. Subjects who attributed their withdrawal to unstable causes (e.g., "need a break from academic work") were more likely to report that they intended to return to university.

Causal Attributions and Affective Reactions

Affective reactions in the context of achievement are influenced by causal attributions following performance outcomes (Weiner, 1986, 1994). Weiner has identified two groups of achievement-related emotional reactions, "outcome dependent" and "attribution-related" affective reactions. "Outcome related" affective reactions, which are general emotional states (i.e., displeasure), occur immediately in response to an achievement outcome regardless of attributions. For example, in the face of failure, an individual experiences disappointment. Following causal analysis, more specific emotions related to "attribution-dependent" affective reactions would be elicited, depending on the causal ascriptions of success or failure. For example, attributing failure to lack of effort generates feelings of guilt, whereas attributing failure to lack of ability leads to a sense of shame. Effort attributions for success result in pride, whereas luck attributions for success may lead to feelings of surprise.

The relationship between attributions and affective reactions to achievement outcomes has also been supported in several studies (Forsty & McMillan, 1981; McAuley, Russell & Gross, 1983; McFarland & Ross, 1982;

Russell & McAuley, 1986; Zaleski, 1988). In one experimental study by Mcfarland and Ross (1982), subjects' achievement outcomes and their attributions for success or failure were manipulated. They found a causal relationship between attributions made for a performance and emotional reactions to performance outcomes. It was also reported that general emotions as well as attribution-dependent affective reactions were affected by causal attributions. Success attributed to ability generated greater positive emotions than failure, whereas success attributed to task-ease did not lead to greater positive emotions than failure.

In another study, Russell and McAuley (1986) found that causal attributions were significant predictors of affective reactions to success and failure. Similarly, Zaleski (1988) found a significant correlation between attributions and affective reactions to success and failure. Internal attributions for success were associated with pride, whereas external attributions for success were associated with gratitude and surprise. In the failure condition, internal attributions were related to guilt and shame while external attributions were related to anger and frustration. Results clearly confirm that there is a relationship between causal attributions for success and failure and affective reactions to achievement outcomes.

Attributions and Academic Performance

Causal attributions have been found to impact academic performance through their effects on expectancies of future success and affective reactions to performance outcomes (Weiner, 1986, 1994). Expectancy of future success plays an important role in striving for achievement. If an individual expects to succeed, he or she will try hard in order to attain the

expected outcome. Conversely, if the person has a low expectancy of success, then his/her striving for achievement will be low.

For example, Platt (1988) studied the relationship between attributions for high school success, expectancy of success in college, and subsequent achievement assessed by college grade point average (GPA), with college freshmen who considered their high school performance as successful. It was found that ability attributions for success had a positive effect on expectancy of future success. Specifically, students who attributed their high school success to high ability expected to be more successful in college than those who attributed their high school success to effort, easy task or luck. Attributions for success did not directly affect subsequent academic performance (college GPA); however, expectancy of future success significantly affected subsequent academic performance. Specifically, students with a high expectancy of success received higher grades (GPA) than students with relatively low expectations of success. The results of Platt's study supported Weiner's theory (1985b) that suggests an indirect effect of performance attributions on subsequent performance.

Affective reactions to past outcomes have also been shown to have an impact on subsequent performance. The sense of guilt experienced as a result of past failure leads to performance increments, whereas shame promotes performance decrements (Weiner, 1986, 1994). For example, in a study by Covington and Omelich (1984), college students who regarded their midterm exam performance as unsatisfactory were given a chance to sit a second exam. The subjects' attributions of their failure in the first exam, affective reactions (shame, humiliation and guilt) to this failure, and their performance in the subsequent exam were obtained. The results indicated the effect of affective reactions on subsequent exam performance.

Taken together, Weiner's attribution theory suggests that causal attributions for success and failure influence individuals' affective reactions to achievement outcomes and their expectancy of future success, which are significant determinants of performance. In other words, the effects of causal ascriptions on performance are mediated through expectancy of future success and affective reactions to the outcome in the achievement context. Furthermore, expectancy of success, which results from attributing failure to unstable causes and success to stable causes, improves motivation, and therefore leads to performance enhancement, while expectancy of failure, which is caused by stable attributions for failure, is predicted to reduce motivation and therefore impedes performance (Weiner, 1985b). It has been suggested that attributing failure to uncontrollable causes, such as ability, results in a sense of shame, thereby inhibiting performance, whereas effort attributions for failure elicit feelings of guilt, increasing motivation, and leading to performance increments (Weiner, 1994).

The effects of causal attributions on subsequent academic performance have not heretofore been examined extensively. Ability, effort, task difficulty and luck have been identified as the most dominant causal attributions within the domain of achievement behaviour (Weiner, 1985b). Therefore, most of the studies investigating the relationship between attributions and academic performance have been focused on the influences of ability, effort, luck and task difficulty attributions rather than dimensions of causal attributions (i.e., stability, internality).

For example, Sweeney, Moreland, and Gruber (1982) found that successful students were more likely to attribute their performance to effort and ability than unsuccessful students. Similar findings were reported in a study by Griffin, Combs, Land, and Combs (1983), in which 114 college students were asked to evaluate their academic performance and to make

attributions for their achievement. The results indicated that successful students tended to make higher attributions on effort and ability than unsuccessful students. Effort, in particular, was evaluated as the most important cause of academic achievement.

In another study, Kovenglioglu and Greenhaus (1978) found a significant relationship between ability attributions, current academic success, and exam performance. College students who believed they had done well in a test due to their own ability tended to receive better grades in a subsequent exam. It was also reported that effort attributions for success were negatively related to subsequent test performance. In a recent study of mathematical achievement and attributions, Bempechat, Nakkula, and Wu (1996) used a mathematical achievement test to assess children's mathematical performance. Children's attributions for their mathematical performance were also obtained. They found that high achievers tended to attribute their performance to their own ability rather than to effort.

However, Bernstein, Stephan and Davis (1979) investigated the relationship between attributional dimensions and subsequent academic performance, and reported contrary results. They found that students who attributed their performance in the first exam to stable causes, such as ability, were more likely to receive a lower grade in the subsequent test than students who attributed their performance in the first exam to unstable causes.

Another area of attribution research concerns intervention studies in which investigators examine the effectiveness of attribution training programs and their effects on students' academic performance. For example, several intervention studies have demonstrated increased striving for achievement in children who were trained to attribute failure to lack of

effort (e.g., Dweck, 1975; Fowler & Peterson, 1981). In other studies, Wilson and Linville (1982, 1985) attempted to change college freshmen's attributions from stable to unstable causes following failure. Students were given a single-session intervention suggesting that many students experience academic problems as freshmen, but do better in the upper class years. When compared with a control group, the trained students showed greater academic performance. In addition, it was observed that subjects who had received the information had a lower college dropout rate than the control group.

Using a single-session attribution training procedure, Noel, Forsty, and Kelley (1987) instructed college students who were regularly failing that their poor performance was due to unstable internal causes, such as deficient effort and poor study habits. Subjects who received this information obtained improved grades in subsequent course examinations compared to a control group. In another intervention study with mentally retarded adults, Zoeller, Mahoney and Weiner (1983) found that future success was facilitated by a balance of ability and effort attributions for success. Forsterling (1985) reported after a review of the literature that "attributional retraining methods have been consistently successful in increasing persistence and performance" (p. 510). Taken together, it appears that causal attributions have an impact on achievement-related behaviour.

Self-serving bias. Several studies (e.g., Arkin & Maruyama, 1979; Forgas, Bower & Moylan, 1990; Zaleski, 1988) have indicated that success tends to be attributed to internal causes, while failure tends to be attributed to external causes. This tendency has been named the self-serving bias. Self-serving bias can be seen as an adaptive tendency because it leads individuals to protect their self-confidence and to continue striving towards achievement. In a study by Arkin and Maruyama (1979), students were

divided as successful and unsuccessful in terms of their satisfaction with their academic performance. The subjects were then asked to identify the causes of their own performances as an actor and those of an average student's performance as an observer. It was found that successful students were more likely to attribute their own performance to internal causes (effort and ability) than the performance of the average student. On the other hand, unsuccessful students were more likely to attribute their own performance to external causes (task difficulty and luck) than the performance of the average student.

This study was replicated by a group of Australian researchers (Forgas, Bower & Moylan, 1990). The purpose of their study was also to examine the effects of emotional states on causal attributions, so the moods of the subjects were manipulated by the researchers. Self-serving bias was reported both in the positive mood condition and in the control group (no mood manipulation). In contrast, subjects with a negative mood attributed their failure to internal factors rather than to external factors. The researchers concluded that moods have an impact on causal attributions, and that a self-serving bias may not be observed in all situations.

Learned Helplessness Theory

Learned helplessness theory originally proposed by Hiroto and Seligman (1975) predicts that exposure to an uncontrollable negative outcome in one situation can lead to expectations of noncontingency in future, similar situations. The effects of helplessness due to perceptions of uncontrollability include cognitive deficits, reduced motivation and maladaptive emotional reactions. For example, helpless individuals are more likely to exhibit behavioural passivity (motivational deficit), experience

sadness and dysphoria (maladaptive affective reaction), and ignore the correct patterns of behaviour-outcome relationship (cognitive deficit).

Mc Kean (1995) applied the concept of helplessness to the academic domain using the term "academic helplessness". Academic setbacks (e.g., failed tests, missed classes) are a common feature of academic life. When students are faced repeatedly with academic setbacks, they may believe that academic tasks are beyond their control. The belief in the uncontrollability of their academic affairs leads to expectations that academic setbacks cannot be avoided, and that subsequent academic tasks will be uncontrollable.

Reformulation of The Learned Helplessness Theory

As previously discussed, the learned helplessness theory could not account for individual differences in vulnerability to helplessness. Thus, the theory was reformulated by Abramson, Seligman and Teasdale (1978) within an attributional framework. According to this reformulation, individuals' explanations (attributions) for events perceived by the individual as "good" or "bad" influence the person's expectations about future outcomes, and these expectations determine the person's reactions to outcomes. In other words, individuals' reactions to an event are affected indirectly by their explanations of that event (Peterson & Seligman, 1984).

Three explanatory dimensions of attributional style have been proposed: internality (internal versus external), stability (stable versus unstable), and globality (global versus specific). As indicated earlier, internality concerns the degree to which a cause is related to factors within the person or the external environment to the person. Stability refers to the

stability of the cause over time, and globality refers to whether the cause affects a certain outcome or a variety of outcomes.

Attributional Style

Attributional style, also called explanatory style, is defined as "a tendency to make particular kinds of causal inference rather than others, across different situations and across time" (Metalsky & Abramson, 1981, p. 38). Learned helplessness theorists (e.g., Peterson & Seligman, 1984) have asserted that some individuals tend to explain negative events with internal, stable, and global causes, and attribute positive events to external, unstable, and specific causes. This has been referred to as pessimistic explanatory style.

Results of previous studies have indicated that pessimistic explanatory style has been associated with depression (e.g., Nolen-Hoeksema, Girgus & Seligman, 1986; Peterson & Seligman, 1984; Seligman, Abramson, Semmel & Baeyer, 1979; Stiensmeier-Pelster, 1989; Sweeney, Anderson & Bailey, 1986; Tiggeman, Winefield, Winefield & Goldney, 1991). Moreover, recent studies have associated pessimistic explanatory style with poor health (Peterson, Seligman & Vaillant, 1988), poor job performance (Seligman & Schulman, 1986), and poor academic performance (e.g., Peterson & Barrett, 1987).

For example, Seligman and Schulman (1986) studied the relationship between explanatory style and productivity in the work place with sales agents. They found that pessimistic explanatory style was a significant predictor of performance deficit in the work place and the likelihood of dropping out of the job. The researchers further suggested that low

achievement in many domains might be explained by pessimistic explanatory style. This is because pessimistic explanatory style leads to low motivation, passivity, and giving up following failure.

In contrast to pessimistic explanatory style, optimistic explanatory style has been associated with resistance to depression (Peterson & Seligman, 1984), high productivity in the work place (Seligman & Schulman, 1986), and high academic performance (e.g., Peterson & Barrett, 1987). When individuals attribute negative outcomes to external, unstable, and specific causes, and positive outcomes to internal, stable, and global causes, they are said to have an optimistic explanatory style. Similar to the self-serving bias discussed earlier, optimistic explanatory style protects or enhances self-confidence, and has been considered as an adaptive attributional style.

Cross-Situational Consistency and the Stability of Attributional Style

Unlike Weiner (1980, 1985a, 1985b), who considers situation-specific causal attributions, learned helplessness theorists (e.g., Peterson & Seligman, 1984) consider causal attributions as a personality disposition. They claim that attributional style is consistent across situations and across time.

A number of studies has focused on the cross-situational consistency in causal attributions and the stability of attributional style. For example, Burns and Seligman (1989) found that attributional style for negative events was reasonably stable over time, whereas attributional style for positive events was not. The researchers found evidence of a consistent explanatory style for different events. In a three-year longitudinal study, Tiggeman,

Winefield, Winefield and Goldney (1991) examined the consistency and stability of attributional style among Australian university students. Results of the study demonstrated that attributional style is significantly consistent and stable in the 19-22 year-old age group. However, not all studies have shown similar results.

For example, Compas, Forsythe, and Wagner (1988) found that causal attributions for a stressful event were consistent over time, whereas causal attributions for two different types of stressor were not consistent. The authors noted that individuals may not exhibit consistency in attributional style across all situations. In another study, only weak evidence for cross-situational consistency of attributional style was found (Cutrona, Russell & Jones, 1985). In view of these findings, the researchers suggest that the concept of attributional style must be confined to a narrow range of situations to which the concept applies. For example, a person may have an optimistic explanatory style for interpersonal relationships and a pessimistic explanatory style for academic events. It appears that attributional style is relatively stable over time, whilst cross-situational consistency of attributional style is open to discussion. Therefore, in the present study, attributional style is confined to the academic area by using the academic attributional style.

Attributional Style and Academic Performance

Reformulated learned helplessness theory suggests (e.g., Abramson, Seligman, Teasdale, 1978) that individuals who habitually attribute negative events to internal, stable, and global causes, that is, a pessimistic explanatory style, are more vulnerable to helplessness deficits than individuals with an optimistic explanatory style following a negative event. According to Tiggeman and Crowley (1993), application of this proposition to

the academic domain suggests that students who explain their failures with internal, stable, and global causes, such as lack of ability, are more likely to exhibit performance deficit, which is a significant indication of helplessness, on subsequent tasks in the academic domain. Thus, the reformulated learned helplessness theory, forming one of the theoretical foundations of the present study, emphasises the effect of attributional style on academic performance.

Attributional style and academic performance in elementary school students. The relationship between attributional style and achievement behaviour has been reported by a number of studies in the academic domain (e.g.,Nolen-Hoeksema, Girgus & Seligman, 1986; Peterson, 1990; Peterson & Barrett, 1987; Schulman, 1995). Several studies by Dweck and her colleagues (e.g., Diener & Dweck, 1978, 1980; Dweck, 1975; Dweck & Goetz, 1978; Dweck & Licht, 1980; Dweck & Wortman, 1982) have indicated that some children tend to explain academic failure in terms of stable and global causes (e.g., their own stupidity), and explain success in terms of unstable and specific causes (e.g., luck). Dweck and Licht (1980) reported that these explanatory style correlated with decreased persistence, decreased initiation of tasks, lowered quality of problem solving strategies, and lowered expectations for future success.

Similarly, Nolen-Hoeksema, Girgus, and Seligman (1986) researched the relationship between explanatory style and academic performance with 168 elementary school students in a longitudinal study. Students completed The Children's Attributional Style Questionnaire and their teachers completed the Student Behaviour Checklist (Fincham & Cain, 1984), which measures children's tendency to helplessness. An example of the type of

questions on the student behavioural checklist is "wants to do easy problems rather than hard ones". Also, children's scores were obtained from the California Achievement Test (CAT), which includes vocabulary, reading, and mathematics subtests. It was found that pessimistic explanatory style was associated with poor academic performance as evaluated by the CAT. Furthermore, the researchers reported a significant correlation between attributional style and academic problems. Children who tended to explain negative events by internal, stable, and global causes and positive events by external, unstable, and specific causes showed more helpless behaviour in the classroom, whereas children with an optimistic explanatory style did not exhibit academic problems due to helpless behaviour.

Attributional style and academic performance in college students. A number of studies has been focused on behavioural and cognitive characteristics of university students, depending on their explanatory style. For example, in a study by Peterson and Colvin (cited by Peterson, 1990, p. 62), students who attended a four week summer school were asked to record their failures and successes in the class, and their attempts to improve their academic performance. The results indicated that students with a pessimistic explanatory style were less likely to try to improve their performance by seeking help or studying textbooks. Similarly, Peterson and Barrett (1987) found that students with pessimistic explanatory style were less likely to visit an academic adviser, and they also reported vague academic goals.

In another study, Mc Kean (cited by Mc Kean, 1995) examined behavioural and cognitive characteristics of procrastinators. He found that students who had a tendency to delay academic tasks perceived academic

tasks as uncontrollable and aversive, and exhibited a more pessimistic explanatory style. Also, those students received lower grade point averages. He concluded that "helplessness may take the behavioural form of academic procrastination and impede academic success" (p. 462). More specifically, students with a pessimistic explanatory style tend to perceive academic events as uncontrollable and they delay academic tasks, so consequently they cannot succeed.

Peterson (1990) reported an unpublished study by Peterson and his colleagues in which 121 upper class students completed the Academic Attributional Style Questionnaire and the Motivated Strategies for Learning Questionnaire (MSLQ; Pintrich, 1988 cited by Peterson, 1990) including 19 subscales, such as self-efficacy, test anxiety, help seeking, and planning. They found that pessimistic explanatory style negatively correlated with a number of cognitive and motivational approaches to academic tasks, e.g., help-seeking, study environment management, planning, monitoring, regulating, critical thinking, and perceived competence. The students' midterm grade point averages were also obtained. It was reported that pessimistic explanatory style was related to low midterm grade point averages.

In general, pessimistic explanatory style has been related to avoidance of help-seeking, behavioural passivity, delay of initiation of academic tasks, low perceived competence, low planning and low regulating skills. Each of these characteristics is a risk factor for low academic performance (Ames & Lau, 1982; Covington & Omelich, 1979).

Several studies have investigated the direct relationship between attributional style and academic performance of college students. For example, in a study by Seligman (cited by Peterson, 1990), 175 college

students were administered the Attributional Style Questionnaire (ASQ) at the beginning of the academic year. Students' Scholastic Aptitude Test (SAT) scores and GPA were obtained at the end of the academic year. It was found that pessimistic explanatory style was related to lower GPA. When students' scores on SAT were statistically controlled to eliminate the confounding effect of ability, the relationship between explanatory style and academic performance was still significant. As a result of the study, Peterson (1990) speculated that "explanatory style contributed to academic performance above and beyond a student's level of scholastic ability" (p. 60).

Schulman (1995) reported a series of unpublished studies by Schulman, Seligman, Kamen, et al. In the first of their three studies, the researchers used the Attributional Style Questionnaire (ASQ; Peterson, Semmel, Baeyer, Abramson, Metalsky & Seligman, 1982) to examine the relationship between attributional style and grade point average (GPA) in college freshmen. Subjects consisted of 289 college freshmen who were administered the ASQ at the beginning of their first semester, and then their GPAs were obtained at the end of the first semester. They found that students' attributional style did not correlate with their grades, concluding that these freshmen have very little college experience when they complete the ASQ. However, Schulman et al. (cited by Schulman, 1990) replicated the study with a sample of 175 upper class students, and found that attributional style significantly predicted GPA. In their third study, it was found that attributional styles of military academy students, while significantly predicting the likelihood of their dropping out of military academy in the first year, did not correlate significantly with GPA.

One possible reason for the inconsistent results of the three studies, reported by Schulman (1995), might be the use of the attributional style

questionnaire rather than the academic attributional style questionnaire. As earlier discussed, there is a debate about cross-situational consistency of attributional style. Academic attributional style is therefore the more suitable variable for studying in the academic domain.

In another study by Peterson and Barret (1987), the relationship between the academic attributional style of university students and their academic performance was investigated. They administered the Academic Attributional Style Questionnaire to 87 college freshmen. Also, students' academic goals and their number of visits to an academic adviser were listed. Then each student's grade point average was obtained at the end of the academic year. The authors found that students who explained negative academic outcomes with internal, stable, and global causes received lower grades than did students who used external, unstable, and specific causes. It was also found that students with pessimistic explanatory style were less likely to visit an academic adviser, and they reported vague academic goals. Consequently, the researchers concluded that students with internal, stable, and global attributions for negative academic outcomes have a tendency to desist from striving and they cannot achieve academic goals, whereas students with external, unstable, and specific attributions refresh their effort and they succeed.

Other studies (Follette & Jacobson, 1987; Tiggeman & Crowley, 1993), however, have reported that attributional style is not related to academic performance. For example, Tiggeman and Crowley (1993) studied the relationship among academic attributional style, situation-specific attributions, and subsequent academic performance with a sample of 37 students. College students who had unsatisfactory grades in a final exam were given a chance to sit a second exam. Students' attributional styles were assessed using the Academic Attributional Style Questionnaire, and subjects

were also asked to identify causes of their failures in the exam (situation-specific attributions). Subjects' performances in the second exam were used as a subsequent performance measurement. It was found that students who attributed their failure in the first exam to internal factors had lower grades than other students in the second exam. However, the globality dimension was not significantly correlated with subsequent exam performance. Also, previous exam performance correlated with subsequent academic performance, while academic attributional style did not correlate significantly with subsequent performance. These results partly supported Weiner's attribution theory suggesting a relationship between attributions for a particular outcome and subsequent performance. However, the results of Tiggeman and Crowley's study did not support the reformulated learned helplessness theory, which suggest that pessimistic attributional style leads to performance deficit in subsequent performance when failure is experienced.

In another study, Follette and Jacobson (1987) examined the effect of attributional style on subjects' plans for further study. University students' attributional styles and their attributions for an examination performance were assessed. The subjects were then asked to write new plans to prepare for the next exam. Results indicated that students' plans were not affected by their attributional styles. It was also observed that students who attributed their poor examination performance to internal, stable, and global causes made more plans to study for the next examination. If students' plans are considered as a predictor of their subsequent performance, these results contrast with the attribution theory and learned helplessness theory.

In summary, some studies (e.g., Peterson, 1990; Peterson & Barrett, 1987; Schulman, 1995) have supported the notion that pessimistic explanatory style is positively related to behavioural passivity in the

academic domain, and negatively related to academic performance, whereas other studies (e.g., Follette & Jacobson, 1987; Tiggeman & Crowley, 1993; Schulman, 1995) have found no significant relationship between attributional style and academic performance.

Rationale for Selecting Academic Attributional Style as a Predictor of Academic Performance

Researchers who have examined the relationship between attributional style and academic performance have obtained equivocal results. A number of studies (e.g., Peterson, 1990; Peterson & Barrett,1987) have supported the notion that pessimistic explanatory style is negatively related to academic performance, whereas other studies (e.g., Tiggeman & Crowley, 1993) have found no significant relationship between attributional style and academic performance. It appears that there is no consensus about the relationship between academic attributional style and academic performance. The equivocal nature of these results suggests that the relationship between academic attributional style and academic performance needs to be further explored.

There is a debate about the effect of the internality dimension on performance. Studies based on Weiner's attribution theory have suggested that attributing failure to internal and unstable factors, such as effort, may lead to performance improvements. Learned helplessness researchers, however, have argued that external and unstable attributions for failure are related to high academic performance. Fosterling (1985) has criticised learned helplessness theory and claims that attributing failure to luck (external and unstable) may not result in performance increments due to its uncontrollability by the person.

In the face of these criticisms, learned helplessness theorists have emphasised that one attributional dimension may not affect performance, and perhaps all attributional dimensions (stability, locus of causality, and globality) should be considered in order to predict future success. Following these discussions on attributional dimensions and attributional style, the present study examines the relationship between each of these dimensions (internality, stability, globality, and controllability) and academic performance, as well as the relation of academic attributional style to academic performance.

Locus of Control

The concept of locus of control was originally derived from Rotter's social learning theory (Rotter, 1966). Rotter's social learning theory suggested that "when the reinforcement is seen as not contingent upon the subject's own behaviour that its occurrence will not increase an expectancy as much as when it is seen as contingent. Conversely, its occurrence will not reduce an expectancy so much as when it is seen as contingent" (Rotter, 1966, p. 2). For example, if a student believes that academic success depends on his or her effort, a successful outcome will increase the amount of the student's effort at future tasks. Conversely, if the student believes that academic success depends on luck rather than his or her own behaviour, a successful outcome may not cause an increase in the student's effort in the future.

According to Rotter's social learning theory, expectancies can be generalised from one situation to another that is perceived as similar. Thus, individuals develop generalised expectancies about personal control over life events during the life span. For example, a child who believes that being

successful in a mathematics exam depends on luck can generalise this belief to other areas, such as English. Thus the child can develop a general expectation that success depends on luck. These generalised expectancies refer to a psychological characteristic known as locus of control. Rotter (1966) postulates that individual differences exist in generalised expectancies concerning the behaviour-reinforcement link. Some people tend to believe in internal control, whilst others believe in external control.

In sum, the concept of locus of control refers to the perceptions of individuals about their perceived controllability of events due to their own behaviour or to external factors (Rotter, 1966). People who believe that reinforcements or outcomes are contingent on their own behaviour are known as internals, whereas those who believe that reinforcements are controlled by factors beyond the individual's control are known as externals.

More recently, Levenson (1985) proposed three locus of control orientations: powerful others-oriented individuals, who believe that events are controlled by powerful people; chance-oriented individuals, who are fatalistic and believe luck is an important factor in life; and internals, who believe that events are contingent on their own behaviour.

Locus of Control and Academic Performance

There is considerable evidence to suggest that locus of control is an important determinant of academic achievement in college students (Nord, Connelly & Daignault, 1974; Perry & Penner, 1990; Prociuk & Breen, 1975; Waugh & Herbert, 1993). In one study Nord, Connelly and Daignault (1974) found that a student's locus of control predicted academic achievement as determined by the student's grade point average (GPA). Similarly, Webb,

Waugh, and Herbert (1993) studied the relationship between locus of control and test performance by medical students. They found that internal locus of control was positively correlated with academic performance. Findley and Cooper (1983), in their review of related literature, reported that there is a great amount of research indicating a positive relationship between internality and academic performance. They reported that internal locus of control has been associated with high academic performance, while external locus of control has been associated with low academic performance.

Locus of control has also been associated with other personality dispositions that facilitate academic success. For example, a positive relationship has been observed between internal locus of control and readiness to delay gratification. Internal locus of control individuals may develop good self-control skills (Phares, 1976).

Additionally, it is claimed that many teaching techniques developed for a better education cannot be used effectively with students who have an external locus of control (Perry & Penny, 1990). For example, Perry and Dickens (1984) examined the effect of perceived control and of instructor expressiveness on academic performance. They found that compared to low expressive instruction, high expressive instruction resulted in an improvement in exam performance by students who felt they had control over their performance, but not in the performance of students who felt they lacked control. These results suggest that students who felt lack of control over their academic performance could not benefit from high quality instruction as well as students who felt they had control over their academic performance. Therefore, it may be desirable to change students' locus of control beliefs from external to internal.

In another study (Perry & Penner, 1990), college students were divided into two groups depending on their locus of control orientations. The experimental group was then shown a videotape, in which a professor emphasised the importance of effort in the academic domain as attributional retraining. The results indicated that attributional retraining improved the academic performance of the externals. On the other hand, no performance enhancement was observed in the students who had an internal locus of control. The findings may be construed as saying that internals are more likely to use their academic abilities, whereas externals may tend not to use their abilities as effectively due to the belief that academic events are beyond their control.

Limitations of Past Locus of Control Research

Levenson (1980) has criticised past studies which have failed to draw a distinction between two groups of externals, chance-oriented externals (congruent externals) and powerful others-oriented externals (defensive externals). Also, Rotter (1966) proposed a dichotomy of externals as "congruent externals" and "defensive externals". Congruent externals believe that events are controlled by chance, luck, and fate, while defensive externals prefer external explanations to avoid accepting responsibility for a probable negative outcome. This dichotomy was ignored by Rotter and some other researchers, while a few researchers preferred to divide externals into two groups.

For example, Prociuk and Breen (1975) examined the relationship between locus of control and academic performance, as well as the study habits of college students. They found that internals were more successful than either chance-oriented externals (congruent externals) or powerful

others-oriented externals (defensive externals). Powerful others-oriented externals were more successful than chance-oriented externals. The researchers contend that studies investigating locus of control construct and academic achievement have had shortcomings, because they were not considered in the light of the distinction between powerful others-orientation and chance-orientation. These findings suggest that researchers should continue to investigate the distinction between chance-orientation and powerful others-orientation.

Rationale for Selecting Locus of Control as a Predictor of Academic Performance

Previous studies based on reformulated learned helplessness theory were criticised by many researchers because these studies did not include the concept of control (e.g., Brown & Siegel, 1988; Fosterling, 1985; Schiaffino & Levenson, 1992). For example, Brown and Siegel (1988) pointed out that the concept of control had been a key factor in the original learned helplessness theory. however, this concept disappeared in the recent reformulated learned helplessness theory. They suggest that considering perceived controllability of events, as well as other dimensions of the attributional style, would increase their predictive power. Similarly, Fosterling (1985) stated that the reformulated learned helplessness theory suggests that there are two risk factors for helplessness deficits. The first risk factor is the person's belief that negative events are beyond their own control. The second risk factor is the person's tendency to explain negative events in a pessimistic manner. However, none of the previous studies has examined the student's expectation of controllability over events. We will examine both of these factors in the present study.

Rotter's social learning theory (1960) claims that internal explanations for failure lead to performance improvements, whereas external explanations result in performance decrements. Learned helplessness theory, on the other hand, suggests that external attributions for failure are related to high academic performance, whereas internal attributions are associated with low academic performance (e.g.,Peterson, 1990; Peterson & Barret,1987). These two propositions are examined in the present study.

As mentioned before, Levenson (1980) has criticised past studies which have failed to draw a distinction between the two groups of externals: chance-oriented externals who are fatalistic, and powerful others-oriented externals who believe that events are controlled by powerful people. In the present study, following Levenson's (1980) advice, externals have been dichotomised as chance-oriented and powerful others-oriented externals to find possible differences in their academic performance.

Learned Resourcefulness

Learned resourcefulness has been defined as "an acquired repertoire of behavioural and cognitive skills with which the person is able to regulate internal events such as emotions and cognitions that might otherwise interfere with the smooth execution of a target behaviour" (Rosenbaum, 1990, p. xiv). Rosenbaum (1980a) developed a self-report measure assessing individuals' general repertoire of self-control behaviour and their tendencies to use these behaviours when faced with everyday problems.

The Rosenbaum Self-Control Schedule assesses learned resourcefulness and includes the following aspects: (a) the use of self statements to control emotional responses, e.g., when feeling depressed

trying to think about pleasant events; (b) the application of problem-solving strategies, that is, trying to approach difficult problems in a systematic way; (c) the tendency to delay immediate gratification, e.g., finishing a compulsory job before starting something more enjoyable; and (d) perceived self-efficacy, e.g., a belief that one can get rid of bad habits without outside help. These self-control skills are learned over time.

Individual differences exist in the construct of learned resourcefulness. For instance, some individuals have an extensive repertoire of self-control behaviour (i.e., high resourceful individuals) whereas others have a limited repertoire (i.e., low resourceful individuals).

Rosenbaum (1990) suggests that learned resourcefulness does not influence an individual's perceived stress level, but it does influence an individual's self-efficacy expectancy. The concept of self-efficacy expectancy refers to a person's beliefs about whether he or she can cope with a situation effectively (Bandura, 1977). Studies have found evidence of the effect of learned resourcefulness on self-efficacy. For example, Rosenbaum and Ben-Ari Simira discovered a significant positive relationship between learned resourcefulness and self-efficacy expectancy in a sample of dialysis patients. Similarly, Lewinsohn and Alexander (1990) found a positive correlation (.30) between learned resourcefulness and self-confidence. In another study (Weisenberg, Wolf, Mittwoch & Miculicer, 1990, cited by Rosenbaum,1990), it was reported that the relationship between learned resourcefulness and self-efficacy expectancy was not significant in novel situations.

In view of these results, Rosenbaum (1990) stated that in novel situations self-efficacy might be affected by other sources such as observing others. However, after using self-control skills effectively in a stressful

situation, the individual's self-efficacy expectancies are more likely to increase. Rosenbaum has also pointed out the need for research investigating the relationship between learned resourcefulness and self-efficacy.

Rosenbaum (1990) states that self-control skills minimise the detrimental effects of adverse events on behaviour. For example, two students may be equally anxious when they have an exam, but they may differ in their learned resourcefulness. The high resourceful student may use various skills to minimise the effects of his or her anxiety on his or her performance, while the less resourceful student may be defeated by his or her anxiety. In a field study, Rosenbaum and Rolnic (1983) observed that high resourceful people who were seasick showed fewer performance deficits in a stormy sea than low resourceful people who were seasick. In a laboratory study, Rosenbaum (1980) found that high resourceful subjects' tolerance time to a laboratory-produced cold pressure was significantly longer than those of low resourceful subjects. These results suggest that high resourceful individuals can control and minimise the negative effects of stressful events by using their self-control skills.

Additionally, Rosenbaum and Jaffe (1983) tested the relationship between an individual's learned resourcefulness and performance level in the face of repeated failures. In the study, subjects were divided as high resourceful and low resourceful on the basis of a median split (25.00) of the range of scores on the self-control schedule (SCS; Rosenbaum, 1980). The subjects were randomly assigned to experimental conditions that involved escapable noise, inescapable noise and only noise (control group). The subjects were then asked to solve some anagrams and their performance on this task was evaluated. Subjects' attributions for the noise task were also obtained. It was found that high resourceful subjects showed significantly

better performance in the anagram task than low resourceful subjects, following the inescapable noise condition. It was also found that there was no significant relationship between the subjects' causal attributions for their performance in the noise task and their performance in the anagram task. These results led Rosenbaum and Jaffe (1983) to conclude that the negative effects of uncontrollable failure are mediated by individuals' repertoire of self-control behaviour rather than attributional style.

In another experiment, Rosenbaum and Ben-Ari (1985) tested the role of learned resourcefulness and the role of causal attributions in the occurrence and generalisation of learned helplessness. Firstly, they exposed subjects to one of three experimental conditions: noncontingent failure feedback, noncontingent success feedback or no feedback at all, and then they assessed high and low resourceful subjects' motivations and performance on an uncontrollable subsequent task (insolvable anagrams). The results of the study revealed that after being exposed to repeated failures on the training task, low resourceful subjects exhibited performance deficits on the subsequent task, whereas high resourceful subjects exhibited reassertion. No significant relationship was found between subjects' attributions and subsequent performance level. It was also found that high resourceful subjects were more likely to attribute successful outcomes to their own efforts. The results of these two studies (Rosenbaum & Ben-Ari, 1985; Rosenbaum & Jaffe, 1983) suggest that individual differences in learned resourcefulness play a determining role in an individual's response to failure.

Edwards and Riordan (1994) administered the Rosenbaum's Self-Control Schedule (SCS) to black and white South African students, to measure the learned resourcefulness of the students. Compared to white students, black students had significantly higher scores on the SCS,

indicating that black students had higher learned resourcefulness than their white counterparts. Specifically, none of the black students had a low score on SCS. The researchers have suggested two possible explanations for the absence of low resourceful subjects among the black students. The first possibility is that the black population in South Africa has lived under difficult conditions, such as poverty and social and political persecution, and they have therefore had to develop greater resourcefulness to survive. A second explanation is that among the South African black population, only resourceful individuals overcome life's difficulties and can enter university. In other words, black students might be a very selective subgroup of the black population.

Research in the literature of learned resourcefulness suggests that resourcefulness is related to performance in the face of stressful situations. High resourceful individuals can minimise the adverse effect of negative events on their performance by using their extensive repertoire of self-control behaviour. In contrast, low resourceful individuals may not control the detrimental effect of negative events on their performance and tend to give up.

Rationale for Selecting Learned Resourcefulness as a Predictor of Academic Performance

In contrast to learned helplessness theory, Rosenbaum's learned resourcefulness theory (1990) suggests that the adverse effects of negative events on performance are mediated by learned resourcefulness rather than attributional style. The present study has been designed to examine this assertion in the academic domain.

Despite a number of studies (e.g., Rosenbaum & Jaffe, 1983; Rosenbaum & Ben-Ari, 1985; Rosenbaum & Rolnic, 1983) examining the effect of learned resourcefulness on performance in laboratory tasks, there is little research on the relationship between learned resourcefulness and academic performance. An important aim of the present study is to examine the relationship between learned resourcefulness and academic performance. There are two possibilities in examining this relationship. First, the academic environment can be considered stressful because students experience a high level of chronic stress due to time pressure, workload, exams, assignments and uncertainty. From this point of view the direct relationship between learned resourcefulness and academic performance can be examined. Second, to examine the moderating effect of learned resourcefulness on the relationship between academic stress and academic performance, individual differences in academic stress level should be considered. In the present study, both the direct and the moderating effects of learned resourcefulness were tested.

Concepts of Stress

There is considerable debate about the definition of stress (Cox, 1993; King, Stanley & Burrows, 1987; Lazarus & Folkman, 1984 ; Selye, 1974). Stress has been defined differently depending on the conceptual frameworks of stress. There have been three main approaches to the study of stress: the response-based approach, the stimulus-based approach, and the transactional approach. A response based model of stress has been developed by Selye (1974), who defined stress as "the nonspecific response of the body to any demand made upon it" (p. 27). Selye (1974) investigated the responses to noxious stimuli (e.g., electric shock) in animals and found

that negative situations result in a group of physiological responses. According to the General Adaptation Syndrome (GAS) formulated by Selye, the body's stress responses go through three stages: alarm reaction, resistance, and exhaustion. During these stages, the organism exhibits physiological changes (e.g., heart rate and blood pressure increase). Selye claimed that the response syndrome has a universal pattern of defence reactions regardless of the nature of the stressor and the kind of organism, and that physiological responses to negative stimuli are the same in all organisms.

In the stimulus-based approach, stress has been used to denote disturbing stimuli such as noise, time pressure, examination, major life events, and minor life events. The stimulus-based approach may be subdivided into two groups. A group of researchers (e.g., Meyers & Martin, 1974; Tomasini, 1973) presumed that some situations are evaluated as stressful by all individuals and ignored the important role of the mediating cognitive process. Especially in early studies, stress has been defined as negative stimulation, such as ego-threat instructions (Meyers & Martin, 1974), unfavourable comparison with others (Tomasini, 1973), or negative feedback (Snyder & Katahn, 1970). However, later efforts attempted to take an individual's appraisal of events into consideration. This second group of researchers (e.g., Dohrenwend & Shrout, 1985; Eckenrode & Gore, 1981; Rabkin, 1976), defining stress as a stimulus event, has attempted to identify the life events that are likely to arouse stress by obtaining subjects' appraisals about stressful situations. For example, Holmes and Rahe (1967) focused on acute life events and determined a number of life changes that were evaluated as stressful, e.g., change in school, retirement, or divorce.

More recently, the transactional model formulated by Lazarus and Folkman (1984) has focused on reciprocal causality between the person and

the environment. Lazarus and Folkman (1984) defined psychological stress as "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (p. 19). According to Lazarus (1991), defining stress simply as an external stimulus ignores individual differences in the perception of stress. The same life event might be extremely stressful for one individual whilst it may not be stressful for another individual. For example, having an exam may have a very different meaning for one student as opposed to another.

In summary, the stimulus-based approach assumes that if an event is perceived as stressful by a group of individuals, this event will also be appraised as stressful by others. However, the transactional model suggests that the stressfulness of an event varies from one individual to another. The present study, using subjective scaling, takes into account individual differences in the stress process.

Major and Minor Life Events

In earlier years, studies of stress have been focused on major life events. For example, a group of researchers (e.g., Dohrenwend & Shrout, 1985; Eckenrode & Gore, 1981; Rabkin, 1976) has defined major life events, such as illness or death of a family member, as stressful and they have studied the effect of those major events on physiological and mental health.

After Lazarus and Folkman's (1984) study, researchers changed their orientation from major life events to daily problems. They used a new term "hassles" by which they mean " the irritating, frustrating, distressing demands that to some degree characterise everyday transactions with the

environment" (Kanner, Coyne, Schaeffer & Lazarus, 1981, p.3). Kanner et al., (1981) developed the Daily Hassles Scale, including items such as "too many things to do", "not enough time for family", "misplacing or losing things", and "concerns about weight". It was assumed that major life events include a set of daily problems (Kanner et al., 1981). From these findings, they have interpreted that major life events may be one cause of "hassles", but that "daily hassles" usually occur independently of major life events.

Researchers have supported the notion that everyday problems are also important forms of stress. For example, in a study by Veroff, Dovan and Kulka (1981), subjects were asked to report their major source of stress. It was found that daily problems tended to be reported more frequently than major life events. Similar findings were reported in a more recent study by Mattlin, Wethington, and Kessler (1990). In a survey of stressful events, subjects were asked to identify the most stressful events experienced by them during the past year. It was found that chronic daily problems were mentioned more frequently than major life events.

Studies investigating the effect of daily hassles on health have suggested that everyday problems have a significant negative effect on physical (DeLongis, Coyne, Dakof & Lazarus, 1982; Green, Folkman & Lazarus, 1988; Holahan, Holahan & Belk, 1984; Zarski, 1984) and mental health (Kanner et al., 1981; Eckenrode, 1984). For example, Lazarus and DeLongis (1983) found that the effect of daily hassles on psychological adjustment was greater than that of major life events. Research findings suggest that minor life events are also important forms of stress and they affect physical and mental health as much as major life events.

Stress Among University Students

Research findings have suggested group differences in the pattern of reported daily problems (Kanfer et al., 1981; Pearlin & Liberman, 1977). Students commonly complained about academic problems such as grade pressures. Some researchers have therefore constructed stress scales to measure stress levels of students (e.g., Cahir & Morris, 1991; Crandall, Preisler & Aussprung, 1992; Kohn & Frazer, 1986). These stress questionnaires include a list of academic events as well as other life events.

For example, Schafer (1996) asked college students about their most stressful daily hassles, in order to develop a daily hassles index. He observed that the most irritating daily hassles were usually school-related stressors such as constant pressure of studying, too little time, writing term papers, taking tests, future plans, and boring instructors. It is known that academic problems have been reported as the most common source of stress for students (Aldwin & Greenberger, 1987; Genshaft & Browles, 1991; Mcguire & Mitic, 1987).

Stress associated with academic activities has been linked to various negative outcomes, such as poor health (e.g., Greenberg, 1981; Lesko & Summerfield, 1989), depression (e.g., Aldwin & Greenberger, 1987), and poor academic performance (e.g., Clark & Rieker, 1986; Linn & Zeppa, 1984). For example, Lesko and Summerfield (1989) found a significant positive correlation between the incidence of illness and the number of exams and assignments. In another research study (Aldwin & Greenberger, 1987), it was found that perceived academic stress was related to anxiety and depression in college students.

The Effect of Stress on Academic Performance

The relationship between stress and poor academic performance has been supported by several research studies (e.g., Clark and Rieker, 1986; Linn and Zeppa, 1984; Lloyd and Gartrell, 1983). For example, Felsten and Wilcox (1992) investigated the effect of life stress on academic performance measured by self-reported grade point averages (GPAs). In their study, 146 male undergraduate students completed the college life adjustment and stress survey (CLASS), then reported their GPA. The researchers found a significant negative correlation between the stress levels of college students and their academic performance. They also found that stress significantly predicted academic performance and somatic stress symptoms (i.e., hypertension and headaches). Thus, stress was associated with low GPA and high symptomatology.

In a similar study, Blumberg and Flaherty (1985) found an inverse relationship between academic performance and self-reported stress level. Linn and Zeppa (1984) reported a significant negative correlation between life stress and exam performance in third-year medical students.

A number of studies has focused on the effectiveness of stress intervention programs in reducing stress and in improving academic performance. In a study by Rajendran and Kaliappan (1990), the effectiveness of an academic stress management program was examined in terms of academic stress and academic performance. The results revealed that a decrease in stress levels resulted in improved academic performance. However, in another study (Kiselica, 1994), the efficacy of a preventive stress inoculation program was tested through comparison with a control group. The findings indicated that the program led to an improvement in stress levels. However, no significant difference was observed between the

academic performance of the experimental as opposed to the control group. More specifically, students' academic performance was not affected by a decrease in their stress levels. This finding proposed that stress had no effect on academic performance.

Students experience a high level of academic stress due to workload, time pressure, grade pressure, assignments, and uncertainty. Several studies have shown that stress has a detrimental effect on academic performance; however, this finding is less than conclusive.

Coping with Stress

When people encounter stressful life events they try to change the adverse effect of these events on their wellbeing by using a number of strategies. For example: hoping for a miracle, praying, talking to someone, oversleeping or getting professional help. There are three main conceptual frameworks of coping: trait approach, situation-oriented approach and process approach.

Trait approach. The trait model suggests that individuals tend to exhibit a stability in their coping ways over time and across situations (e.g., Miller, 1987, 1992; Roth & Cohen, 1986). The term 'coping style' has been used to refer an individual's preferred way of coping. Researchers who consider coping as a trait emphasise the impact of personality characteristics on coping responses. That is, they believe that certain personality characteristics predispose individuals to use certain types of coping when dealing with stressful encounters. For example, Carver, Scheier and Weintraub (1989) asked subjects to report their tendencies to use a variety of coping strategies in order to develop a coping inventory. They also

examined the relationship between coping and a number of personality dispositions. The results demonstrated that active coping and planning were positively related to optimism, feelings of control under stressful situations, self-esteem, hardiness, and type A personality, and negatively related to trait anxiety. In contrast, denial and behavioural disengagement were positively correlated with trait anxiety and negatively associated with optimism, feelings of control, self-esteem, and hardiness.

Situation-Oriented Approach. In contrast to trait approach, proponents of the situation-oriented approach emphasise the role of situational determinants in coping behaviour, and contend that individuals consistently employ the same coping strategies in certain situations. Empirical studies have supported the notion that individuals respond in varying ways to different types of stressor (For a review see Mattlin, Wethington & Kessler, 1990). For example, McCrae (1984) categorised situations such as threatening, challenging, and loss in order to examine the effect of situation on coping responses. He reported significant situational effects. Threatening situations generated wishful thinking, faith and fatalism, while challenging situations resulted in very different types of coping, such as rational action, humour and positive thinking.

Process Approach. According to the transactional theory formulated by Lazarus and Folkman (1984), the coping process begins with an individual's cognitive interpretation of the stressful situation. Lazarus and Folkman (1984) stated three kinds of appraisal; primary appraisal, secondary appraisal, and reappraisal. When an individual confronts a new or changing stimulus or event, they may make a primary appraisal in terms of the consequences of the stress on his or her wellbeing as irrelevant, benign positive or stressful. If the situation is seen as potentially stressful then it may be perceived as a threat, challenge or harm/loss. Threat implies an

anticipated harm or loss, whereas challenge refers to possible mastery or gain. If an event is appraised as harm or loss, this means the damage or injury has already occurred, as in failing a college entrance exam.

Secondary appraisal ensues if the event or environment is perceived as stressful, threatening, challenging or harmful. The person then evaluates his or her ability to control or cope with the stressful event. During this process the individual evaluates coping resources and options that might be available in a stressful situation. Coping resources include personal resources, such as problem-solving skills, and social resources, such as social support. Appraisals are changed by new information that may result in less or more stress depending on the new situation or changing environment.

According to transactional theory, cognitive appraisals have a direct effect on emotions. For example, threat appraisals can generate feelings of worry, fear or anxiety, whereas challenge appraisals can lead to feelings of eagerness, hopefulness and confidence. Harm/loss appraisals can generate a sense of guilt, anger, sadness, and disappointment. Benefit appraisals, on the other hand, can lead to feelings of happiness, exhilaration, relief, and pleasure (Folkman & Lazarus, 1991; Lazarus, 1993; Lazarus & Folkman, 1984, 1985).

Lazarus and Folkman (1984) have emphasised that cognitive appraisal processes are usually difficult to observe empirically, because the individual may be unaware of some of the basic elements of an appraisal. As a solution to this problem the authors suggested that primary appraisals can be assessed via the quality and intensity of emotional reactions. Several studies have supported the efficacy and reliability of this method (Folkman & Lazarus, 1985; Drumheller, Eicke & Scheier, 1991). For example,

Drumheller and his colleagues asked college students to report their emotions in response to the stages of a recent exam. They used these emotional responses as an indicator of cognitive appraisals.

Coping Responses

The transactional theory defines coping as " The person's cognitive and behavioural efforts to manage (reduce, minimise, master or tolerate) the internal and external demands of the person-environment transaction that is appraised as taxing or exceeding the person's resources" (Folkman, Lazarus, Gruen & Delongis, 1986a, p.2). Lazarus and Folkman have emphasised several critical points regarding the definition of coping.

First, coping is viewed as a complex and continuously changing interaction between a person and the environment, rather than a stable characteristic of a person. Therefore, transactional theory (a) focuses on what the person actually thinks and does, (b) considers coping responses in a specific context, and (c) emphasises that an individual's coping responses will change depending on the changing person-environment relationship. Second, coping refers to any effort to manage the demands of a stressful situation independent of its consequences. Thus, coping is not necessarily helpful in terms of reducing stress. Third, this definition implies a distinction between coping behaviour and automated adaptive behaviour. The process of coping is consciously controlled by the person. Therefore, automated responses are not considered as coping behaviour.

Lazarus and Folkman (1984) proposed a dichotomy of coping strategies as emotion-focused coping and problem-focused coping. Emotion-focused coping refers to attempts to regulate emotional responses to stressful situations. For example, distancing, positive reappraisal and self-controlling are named as emotion-focused coping strategies. In a study by

transactional theorists (Folkman, Lazarus, Dunkel-Schetter, Delongis & Gruen; 1986) five distinct emotion-focused strategies emerged. Accepting responsibility refers to one's role in a stressful situation (e.g., "Realised I brought problem on my self"). Distancing includes efforts to detach oneself from the stressful situation (e.g., "Tried to forget the whole thing"). Escape/avoidance refers to efforts to escape the stressful situation by wishful thinking, sleeping, eating, drinking and using drugs or medication (e.g., "Slept more than usual"). Positive reappraisal represents efforts to focus on positive aspects of the situation (e.g., "Changed or grew as a person in a positive way"). Self-controlling refers to efforts to regulate a person's feelings (e.g., "Kept others from knowing how bad things were").

Problem-focused coping refers to efforts to modify or control the source of the stress. Problem-focused coping is divided into two categories: as confrontive coping and planful problem solving. Confrontive coping includes aggressive and generally interpersonal strategies (e.g., "Stood my ground and fought for what I wanted"). Planful problem solving, on the other hand, refers to deliberate efforts to solve the problem which are not usually interpersonal (e.g., "I knew what had to be done, so I doubled my efforts to make things work"). Seeking social support refers to efforts to obtain emotional support and information from others. This strategy falls in between emotion-focused coping (e.g., "Talked to someone about how I was feeling") and problem-focused coping (e.g., "I got professional help").

Temporal and Cross-Situational Consistency of Coping Responses

There is disagreement over the consistency of coping responses. As discussed earlier, trait approach conceptualises coping as a stable construct, whereas transactional theory emphasises that coping responses are variable

rather than stable. Empirical studies investigating consistency of coping have distinguished between cross-situational consistency and temporal consistency. Cross-situational consistency involves use of the same coping strategies across different situations. Temporal consistency, on the other hand, refers to use of the same coping strategies over time when dealing with the same situation.

Studies examining cross-situational consistency of coping have reported different findings. For example, Miller et al. (1988) found that coping responses were stable across different situations. In contrast, Folkman and Lazarus (1985) observed that students tended to change their coping strategies across three stages of an exam. Similarly, Compas et al. (1988) reported a low consistency in students' ways of coping across academic and interpersonal stressful encounters.

In another study, Folkman and her colleagues (Folkman, Lazarus, Gruen & DeLongis,1986a) examined the consistency of coping responses in the same person across different situations, using autocorrelations. The results demonstrated that confrontive coping, seeking social support and planful problem-solving were highly variable, whereas positive reappraisal and self-controlling were moderately stable across five occasions over five months.

Similarly, Carver and Scheier (1994) examined students' ways of coping during three stages of an exam. They found that religion, alcohol and using social support were reasonably stable across two stages of an exam, whereas other coping strategies (e.g., active coping, planning, use of instrumental support) changed from one stage of the exam to another. In a similar study, Bolger (1990) found that students changed their coping

strategies from preparation stage to waiting stage with an exception of focus on the positive.

Some studies have examined the relationship between coping dispositions and situation-specific coping responses. For example, Carver, Scheirer and Weintraub (1989) found that most of the coping dispositions were correlated with situation-specific coping strategies at low or moderate level. They reported high correlations for turning to religion (.76) and alcohol-drug disengagement (.50), and moderate correlations for seeking emotional social support (.39), focusing on and venting of emotions (.34), positive reinterpretation and growth (.31), and mental disengagement (.34). They also found insignificant correlations for suppression of competing activities, seeking instrumental social support, and restraint coping. In a recent study (Schwartz, Neale, Marco, Shifman & Stone, 1999), it was reported that only two forms of coping, escape-avoidance and use of religion, exhibited stronger trait-like features, but that others did not. It was also found that the relationship between dispositional coping and actual coping wasnot significant.

The results of these studies suggest that certain forms of coping are more consistent (e.g., use of religion), whilst other forms of coping are more variable across situations (e.g., active coping). The correlations between coping style and situation-specific coping responses are ranged from low to moderate.

Studies investigating temporal consistency of coping responses have found that individuals are usually consistent in their coping patterns when dealing with the same or similar situations over time. For example, Stone and Neale (1984) examined the daily coping responses of married couples. They found that the participants used their most popular strategy 70% of the

time during a 21-day period when they responded to the same or similar stressors. Similarly, Patterson et al. (1990) found that elderly people tended to respond to similar stressful events in a similar manner. In another study by Compas et al. (1988), students' coping efforts in the face of two diverse stressful situations (academic and interpersonal) were examined over a period of four weeks. It was found that the students' coping strategies were moderately stable over time in the face of similar stressors. Results of these studies suggest that individuals are more likely to use a similar pattern of coping when confronted with the same or similar stressors.

In summary, research has found that coping responses are at least moderately stable over time when dealing with the same stressor, whereas their cross-situational consistency is questionable. Low cross-situational consistency of coping indicates that situation plays an important role in determining coping strategies. Temporal consistency of coping suggests that coping responses are also influenced by personal factors when dealing with the same or similar types of stressor.

The present study is based on transactional theory rather than the trait approach. However, in the light of the literature it has been assumed that coping is, at least to some degree, stable over time in the same or similar stressful situations. Therefore, students were asked to report their tendencies to use eight coping strategies when they are faced to described situations, rather than their coping strategies for a single examination.

Situational and Personal Determinants of Coping

The influence of situational and personal factors on coping responses has been examined by many studies. A number of personality dispositions

and situational variables has been suggested as determinants of an individual's coping responses. Some of these factors are related to the present research.

Perceived Stress. Lazarus and Folkman (1984) have suggested that individuals tend to use more emotion-focused strategies and less problem-focused strategies in highly stressful situations compared to less stressful situations. They also propose that in high stress conditions individuals would need to utilise tension-reducing strategies and emotion-focused strategies to minimise emotional distress. This proposal is supported in an empirical study by Endler and Parker (1990). They found that students with an high state anxiety used more emotion-focused coping strategies, whereas students with a low state anxiety utilised more task-related coping strategies.

Other studies, however, have obtained mixed findings. Aldwin and Revenson (1987), for example, found that subjects tended to use both emotion-focused coping and problem-focused coping when they were highly stressed. Similarly, Terry (1991) found that seeking emotional support and instrumental action were both predicted by highly stressed students taking an exam. In another study, Terry (1994) reported that students indicated they employed minimisation (emotional coping) when they appraised low rather than high levels of stress. It seems that the appraised stressfulness of a situation does influence individuals' coping responses. However, the direction of this effect is not certain.

Perceived Control. Control can be examined objectively or subjectively. Objective controllability refers to actual situational condition. However, perceived situational control, which is a part of secondary appraisal, refers to the individual's judgments or beliefs about whether he or she is able to do something to change a specific stressful situation

(Folkman, 1984). Another component of secondary appraisal is self-efficacy expectancy, which represents individuals' perceptions of their ability to deal effectively with a particular situational demand (Bandura, 1977). These two components of secondary appraisal are instrumental in determining the coping strategies that people will use in a stressful situation.

It has been suggested that in situations appraised as amenable to change, or where high levels of self-efficacy exist, problem-focused strategies are more likely to be used. In contrast, when the situation is assessed as unchangeable, or self-efficacy expectancy is low, emotion-focused strategies are utilised (Folkman & Lazarus, 1980).

Empirical studies have found evidence for the influence of control on coping. Folkman et al. (1986b), for example, examined the relationship between primary appraisal, secondary appraisal, coping responses and encounter outcomes of community-residing adults. They found that subjects tended to utilise more confrontive coping, planful problem solving, positive reappraisal, and acceptance of responsibility when they appraised the situation as changeable. In contrast, they used more distancing and more escape-avoidance when they appraised the situation as unchangeable.

Other studies have reported similar results. In a student sample, Carver et al. (1989) found that students who appraised their situation as changeable reported more active coping, planning, suppression of competing activities, and seeking instrumental social support, compared to students who appraised their situation as resistant to change. Denial and acceptance of responsibility were used more by students who appraised the situation as unchangeable. Similarly, Paterson et al. (1990) found that subjects preferred to use more emotion-focused coping (threat minimising and growth) in uncontrollable situations compared to controllable situations.

In another study by Compas et al. (1988), it was reported that academic stressors were appraised as more controllable than interpersonal stressful events. Students tended to use more problem-focused strategies when dealing with academic stressors compared to interpersonal problems. It was also found that there was greater use of emotion-focused coping under low-control situations.

In summary, studies examining the role of situational control on the coping process have found that problem-focused coping is utilised more in situations appraised as amenable to control, whereas emotion-focused coping is used more in situations which are perceived as having little chance for control (e.g., Carver et al., 1989; Folkman & Lazarus, 1985, Parkes, 1986).

Cognitive Appraisals. According to transactional theory, cognitive appraisals play an important role in determining a person's coping responses. A number of studies has focused on the effect of appraisals on the type of coping (e.g., McCrae, 1984; Chang, 1995). McCrae (1984), for example, examined individuals' coping responses under conditions of challenge, threat and loss. He reported that threat appraisals resulted in more wishful thinking, faith and fatalism, whereas loss appraisals resulted in more faith, fatalism and expression of feelings. Challenging situations led to a wide range of coping strategies, including rational action, perseverance, positive thinking, intellectual denial, restraint, self-adaptation, drawing strength from adversity, and humour. In a recent study by Chang (1995), it was found that primary and secondary appraisals significantly predicted eight coping strategies, including problem-solving, cognitive restructuring, expression of emotions, social support, problem avoidance, wishful thinking, self criticism, and social withdrawal.

Personality Dispositions. A number of studies has focused on the influence of personality dispositions on coping responses. For example, in a college student study, Bolger (1990) found that subjects who had a high score on the neuroticism scale used more distancing, more wishful thinking, and more self-blame than those low in neuroticism.

In another study, Terry (1991) examined the relationship between coping resources (internal control beliefs, self-esteem, neuroticism, low denial, social support), situational appraisals (stress, situational control beliefs, self-efficacy, importance), and coping responses in regard to an exam situation. Results of the study indicated that internal control beliefs, self-esteem, stress, self-efficacy and importance of the exam were positively related to instrumental action. Internal control beliefs and self-efficacy were negatively associated with escape/self-blame. Self-esteem, social support and stress were positively related to seeking emotional social support. Low denial was positively related to minimisation, whereas social support was negatively related to minimisation.

Another personality disposition influencing coping responses is locus of control. Folkman (1984) has proposed that locus of control belief is transferred to control appraisals in ambiguous situations. If the situation has clear and explicit cues about its controllability, an individual's control appraisal will be affected by the characteristics of the situation rather than generalised control belief. However, under ambiguous conditions, externals will appraise the situation as uncontrollable and internals will perceive the same situation as controllable.

Studies examining the role of locus of control on the coping process have generally reported that internals differ from externals in coping strategies. For example Parkes (1984) found that internals tended to use

more direct coping (similar to problem-focused coping) and less suppression than did externals. She also found that internals utilised more direct coping and less suppression when they appraised the situation as changeable. In contrast, externals used more suppression and less direct coping when they perceived the situation as amenable to change. The researcher concluded that internals tend to use more adaptive coping strategies than externals. In his literature review, Lazarus (1993) suggested that much more research examining the influence of personality variables on different coping responses is needed. Following his advice, the influence of learned resourcefulness on coping responses has been examined in the present study.

Coping with Academic Stress

There are several studies that have focused on students' ways of coping at different stages of an examination (e.g., Bolger, 1990; Carver & Scheirer, 1994; Folkman & Lazarus, 1985). In their classic study, Folkman and Lazarus (1985) investigated students' emotions, as an indicator of their primary appraisals, and coping responses at three stages of a naturalistic midterm exam. They asked college students to report their emotions and coping responses in class on three occasions (two days before the exam, five days after the exam and two days before the grades were announced, and five days after the grades were announced). They examined changes in emotions and coping responses from the preparation week to the waiting week, and from the waiting week to the outcome week, using t-tests.

The results of the analyses indicated that threat and challenge emotions did not change significantly from the anticipatory stage to the waiting stage, but decreased significantly from the waiting stage to the outcome stage. Harm and benefit emotions, on the other hand, increased

significantly from the anticipatory stage to the waiting stage, but did not change from the waiting stage to the outcome stage.

They also observed significant changes in coping responses as the examination unfolded. Students decreased their use of problem-focused coping, seeking social support, emphasising the positive, and self-isolation, but increased distancing from the preparation stage to the waiting stage. Students also decreased wishful thinking and distancing from the waiting stage to the outcome stage.

There was no significant increase in any ways of coping from the waiting stage to the outcome stage. Therefore, the researchers examined the effect of exam performance on students' ways of coping at the outcome stage. They found that the students who received lower grades reported using more wishful thinking, seeking social support, self-blame, tension reduction, and self-isolation, than the students who received higher grades in the exam. These results support transactional theory, indicating that there are changes in emotions and coping during the stages of a stressful encounter.

In a similar study by Bolger (1990), the effect of neuroticism and situation on coping responses was investigated. In the study, medical school applicants were asked to report their coping responses five weeks before the Medical College Admission Test, then 10 days before the examination, and finally 17 days after the exam and one month before the results were announced. Applicants also completed a neuroticism scale five weeks before the exam. Subjects' coping responses before and after the examination were compared. The results of the study indicated that the subjects used more problem-focused coping and more seeking social support during the pre-examination stage compared to the post-examination

stage. On the other hand, distancing was used more in the post-examination stage than in the pre-examination stage. It was also found that subjects who had a high score on the neuroticism scale used more distancing than those low in neuroticism. A significant effect of neuroticism by time on coping was also observed. Specifically, subjects high in neuroticism used more wishful thinking and more self-blame compared to their low-neuroticism counterparts in the pre-examination stage, but not the post-examination stage. Bolger interpreted these findings as a contribution to "the understanding of how static personality traits reveal themselves dynamically under stress" (p.536).

Similarly, Carver and Scheirer (1994) examined college students' appraisal-related emotions and their coping strategies during a naturalistic exam situation. They reported significant changes in emotions and coping. Specifically, threat emotions decreased significantly from the preparation stage to the waiting stage, and from the waiting stage to the outcome stage. Challenge emotions did not change significantly from the preparation stage to the waiting stage, but decreased from the waiting stage to the outcome stage. Harm emotions rose from the waiting stage to the outcome stage, whereas benefit emotions increased from the preparation week to the waiting week. Like emotions, many ways of coping changed from one stage of the examination to another. Students tended to use significantly more active coping, more planning, more suppression of competing activities, more acceptance, and more use of instrumental support in the anticipatory stage compared to the waiting stage. Students also decreased their use of mental disengagement, restraint, and use of emotional support from the waiting stage to the outcome stage. Overt denial was used more in the preparation stage than in the outcome stage. Researchers have also observed that use of alcohol, religion, positive reframing, denial, and

behavioural disengagement did not change significantly across the three stages.

In a recent study by Raffety, Smith and Ptacek (1997), students were asked to report their coping strategies when dealing with a midterm exam. Students' coping responses were measured every day for a seven-day period and three times on the day of the exam (immediately before the exam, immediately after the exam, and the evening after the exam). The results indicated that problem-solving gradually increased, peaked one day before the exam, and then decreased significantly after the exam. Proactive coping exhibited a similar pattern. It began to increase significantly three days before the exam, reached its peak immediately before the exam, and then decreased slowly but significantly until after the exam. Support-seeking began to increase two days before the exam, peaked one day before the exam, decreased significantly during the exam, and reached its peak again after the exam. Avoidance coping was very low during the week, then decreased significantly during the exam and finally increased after the exam.

Results of the studies examining students' appraisals and coping responses in different stages of an exam have supported transactional theory indicating significant changes in students' appraisals and coping strategies. Researchers have consistently reported that students have tended to use more planful problem-solving (problem-focused coping in Folkman & Lazarus' and in Bolger's studies, active coping and planning in Carver & Scheier's study, and problem-solving in Raffety, Smith & Ptacek's study) during the preparation stage compared to the waiting stage. Similarly, seeking social support (instrumental support in Carver & Scheier's study, and support-seeking in Raffety, Smith & Ptacek's study) has been used more during the preparation stage. In contrast, students have utilised more distancing (mental disengagement in Carver & Scheier's study, and

avoidance coping in Raffety, Smith & Ptacek's study) during the waiting stage than the preparation and the outcome stages. Research findings for other forms of coping are mixed rather than consistent. For example, Folkman and Lazarus (1985) found that positive reappraisal was utilised more during the preparation stage, whereas Carver and Scheier (1994) reported no significant difference in the use of positive reframing depending on the situation.

Coping Effectiveness

A large body of research has attempted to ascertain which coping strategies are helpful and which are not. For example, in a study by DeGrauw and Norcross (1989), college students were asked to indicate their coping responses for dealing with stressful situations, and the effectiveness of these strategies. It was found that supportive relationship, wishful thinking, logical analysis, active cognitive coping, and seeking social support were the most common strategies used by college students. It was also found that active (e.g., problem solving) and interpersonal (e.g., supportive relationship) coping efforts were evaluated as more effective. Passive coping strategies, such as wishful thinking, avoidance, and self-blame, were reported as ineffective.

According to transactional theory (Lazarus & Folkman, 1984), there are no universally good or bad coping strategies. A strategy that is quite effective in a stressful situation can be ineffective in another. One of the most investigated situational contexts is controllability of the situation. For example, Forsythe and Compas (1987) examined the role of appraised controllability and coping on psychological distress. In this study, college students were asked to report how they coped with a most distressing event

and with minor daily hasslesthat they had recently experienced. In relation to major life events, it was observed that symptomatology was negatively associated with the use of problem-focused coping, whereas it was positively associated with the use of emotion-focused coping when a situation was perceived as controllable. In situations appraised as uncontrollable, decreased symptomatology was related to emotion-focused coping, while increased symptomatology was related to problem-focused coping. As a result of the study, the researchers emphasised the role of situational control appraisal in coping effectiveness. They concluded that "a specific strategy or mode of coping cannot be defined as effective or ineffective independent of the context in which it is used" (p.473).

In sum, previous studies have reported decreased symptomatology associated with the use of problem-focused coping under controllable situations (e.g., Baum, Fleming & Singer, 1983; Folkman, Lazarus, Gruen & DeLongis, 1986; Forsythe & Compas, 1987). On the other hand, it was proposed that uncontrollable situations are tolerated better by emotion-focused coping. For example, coping efforts such as distancing may be helpful when behaviour can no longer be instrumental in changing the situation (Folkman & Lazarus, 1985; Folkman et al., 1986; Forsythe & Compas, 1987).

However, recent studies have reported mixed findings. For example, Convay & Terry (1992) examined whether appraised controllability of a situation moderated the effectiveness of coping strategies. They found that problem-focused coping was evaluated as effective only in controllable situations. The negative effect of self-denigration on adaptation was more marked in controllable than in uncontollable situations. They also found that escapist strategies, a form of emotion-focused coping, had a negative effect on adaptation regardless of appraised controllability of the situation. They

did not find any positive effect of emotion-focused coping on adaptation in uncontrollable situations, or any negative effect of problem-focused coping on adaptation in uncontrollable situations.

Similarly, Masel, Terry and Grible (1996) reported that the use of escapism in situations that were perceived as having little chance for control was negatively associated with adjustment. In another study, Carver et al. (1993) found that distress was positively related to denial and disengagement in a sample of women with early stage breast cancer (low-control situation). In another study, a multidimensional scale of problem-focused coping was developed, and in support of its validity, these researchers found that problem-focused coping was significantly correlated with psychological adjustment regardless of the situational controllability (Heppner, Cook, Wright & Johnson, 1995).

Terry and Hynes (1998) claimed that there is no evidence supporting either the negative effect of problem-focused strategies, or the positive effect of emotion-focused strategies on adjustment under low situational control. Therefore, they examined the effect of problem-management, problem-appraisal, emotional-focused, and escapist strategies on psychological adjustment under a low-control situation. They found that escapist strategies were associated with poor adjustment to a low-control situation, whereas problem-appraisal strategies resulted in better adjustment.

Results of the recent studies suggest that under controllable conditions, problem-focused coping has a positive effect on psychological adjustment, whereas emotion-focused coping leads to maladjustment. When the situation is perceived as resistant to control, escapist strategies have a negative effect on adjustment. The effect of problem-focused strategies on psychological adjustment is complex under situations judged to be

uncontrollable. It appears that the effect of problem-focused strategies on adaptation is not negative, if not positive either, in low control situations.

Learned Resourcefulness and Coping

It is suggested that high resourceful individuals can cope with stress more effectively than low resourceful individuals (Rosenbaum, 1990). To examine whether high resourceful individuals change their coping strategies according to situational demands, Gintner, West, and Zarski (1989) studied the relationship between learned resourcefulness and coping strategies in two stages of an exam situation. In the study, three weeks prior to the midterm exam, 80 graduate students completed the Self-Control Schedule (CSC; Rosenbaum, 1980a). On the exam day, and then one week later prior to receiving exam results, the subjects completed the Strain Questionnaire (SQ; Lefebvre & Sandford, 1985) which measures stress symptomatology, and the Ways of Coping Checklist (Folkman & Lazarus, 1985) which measures coping strategies used by an individual. Subjects were asked to rate their coping strategies for the exam during the preparation week and then the waiting week against the coping checklist.

It was found that high resourceful subjects tended to use significantly more problem-focused coping strategies during the exam preparation week than low resourceful subjects. Conversely, low resourceful subjects reported using significantly more wishful thinking and distancing during the preparation week than did high resourceful subjects. In both the preparation and the waiting weeks, high resourceful subjects reported fewer stress symptoms than did low resourceful subjects. The results of the study suggest a link between learned resourcefulness and coping strategies.

Some studies have reported that task-oriented coping is positively associated with exam performance, whereas emotion-oriented coping is negatively related to grade (Edward & Trimble, 1992). It appears that high resourceful subjects employ more effective coping strategies than do low resourceful subjects.

In a study by Barrios (1985), it was observed that a situation-specific estimate of coping was a better predictor of pain tolerance than learned resourcefulness. In view of this finding, the researcher stated that learned resourcefulness has trait-like properties, and that situational determinants are therefore underestimated in the studies examining learned resourcefulness. In the present study, situational determinants were also included by examining high and low resourceful students' coping strategies under different exam situations.

CHAPTER 2

STUDY I

ATTRIBUTIONAL STYLE, LOCUS OF CONTROL, LEARNED
RESOURCEFULNESS AND ACADEMIC STRESS AS PREDICTORS OF
ACADEMIC PERFORMANCE

Statement of the Problem

The main purpose of Study I was to examine whether academic
attributional style, locus of control, learned resourcefulness, and academic
stress level each predict academic performance as indicated by the
student's first year grade point average (GPA). A second aim of the study
was to examine the moderating effect of learned resourcefulness on the
academic stress / academic performance relationship.

Research Hypotheses

The following hypotheses were tested :

1. Academic attributional style will predict academic performance. Optimistic
(academic) attributional style will be positively related to academic
performance.

This prediction was based on the Learned Helplessness Theory suggesting a relationship between attributional style and performance. Specifically, the relationship between attributional style and academic performance was supported by several studies (e.g., Peterson, 1990; Peterson & Barrett,1987; Schulman, 1995). However, some studies (e.g., Follette & Jacobson, 1987; Tiggeman & Crowley, 1993; Schulman, 1995) did not find a significant relationship between attributional style and academic performance. Additional research is therefore needed.

In contrast to learned helplessness theory, which suggests that internal, stable and global attributions for failure result in helplessness deficits, Weiner (1994) suggests that effort (internal and unstable) attributions for failure elicit feelings of guilt, thereby increasing motivations and leading to performance increments. Intervention studies based on attribution theory have also found that effort attributions (internal) for failure promoted performance increments (e.g., Dweck, 1975; Fowler & Peterson, 1981; Noel, Forsty & Kelley,1987). It appears that there is no consensus on the relationship between academic performance and the internality dimension of the causal attributions. In the present study, the relationship between academic attributional style and academic performance, as well as the relationship between each of the dimensions of academic attributional style (internality, stability, and globality) and academic performance were tested.

2. Locus of control will predict academic performance.

  2a. High internality will be related to high academic performance.

  2b. High chance-orientation will be related to low academic performance.

2c. Powerful others-orientation will not be related to academic performance.

Previous researchers have been criticised because they have not considered the controllability dimension when examining the relationship between attributional style and performance. For example, Fosterling (1985) noted that luck attributions for failure may not lead to performance increments, because luck is an uncontrollable factor. Thus this study included locus of control orientation to examine the effect of controllability as well as academic attributional style. Due to academic attributional style being variable, which is a personality disposition, it was not possible to measure situation-specific controllability. Therefore, individuals' generalised control beliefs (internality, chance-orientation and powerful others-orientation) were used as the measure of controllability.

These predictions were based on previous studies suggesting a positive relationship between internality and academic performance, and a negative relationship between externality and academic performance (e.g., Nord, Connelly & Daignault, 1974; Perry & Penner, 1990; Prociuk & Breen, 1975; Waugh & Herbert, 1993). Levenson (1980) proposed a dichotomy of externals as chance-oriented externals and powerful others-oriented externals. For example, Prociuk and Breen (1975), using this dichotomy, found a significant difference between two groups of externals in terms of academic performance. Therefore, in the present study, three different locus of control orientations were measured to find possible differences between two kinds of externality orientation.

3. High resourcefulness will be positively related to academic performance.

Rosenbaum's Learned Resourcefulness Theory suggests that high resourceful individuals can minimise the adverse effect of negative events

on their performance by using their self-control skills. In contrast, low resourceful individuals may not control the detrimental effect of negative events on their performance and tend to give up. Previous investigations (e.g., Rosenbaum & Ben-Ari, 1985; Rosenbaum & Jaffe, 1983) have supported this prediction, indicating a significant effect of learned resourcefulness on task performance in the face of stressful situations.

The academic environment can be considered stressful because students experience a high level of chronic stress due to workload, time pressure, exams, assignments and uncertainty. However, little work has been done examining the relationship between learned resourcefulness and academic performance. In the present study, based on the Learned Resourcefulness Theory and the results of previous studies, it was expected that high resourceful students would use their self-control skills and minimise the adverse effect of academic stress on their academic performance. Therefore, high resourceful students would have a better GPA than low resourceful students. In this case it was assumed that all students experience similar levels of academic stress.

4. a) High academic stress will be related to low academic performance.

This prediction was based on previous research which indicated a detrimental effect of various kinds of stress on academic performance (e.g., Clark & Rieker, 1986; Felsten & Wilcox, 1992; Linn & Zeppa, 1984; Lloyd & Gartrell, 1983; Rajendran & Kaliappan,1990; Roberts & Monroe, 1992). In the present study, academic stress was included to examine the interaction between academic stress and learned resourcefulness on academic performance, as well as the main effect of academic stress.

4. b) The negative effect of academic stress on academic performance will be moderated by learned resourcefulness. Under a high level of

academic stress, high resourceful students will have a better GPA than their low resourceful counterparts.

This hypothesis was based on Rosenbaum's learned resourcefulness theory suggesting that stress has a detrimental effect on performance, and that this adverse effect is moderated by the individual's repertoire of self-control skills. Specifically, high resourceful individuals perform better in high stress conditions than low resourceful individuals.

Assumptions

It was assumed that:

1. All participants were able to understand and respond accurately to the questionnaires used in this study.

2. There were no significant personality differences between the students who participated in the study and those who did not.

3. Within the confines and limitations of obtaining self-report data, all questionnaires were answered honestly and accurately.

Limitations of the Study

1. The voluntary nature of the study may have resulted in a biased sample. It is possible, for example, that subjects who expected poor grade point averages may have elected not to participate.

2. Grade point average may not be the only indicator of academic performance.

3. Some of the subjects completed the questionnaires in an empty room at the university, whereas others took them home to complete them.

Significance of the Study

1. Studies of the relationship of explanatory style to academic performance in the literature did not take into account the locus of control construct. However, loss of control over events is a risk factor for helplessness deficits such as passivity. In this study, locus of control belief was assessed.

2. Learned resourcefulness is a relatively new concept. To my knowledge, the relationship between learned resourcefulness and academic performance was examined for the first time in this study.

3. The set of psychological variables which have been related to academic performance were considered for the first time among students who are studying in Australia.

METHOD

Participants

Three hundred and sixty-five questionnaires were distributed to first-year undergraduate students from the University of Wollongong, New South Wales, Australia. Of these, 168 were returned (49%), and 27 questionnaires

were not used in the study due to incorrect responses or missing data, resulting in a sample of 141 participants (aged 18 to 55 years). Forty-five male (aged 18 to 55) and 96 female students (aged18 to 55) volunteered for the study. All participants were informed that any information they provided would remain confidential and would be used only for the purposes of this research.

Materials

Four inventories were used to obtain the data. The Academic Attributional Style Questionnaire (AASQ), developed by Peterson and Barrett (1987), was used to assess students' academic explanatory style based on the internality, stability, and globality dimensions. The questionnaire consists of 12 negative hypothetical academic events in which participants are asked to imagine themselves in particular situations (e.g., "You fail a final examination", "You cannot find a book in the library"), and then to provide the perceived primary cause for each of these negative events, rated on a seven-point Likert scale (see Appendix C). Peterson and Barrett (1987) reported significant internal reliability for the AASQ (Cronbach's Alpha, r = .84). Tiggeman and Crowley (1993) reported that the reliabilities for the internality, stability, and globality subscales of the AASQ are .57, .80, and .78 respectively.

A 24-item multidimensional locus of control questionnaire, the IPC Scales (Levenson, 1985), was used to determine the extent to which subjects believe they are influenced by powerful others (e.g., "In order to have my plans work, I must make sure that they fit in with the desires of people who have power over me"), chance (e.g.," Whether or not I get into a car accident is mostly a matter of luck"), or internal factors (e.g., "I can pretty

much determine what will happen in my life"). This Likert-type scale includes eight items on each of the three scales, ranging from strongly disagree (-3) to strongly agree (+3). The IPC Scales are presented in Appendix D. Levenson (1974) reported that the Kuder-Richardson reliabilities for the internal, powerful others, and chance scales are .64, .77, and .78 respectively.

The learned resourcefulness of the subjects was assessed by Rosenbaum's Self-Control Schedule (SCS, Rosenbaum, 1980). This 36-item self-report questionnaire assesses individuals' general repertoire of self-control behaviour and their tendencies to use these behaviours when faced with everyday problems. The Rosenbaum Self-Control Schedule includes the following aspects: (a) the use of self-statements to control emotional responses (e.g., "When I am feeling depressed, I try to think about pleasant events"); (b) the application of problem-solving strategies (e.g., "When I am faced with a difficult problem, I try to approach it in a systematic way"); (c) the ability to delay immediate gratification (e.g., "I tend to postpone unpleasant tasks even if I could perform them immediately"); and (d) perceived self-efficacy (e.g.," I need outside help to get rid of some of my bad habits"). The Self-Control Schedule is shown in Appendix E. Rosenbaum (1980) reported significant psychometric properties of the SCS; test-retest reliability was .86 and alpha coefficients ranged from .78 to .86.

The level of academic stress experienced by participants in this investigation was measured by the Undergraduate Stress Questionnaire (USQ, Crandall, Preisler & Aussprung, 1992). The questionnaire consists of 83 minor and major stressful life events. In the present study, 20 items related to academic events were used as the measure of academic stress. Examples of the academic items are "working while in school", "assignments in all classes due the same day", and "did badly on a test". Participants

indicate which events they experienced during the previous one-week period. For the purposes of the present study, the preceding time period was modified as an academic year. Therefore, students were asked "Has this stressful event happened to you at any time during this academic year? If it has, how stressful was it?" (see Appendix F). Crandall et al. reported an internal consistency (Kuder-Richardson), split-half reliability, and Spearman-Brown estimated the reliabilities for the USQ as .80, .71, and .83 respectively.

Crandall et al. (1992) reported a very high correlation between subjective scaling and objective scaling of the USQ, and advised using objective scaling due to its simplicity rather than subjective scaling. They also stated that subjective scaling is correlated with personality variables related to negative affectivity, therefore subjective measures of stress are contaminated by negative affectivity. However, Lazarus (1991) pointed out that objective ratings of life event stress do not take account of individual differences. Thus, in the present study, subjective scaling was preferred.

The reliabilities of all the measures for the present study sample are presented in Table 1. As shown in this table, the reliabilities were satisfactory for academic attributional style, learned resourcefulness, and academic stress, ranging from .70 to .96. However, the locus of control measures were only moderately reliable.

Procedure

The undergraduate students were invited to participate in the research through class announcements, departmental noticeboards and individual contact. The participants were asked to complete four questionnaires, and

the students' first-year grade point averages (GPA) at the end of the 1996 academic year were obtained from the University's student records office with the students' explicit permission.

All the participants signed an informed consent form (see Appendix A) prior to completing the questionnaires, indicating their willingness to participate in the study. They were also informed that they could withdraw from the research project at any time without penalty.

Table 1

Reliabilities of Measures

Scale	Cronbach Alpha
Academic Attributional Style	
Composite Negative	.86
Internal	.70
Stable	.84
Global	.81
Locus of Control Scales	
Internal Locus of Control	.56
Chance Locus of Control	.66
Powerful Others Locus of Control	.65
Learned Resourcefulness	.83
Academic Stress	.86

Note. N=141

RESULTS

As reported in the first chapter, the present study was designed to examine the predictability of academic performance from personal disposition and academic stress. To achieve this aim, a multiple regression analysis was carried out, in which gender, academic attributional style, locus of control, learned resourcefulness, and academic stress were used as predictor variables. The dependent variable was students' academic performance, which was measured by the students' first-year grade point averages. Means and standard deviations of these measures are presented in Table 2.

To examine the relationship between personal disposition, academic stress and academic performance, a Pearson Correlation Coefficient Matrix was calculated. Finally, to examine the interaction of learned resourcefulness and academic stress on academic performance, a multiple regression was used.

Table 2

Means and Standard Deviations of Academic Performance, Personal
Disposition, and Academic Stress

Variable	Mean	SD
GPA	64.61	11.19
Gender	1.68	.47
Composite Negative	12.80	2.03
Internal	4.62	.82
Stable	4.12	.95
Global	3.86	.98
Internal Locus of Control	33.45	6.50
Chance Locus of Control	20.46	7.74
Powerful Others Locus of Control	19.15	7.64
Learned Resourcefulness	20.90	24.52
Academic Stress	44.94	14.47

Note. N=141

Sex Differences on Personal Disposition, Stress, and Academic
Performance.

The sample did not consist of an equal number of male and female
students. To compare male and female students on their academic
attributional style, locus of control (internal, chance, and powerful others),
learned resourcefulness, stress level and academic performance, seven
different unpaired t-tests were conducted. To control for type I error, a
Bonferroni adjustment was used. This raised alpha level .007 (2.69). Table 3
presents the results of t-tests. No significant differences were observed
between male and female students in academic attributional style, internal
locus of control, chance-orientation and learned resourcefulness. Similarly,
no significant differences were observed between males and females in
academic stress level. Hence, male and female students experienced similar
levels of academic stress.

Significant differences, however, were found between male and
female students in GPA, t(139)= -4.21, p<.007. The means and standard
deviations for males and females were, respectively, 58.60 (12.55) and
67.43 (9.28). These findings indicated that female students were more
successful than males.

Another significant difference was found between male and female
students on their powerful others-orientation t(139)=2.76 p<.007. Hence,
male students were more likely to believe that powerful people could
influence life events than the female students. The means and standard
deviations for males and females were 21.69 (7.56) and 17.96 (7.43)
respectively.

Table 3

Summary Statistics of Sex Differences in Academic Performance, Personal Dispositions and Academic Stress

Variable	Males		Females		t value
	M	SD	M	SD	
Academic attributional style	13.23	2.10	12.61	1.97	1.70
Internal locus of control	34.53	6.41	32.94	6.50	1.36
Chance locus of control	22.36	7.60	19.57	7.67	2.01
Pow. others locus of control	21.69	7.56	17.96	7.43	2.76*
Learned Resourcefulness	19.82	20.5	21.40	26.3	-.36
Academic Stress	46.47	14.19	44.22	14.62	.86
GPA	58.60	12.55	67.43	9.28	-4.21*

Note. N = 45 for males and N = 96 for females

* p< .007

The relationship between Personal Dispositions, Academic Stress, and Academic Performance

A Pearson-product correlation coefficient was calculated to determine the relationship between personal dispositions, academic stress, and academic performance (see Table 4).

A significant negative correlation between GPA and academic stress demonstrated that academic stress was negatively associated with GPA. A significant, but weak, negative relationship between academic attributional style and GPA suggested that internal, stable, and global attributions for negative academic events were associated with low GPA. The globality dimension of academic attributional style was negatively correlated with GPA. The internality and stability dimensions, however, were not related to academic performance. A significant inverse correlation was found between GPA and chance-locus of control. While this relationship was low, a high level of chance-orientation was related to low academic performance.

As shown in Table 4, there were several significant correlations between types of personal disposition. Learned resourcefulness was significantly and negatively correlated with academic attributional style. Thus, high resourcefulness related to optimistic attributional style (low scores on attributional style questionnaire), and low resourcefulness related to pessimistic attributional style (high scores on attributional style questionnaire). Learned resourcefulness was significantly correlated with the stability and globality dimensions of academic attributional style.

Learned resourcefulness was also negatively correlated with chance-locus of control and powerful others-locus of control, indicating that high chance and powerful others-orientation related to low resourcefulness. On the other hand, a significant positive correlation was found between learned

resourcefulness and internal locus of control. Taken together, these results indicate that learned resourcefulness is related to personal dispositions, albeit moderately.

As reported earlier, preliminary analysis of the present data indicated that female students were more successful academically than males. Therefore, to control the possible confounding effects of gender on the relationship between personal disposition, academic stress, and GPA, partial correlation coefficients were calculated in which gender was controlled statistically. Table 5 provides partial correlations between GPA, personal dispositions, and academic stress. When gender was partialled out, academic stress was still significantly correlated with GPA. The correlation between the globality dimension of academic attributional style and academic performance decreased from -.27 ($\underline{p}$<.01) to -.21 ($\underline{p}$<.05). Partial correlations between GPA, academic attributional style, and chance-orientation were not significant.

In summary, the results of the partial correlations indicated that academic stress and the globality dimension were negatively related to academic performance, whereas personal dispositions (academic attributional style, locus of control and learned resourcefulness) were not related to academic performance.

Table 4

Multiple Correlations Between Variables.

Variables	GPA	Composite Negative	Internal	Stable	Global	Internal	Chance LOC	Pow. others LOC	LR
Composite Negative	-.19*								
Internal	-.03	.56**							
Stable	-.10	.83**	.20*						
Global	-.27**	.81**	.13	.58**					
Internal Locus of Control	.06	-.04	.01	.00	-.08				
Chance Locus of Control	-.20*	.23**	-.06	.26**	.27**	-.02			
Pow. Others Locus of Control	-.05	.15*	-.11	.19*	.21	.11	.39**		
Learned Resourcefulness	.10	-.29**	.14	-.35**	-.38**	.20*	-.32**	-.29**	
Academic Stress	-.28**	.14	-.07	.11	.24**	-.01	.12	.22**	-.14

*p<.05 **p<.01

Table 5

Partial Corelation Coefficients Controling for Gender.

Variables	GPA	Composite Negative	Internal	Stable	Global	Internal	Chance LOC	Pow. others LOC	LR
Composite Negative	-.15								
Internal	-.06	.58**							
Stable	-.06	.82**	.21*						
Global	-.21*	.80**	.15	.57**					
Internal Locus of Control	.11	-.05	.02	-.01	-.11				
Chance Locus of Control	-.16	.21*	-.05	.25**	.25**	-.04			
Pow. Others Locus of Control	.04	.12	-.10	.17*	.17*	.09	.36**		
Learned Resourcefulness	.10	-.29**	.14	-.35**	-.39**	.21*	-.32**	-.30**	
Academic Stress	-.28**	.13	-.07	.10	.24**	-.01	.11	.21**	-.14

*p<.05   **p<.01

Regression of Personal Dispositions and Academic Stress on Academic
Performance

To examine whether personal dispositions, which included academic attributional style, locus of control, learned resourcefulness, and academic stress, predicted academic performance, a multiple regression analysis was performed between GPA (grade point average) as the dependent variable, and gender, academic attributional style, locus of control, learned resourcefulness and academic stress as predictor variables. Table 6 displays the unstandardised coefficients (B), intercept, the standardised coefficients (Beta), R, and adjusted R results of the multiple regression.

Academic stress, personal dispositions and gender jointly predicted 25% of the variance in GPA, which is statistically significant $F(7,133) = 6.33$, $p< .001$. However, an examination of the T values indicated that only academic stress and gender were significant. Specifically, female students demonstrated significantly higher academic performance than male students did (T=4.55, p<.001). GPA was also predicted by academic stress level (T= -3.34, $p< .001$). The negative beta coefficient of academic stress indicates that a high level of stress was associated with low GPA. As shown in Table 6, academic attributional style, locus of control, and learned resourcefulness did not contribute markedly towards the variance.

Table 6

Standard Multiple Regression Analysis for Personal Dispositions and
Academic Stress Predicting Academic Performance

Variables	B	Beta	T
CN	-.48	-.09	-1.08
Internal Locus	.12	.07	.91
Chance Locus	-.21	-.15	-1.72
Pow. others Locus	.23	.15	1.79
L. Resourcefulness	.00	.01	.16
Academic Stress	-.200	-.26	-3.34**
Gender	8.54	.36	4.55**
Intercept	61.09		6.74

R = .50

R Square = .25

Adjusted R Square = .21

Note. N=141

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

The first regression analysis indicated that academic attributional style
did not predict academic performance. To examine whether the dimensions
of academic attributional style predict academic performance, another
regression analysis was performed between GPA as the dependent variable,
and gender, academic stress, locus of control orientations, and the
internality, stability, and globality dimensions of academic attributional style

as independent variables. The entire model that fit the data was statistically significant $F(9,131) = 5.18$, $p<.001$. All predictor variables accounted for 23% of the variance for GPA. An examination of the T values, however, indicated that internality ($T= -.75$, $p>.05$), stability ($T=.91$, $p>.05$), and globality ($T=-1.59$, $p>.05$) did not contribute significantly to the variance in GPA. In sum, the results of regression analyses revealed that neither academic attributional style nor its dimensions significantly predicted academic performance.

To examine the interaction effect of academic attributional style and locus of control orientations, the scores were converted to z scores and a multiple regression analysis was performed. The independent variables were academic attributional style, three locus of control orientations (internal, powerful others, and chance), academic stress, and gender. The model included main effects and two-way interactions of academic attributional style and internal locus of control $F(1,130)=.027$, $p>.05$, academic attributional style and chance locus of control $F(1,130)=2.89$, $p>.05$, and academic attributional style and powerful others-orientation $F(1,130)=2.88$, $p>.05$. Univariety F tests indicated that none of the interaction effect between academic attributional style and locus of control orientation was significant.

To examine the effect of learned resourcefulness and academic stress on academic performance, a multiple regression analysis was performed. The independent variables were learned resourcefulness, academic stress and gender, and the dependent variable was academic performance. The scores were transformed to z scores (Aiken & West, 1996). Gender was coded as -1 (for males) and 1 (for females). All main effects and two-way interactions were included in the model. Three-way interaction was not significant $F(1,133)=1.99$, $p>.05$, and it was removed

from the model. The results of $\underline{F}$ tests indicated that the interaction between learned resourcefulness and academic stress on academic performance was significant $\underline{F}(1,134)=4.31$, $\underline{p}<.05$.

Following the method used by Cohen and Cohen (1983), this significant interaction was plotted by showing the regression lines of high and low resourceful students. Values of learned resourcefulness were chosen to be one standard deviation above the mean of the total sample (high resourceful) and one standard deviation below the mean (low resourceful). This interaction is illustrated in figure 1.

In order to clarify the nature of this interaction, a simple slope analysis was used (Aiken & West, 1996). In this analysis, the simple effect of academic stress on academic performance at levels of learned resourcefulness was tested. Two levels of learned resourcefulness: high (one standard deviation above the mean) and low (one standard deviation below the mean) were chosen to be tested. The regressions of academic stress on academic performance of high resourceful and low resourceful students were computed (see figure 1).

The univariate $\underline{F}$ test indicated that the effect of academic stress on GPA for low resourceful students was significant $\underline{F}(1, 134)=17$, $\underline{B}= -4.95$, $\underline{p}<.01$, whereas this effect was not significant for high resourceful students $\underline{F}(1,134)=1.06$, $\underline{B}=1.35$, $\underline{p}>.05$. The results of the $\underline{t}$-test indicated that academic stress had a significant negative effect on the academic performance of low resourceful students. The simple effect of academic stress on the academic performance of high resourceful students was not significant. In sum, the results of statistical analyses suggested that the effect of academic stress on academic performance was moderated by learned resourcefulness. A high level of academic stress was associated

with a low GPA in low resourceful students, but not in high resourceful students.

The interaction of learned resourcefulness by gender was also significant $F(1,134)=5.26$, $p<.05$. To analyse this interaction between a categorical variable and a continuous variable, two new dummy variables were created; in the first dummy variable (01) female was the comparison group, while in the second dummy variable (10) male was the comparison group. The regression of learned resourcefulness on academic performance at gender level (male and female) was performed. The results of the t-test showed that learned resourcefulness had a significant positive effect on male students' academic performance ($B=4.53$, $t=2.56$, $p<.05$), whereas this effect was not significant for female students ($B=-.15$, $t=-.15$ $p>.05$). The interaction of learned resourcefulness by gender is shown in figure 2. High resourceful male students had higher GPAs than their low resourceful counterparts, whereas high and low resourceful female students did not differ in their academic performance.
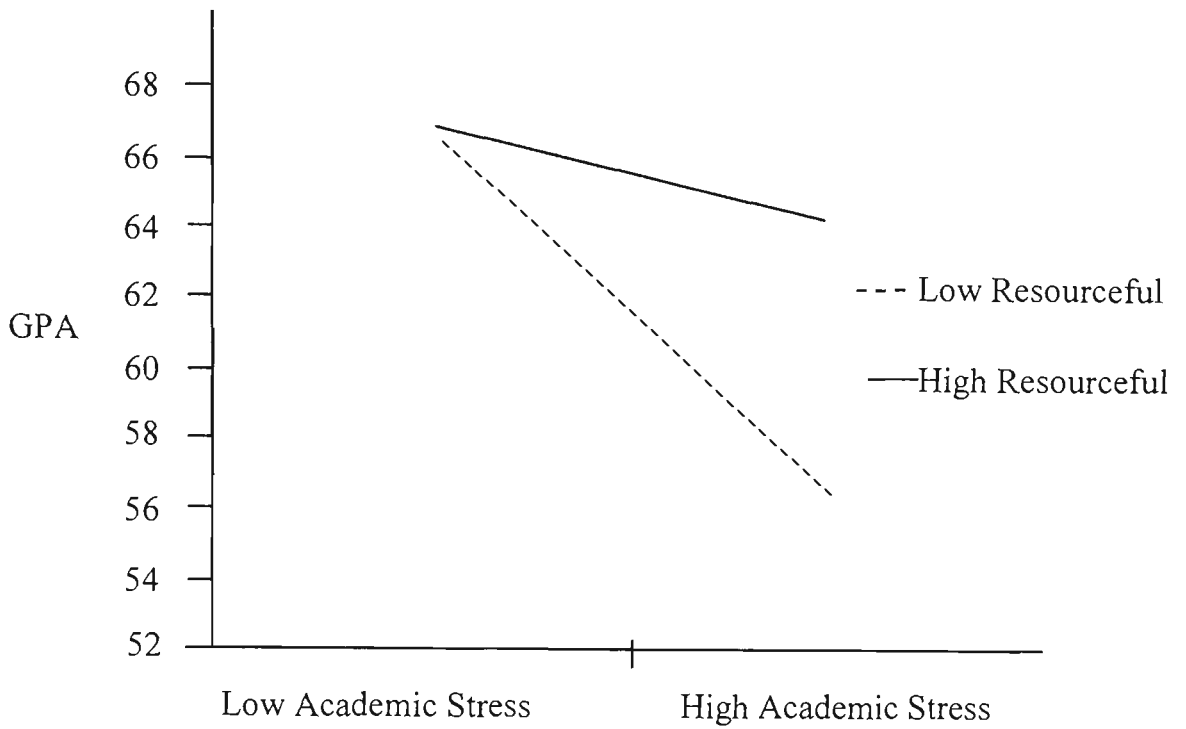
Figure 1. Academic performance (GPA) as a function of academic stress and learned resourcefulness.
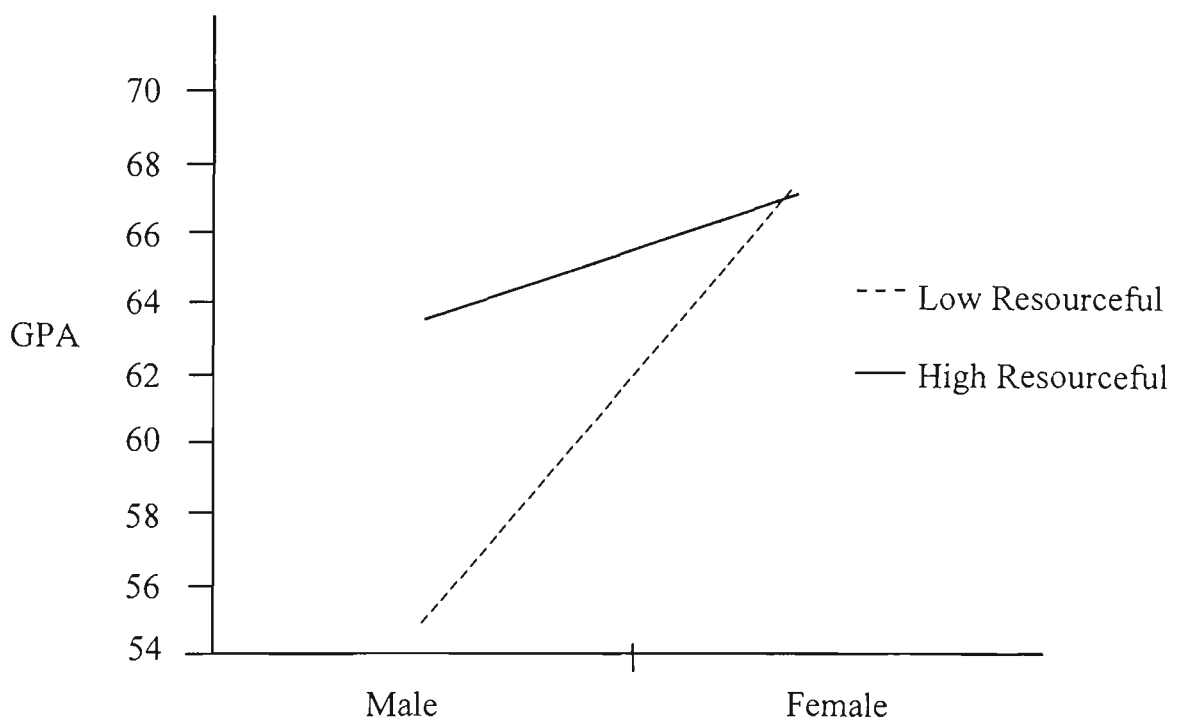
Figure 2. Academic performance (GPA) as a function of learned resourcefulness and gender.

DISCUSSION

The purpose of study 1 was to examine whether academic attributional style, locus of control, learned resourcefulness, and level of academic stress each predict academic performance of undergraduate university students. Another aim of the study was to examine the role of learned resourcefulness in the academic stress / academic performance relationship.

Several hypotheses were generated in which academic performance was predicted as a function of personal dispositions and academic stress. Generally, it was hypothesised that academic attributional style, locus of control beliefs, learned resourcefulness, and the level of academic stress would predict academic performance. It was also predicted that the effect of academic stress on academic performance would be moderated by learned resourcefulness. A number of hypotheses were supported by the analyses.

Academic Attributional Style and Academic Performance

It was hypothesised that academic attributional style would predict academic performance. The results of the present study did not confirm this hypothesis. It was found that academic attributional style did not make a significant contribution in terms of explained variance to the prediction of academic performance. Specifically, neither academic attributional style nor the dimensions of academic attributional style significantly predict academic performance. These results contradict other studies in which a significant

relationship was found between academic attributional style and academic performance (Peterson & Barrett, 1980; Seligman, cited by Peterson, 1990; Schulman et al., cited by Schulman, 1995). On the other hand, this finding supports the results of a study by Schulman et al. (cited by Schulman, 1995), who found no significant correlation between attributional style and academic performance in first-year college students. Similarly, these results are consistent with Tiggeman and Crowley's (1993) findings that academic attributional style was not related to academic performance in college students studying in Australia. Also, it was found that the dimensions of academic attributional style (internality, stability and globality) did not predict academic performance.

Locus of Control and Academic Performance

Several hypotheses in this study focused on predicting academic performance from various components of locus of control. For example, high internality would be related to high academic performance, high chance-orientation would be related to low academic performance, and powerful others-orientation would not be related to academic performance. Contrary to these hypotheses, none of the locus of control beliefs significantly contributed to predicting academic performance.

These findings contradict the findings from previous research (e.g., Nord, Connelly & Daignault, 1974; Perry & Penner, 1990; Prociuk & Breen, 1975; Waugh & Herbert, 1993), in which internal locus of control related to high academic performance and external locus of control related to low academic performance.

One possible reason for discord between the results of the present study and those of the previous studies might be the use of different locus of control scales. Most researchers in previous studies (e.g., Nord, Connelly & Daignault, 1974; Perry & Penner, 1990; Prociuk & Breen, 1975; Waugh & Herbert, 1993), when investigating the relationship between locus of control and academic performance, used Rotter's Locus of Control Scale. However, in the present study, Levenson's IPC scales were used. Rotter considered locus of control as a unidimensional construct, whereas Levenson suggested a multidimensional locus of control. Therefore, in previous studies using Rotter's Locus of Control Scale, participants were divided into internals and externals, depending on their scores in Rotter's Locus of Control Scale. However, in the present study, following Levenson's multidimensional locus of control structure, students' orientations on three different scales were used.

This finding is also contrary to Prociuk and Breen (1975), who found that internals had better GPAs than both chance-oriented and powerful-others oriented externals. They also found that powerful others-oriented externals were more successful than chance-oriented externals, using Levenson's IPC Scales. In the present study the same locus of control scale was used. The reliabilities of the IPC subscales for the present research sample might be responsible for this inconsistency between Prociuk and Breen's study and the present study. As reported in the method section, the powerful others and chance subscales were moderately reliable, and the internality subscale had a low reliability for the research sample.

Learned Resourcefulness and Academic Performance

Research results in the learned resourcefulness literature suggest that this is related to performance in the face of stressful situations. For example, after being exposed to an inescapable noise condition or repeated failures, high resourceful subjects exhibited more successful performance in the anagram task than low resourceful subjects did (Rosenbaum & Ben-Ari, 1985; Rosenbaum & Jaffe, 1983).

One likely explanation for these results, according to Rosenbaum (1990), is that high resourceful individuals can minimise the detrimental effects of negative events on their performance by using their self-control skills. In contrast, low resourceful individuals may not be able to control the detrimental effect of negative events on their performance, and tend to give up. Assuming that the academic environment is highly stressful, it was anticipated that learned resourcefulness would predict academic performance. The results of the multiple regression did not support this prediction. However, a significant gender-learned resourcefulness interaction was found. High resourceful male students were academically superior to low resourceful male students. This effect was not observed for female students.

Stress and Academic Performance

It was hypothesised that academic stress would predict academic performance. Results provided support for this hypothesis by revealing that the level of academic stress made a significant contribution as a predictor of students' academic performance. The negative beta coefficient of stress indicated a negative relationship between stress and academic performance,

in which high stress was related to low academic performance. This result is consistent with research undertaken by Felsten and Wilcox (1992), who found a negative correlation between the stress levels of college students and their academic performance. Results of the present study are also consistent with Blumberg and Flaherty's (1985) findings, which suggested an inverse relationship between academic performance and self-reported stress level. Linn and Zeppa (1984) also reported a significant negative correlation between life stress and exam performance in third-year medical students.

However, the results of the present study are not consistent with Rospenda, Halpert, and Richman (1994), who found that the role stress did not correlate significantly with academic performance. One possible reason for these conflicting results might be the examination of different types of stress. Rospenda, Halpert, and Richman used role stress, whereas in the present study, the effect of academic stress was examined. Using different measures of academic performance and different samples might also be responsible for the inconsistency between the two studies. For example, in Rospenda et al.'s study, academic performance was measured by the clerkship grades of third-year medical students, whereas in the present study, academic performance was measured by first-year grade point average.

Academic Performance as a Function of Academic Stress and Learned Resourcefulness

Based on learned resourcefulness theory (Rosenbaum, 1990), it was predicted that the adverse effect of academic stress on academic performance would be moderated by learned resourcefulness. The results of the present study supported this hypothesis, indicating a significant negative

effect of academic stress on the performance of low resourceful students, but not on the performance of high resourceful students. These results are also consistent with learned resourcefulness theory, which proposes that high resourceful individuals can control and minimise the negative effects of stressful events by using their behavioural and cognitive skills.

The relationship Between Academic Attributional Style, Locus of Control, and Learned Resourcefulness

The results of the present study indicated that high resourcefulness related to optimistic attributional style and low resourcefulness related to pessimistic attributional style. This finding confirms Rosenbaum's (1990) suggestion that learned resourcefulness influences the individual's attributions. In an experimental study, Rosenbaum and Ben-Ari (1985) found that high resourceful subjects were more likely to attribute successful outcomes to their own efforts than low resourceful subjects.

The results of the present study indicated that learned resourcefulness negatively related to chance-locus of control and powerful others-locus of control, whereas it related positively to internal locus of control. These findings suggest that high resourceful individuals are less likely to believe that their lives are under the control of powerful others or controlled by chance than low resourceful individuals. High resourceful subjects are also more likely to believe that their lives are under their own control. Similarly, Rosenbaum (1980) reported that learned resourcefulness is positively correlated with internality and negatively correlated with externality.

CHAPTER 3

STUDY II

THE EFFECT OF SITUATION AND LEARNED RESOURCEFULNESS ON PERCEIVED STRESS, CONFIDENCE AND COPING

Statement of the Problem

The results of study I indicated that a high level of academic stress was related to low academic performance. However, the negative effect of academic stress on academic performance was moderated by learned resourcefulness. Specifically, low resourceful students with a high level of academic stress had a lower GPA compared to their low stress counterparts. High resourceful students, however, did not significantly differ in their academic performance depending on their academic stress level. This finding has raised a number of questions; 1) Are there significant differences between high and low resourceful students' perceived stress levels? 2) Are there significant differences between high and low resourceful students' confidence in their ability to cope with stress (self-efficacy expectancy)? 3) Are there significant differences between high and low resourceful students' coping strategies? Study II was designed to address these questions.

The purpose of study II was to examine the effects of situation and learned resourcefulness on perceived stress, and to examine the students' confidence in their ability to cope with these academic events (self-efficacy expectancy). Another objective of this study was to examine the effects of situation and learned resourcefulness on students' coping strategies.

Research Hypotheses

The following hypotheses were tested :

1. Situational determinants will have a significant effect on students' coping strategies.

This hypothesis was based on transactional theory, which suggests that coping is affected by situational factors as well as personal factors. Lazarus and Folkman (1985) found that students tended to reduce their use of problem-focused coping, seeking social support, emphasising the positive, and self-isolation, and to increase distancing between an exam preparation week and the waiting week. Distancing and wishful thinking were used more during the waiting week than after the results were announced. Lazarus and Folkman did not compare the preparation stage with the outcome stage. In the present study, the situation of having an exam (preparation stage) was compared with the situation of having an unsatisfactory exam result (outcome stage).

In their study Folkman and Lazarus (1985) also found that the students' ways of coping in the outcome stage were affected by their exam grades. The students who had a lower exam grade used more wishful thinking, seeking social support, self-blame, tension reduction and self-isolation than the students with a higher exam grade. When the grades were

different, the situational demands were also different, so the outcome stage had different meanings for the students depending on their exam grades. For example, a student who had a satisfactory exam result may evaluate the outcome stage as not being stressful, while failed students may perceive the situation as highly stressful. In the present study, students' exam results were stabilised by asking the students to report their coping behaviours when they had an unsatisfactory exam result. Thus, only the effect of negative outcome on the students' ways of coping was examined, rather than the mixed effect of negative and positive outcomes.

2. Learned resourcefulness will have a significant effect on students' confidence in their ability to cope with stress (self-efficacy expectancy). High resourceful students will feel more confident than low resourceful students.

According to learned resourcefulness theory, high resourceful individuals have a high level of perceived self-efficacy. For example, high resourceful individuals tend to believe they can get rid of bad habits without outside help. Empirical studies have found a significant positive relationship between learned resourcefulness and self-efficacy expectancy when subjects have had previous experience with the stressful task (Rosenbaum & Ben-Ari Simira, 1986), but not when the situation is novel (Weisenberg, Wolf, Mittwoch & Miculicer, 1990, cited by Rosenbaum, 1990). Examination situations are very familiar to student populations. Thus, it was expected that high resourceful students would feel more confident in their ability to cope with these stressful events (self-efficacy).

Exploratory Hypotheses

Due to the lack of research on learned resourcefulness and coping, a number of exploratory hypotheses was established.

1. Are there significant differences between high and low resourceful students' perceived stress level?

Rosenbaum (1990) has proposed that learned resourcefulness does not influence individuals' perceptions of the stressfulness of a situation. In the present study, this premise will be examined.

2. Are there significant differences between high and low resourceful students' coping strategies?

To my knowledge, there is only one study (Gintner, West, & Zarski, 1989) that examines high and low resourceful students' coping responses. The results of Gintner et al.'s (1989) study indicated that low resourceful students reported more wishful thinking than high resourceful students during both the preparation and waiting periods.

3. Are there significant differences between high and low resourceful students' coping strategies depending on the situation?

Gintner, West, and Zarski (1989) found a number of significant interactions. High resourceful students used more problem-focused coping strategies than their low resourceful counterparts during an exam preparation week, but not during the waiting week. On the other hand, low resourceful students used more self-blame when they were waiting for the results of the examination. Ginter et al. compared the preparation stage with the waiting stage. In the present study, however, the preparation stage was compared with the outcome stage.

METHOD

Participants

Four hundred and twenty-two questionnaires were distributed to undergraduate students from the University of Wollongong, New South Wales, Australia. Of these, 274 were returned (65%), and 19 questionnaires were not used in the study due to incorrect responses or missing data, resulting in a sample of 255 participants (aged 18 to 45 years, $\underline{M}$=20). Ninety-seven male (aged 18 to 45, $\underline{M}$=20) and 158 female students (aged 18 to 38, $\underline{M}$=20) volunteered for the study. All participants were informed that any information they provided would remain confidential and would be used only for the purposes of this research.

Materials

To manipulate the exam situation, two different scenarios, each describing a stressful situation, were used. One of these presented a controllable outcome ("Imagine that you have an exam in one week's time"), and the other contained an uncontrollable outcome ("Imagine that you have just learnt that your recent exam result is unsatisfactory for you"). Students who had volunteered were assigned at random to one of these two situations.

Depending on their assigned conditions, students were asked to imagine themselves in one of these stressful academic situations. The stressfulness of the academic event was measured by two questions (e.g., "I perceive this situation as stressful"). Responses consisted of a Likert Scale ranging from 1 ("not at all") to 5 ("extremely"). Students' confidence in their ability to cope with these stressful academic events (self-efficacy) was assessed by another two questions (e.g., "I can overcome this stressful situation") based on a Likert Scale ranging from 1 ("not at all") to 5 ("extremely"). Reverse scoring was used for one of these confidence questions (see Appendix I and K).

The revised Ways of Coping Questionnaire (WCQ; Folkman & Lazarus, 1988) was used to determine the students' ways of coping under these specific conditions of having an exam or having an unsatisfactory exam result. This Questionnaire contains 50 items describing cognitive and behavioural strategies that are used to deal with stressful situations. Participants are required to rate the extent to which they use each coping item in the face of a particular stressful event on a 4-point Likert scale (0=not used , 3=used a great deal). In the present study, the students were asked to rate their use of coping strategies when they have an exam or have an unsatisfactory exam result (see Appendix J and L).

Factor analysis of the WCQ items has yielded eight coping strategies: confrontive coping (e.g., "Stood my ground and fought for what I wanted"), distancing (e.g., "Tried to forget the whole thing"), self-control (e.g., "I tried to keep my feelings to myself"), seeking social support (e.g., "Talked to someone to find out more about the situation"), accepting responsibility (e.g., "Criticised or lectured myself"), escape-avoidance (e.g., "Hoped a miracle would happen"), planful problem solving (e.g., "I knew what had to be done, so I doubled my efforts to make things work"), and positive reappraisal (e.g.,

"Changed or grew as a person in a good way"). Confrontive coping and planful problem-solving were classified as problem-focused coping, whereas distancing, self-control, escape-avoidance, positive reappraisal, and accepting responsibility were grouped as emotion-focused coping. Seeking social support fell in between emotion-focused coping (e.g., "Talked to someone about how I was feeling") and problem-focused coping (e.g., "I got professional help"). Folkman and Lazarus (1988) reported significant alpha coefficients for the confrontive coping (.70), distancing (.61), self-controlling (.70), seeking social support (.76), accepting responsibility (.66), escape-avoidance (.72), planful problem-solving (. 68), and positive reappraisal (.79) subscales of WCQ. Reliabilities of coping ways, stress, and confidence measures for the present study sample are presented in Table 7.

The learned resourcefulness of the subjects was assessed by Rosenbaum's "Self-Control Schedule" (Rosenbaum, 1980), which was described in study I. The reliability of the Self-Control Schedule for study II was also quite reasonable (Cronbach's Alpha, r = .84).

Procedure

The undergraduate students were invited to participate in the research through class announcements, departmental noticeboards and individual contact in the classrooms. The participants were asked to complete three questionnaires.

All the participants signed an informed consent form (see Appendix G) prior to completing the questionnaires, indicating their willingness to participate in the study. They were also informed that they could withdraw from the research project at any time without penalty.

Table 7

Reliabilities of the Measures

		Cronbach Alpha
1.	Accepting responsibility	.49
2.	Confrontive coping	.64
3.	Distancing	.69
4.	Escape-avoidance	.69
5.	Planful-problem solving	.69
6.	Positive reappraisal	.77
7.	Self-controlling	.44
8.	Seeking social support	.70
9.	Stress	.87
10.	Confidence	.58

RESULTS

The purpose of study II was to examine the effects of situation and learned resourcefulness on perceived stress, and to examine the students' confidence in their ability to cope with these academic events. To achieve this aim, a multiple regression analysis was performed. The independent variables were situation, learned resourcefulness, and gender, and the dependent variables were academic stress and confidence. The independent measures were transformed to z scores. All main effects and interactions were included in the model.

Another aim of this study was to examine the effects of situation and learned resourcefulness on students' coping strategies. A second multiple regression analysis was carried out, based on the same independent variables. However, this time the dependent variables were the students' situation-specific coping strategies, which were assessed by the "Ways of Coping Questionnaire". Means and standard deviations of coping ways are presented in Table 8.

Table 8

Means and Standard Deviations of the Measures

Variables	M	SD
Stress	6.61	2.03
Confidence	7.45	1.67
Accepting Responsibility	6.07	2.24
Confrontive Coping	5.87	3.02
Distancing	7.31	3.45
Escape	9.14	4.37
Planful Problem Solving	10.34	3.06
Positive Reappraisal	9.31	4.36
Self-Controlling	10.41	2.96
Seeking Social Support	8.09	3.40

The Relationship between Learned Resourcefulness, Perceived Stress, Confidence, and Coping Responses

Pearson-product correlation coefficients were calculated to determine the relationship between learned resourcefulness, perceived stress, confidence, and ways of coping. The correlations across these situations are presented in Table 9.

As can be seen, learned resourcefulness was positively correlated with confidence (self-efficacy belief), whereas the correlation between learned resourcefulness and perceived stress was not significant. Learned resourcefulness was also positively correlated with planful problem-solving and positive reappraisal, and negatively associated with escape-avoidance.

Perceived stress was significantly and negatively correlated with confidence. Perceived stress was also positively related to accepting responsibility, escape-avoidance, and seeking social support, and negatively correlated with distancing. Confidence was positively related to planful problem-solving, whereas it was negatively related to escape-avoidance.

Table 9

Multiple Correlations Between Learned Resourcefulness, Stress, Confidence and Ways of Coping.

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Learned resourcefulness											
2. Stress	-.07										
3. Confidence	.31**	-.47**									
4. Accepting responsibility	-.05	.29**	-.09								
5. Confontive coping	-.03	.05	-.07	.40**							
6. Distancing	-.07	-.25**	.08	.12*	.43**						
7. Escabe-Avoidance	-.31**	.20**	-.34**	.40**	.56**	.29**					
8. Planful problem solving	.50**	.01	.29**	.27**	.28**	.12	.01				
9. Positive reappraisal	.30**	-.05	.11	.33**	.50**	.27**	.21**	.55**			
10. Self-controlling	.16*	.05	.02	.39**	.47**	.39**	.31**	.36**	.49**		
11. Seeking social support	.07	.22**	-.03	.35**	.45**	.10	.27**	.39**	.44**	.31**	

*p<.005   **p<.001

The Effect of Situation and Learned Resourcefulness on Perceived Stress and Students' Confidence Level

To examine whether situation and learned resourcefulness have a significant effect on students' perceived stress levels, and their confidence in their ability to cope with these events, a multiple regression analysis was performed. The scores of learned resourcefulness were transformed to z scores (Aiken & West, 1996). Situation was coded as -1 (for situation 1) and 1 (for situation 2). Gender was also coded as -1 (for males) and 1 (for females). The results revealed that the main effect of learned resourcefulness on students' confidence level was significant $F(1, 247)=27.53$, $p<.01$. An inspection of parameter estimates indicated that there was a significant positive relationship between learned resourcefulness and confidence level ($B= .58$, $p<.01$). Specifically, high resourcefulness was associated with a high level of confidence.

Multiple regression revealed that male and female students differed in their perceived stress level $F(1, 247)=8.84$, $p<.01$. Females ($M=6.13$) perceived the situation as more stressful than males ($M=6.89$).

There was a significant three-way interaction on stress $F(1, 247)=4.17$, $B= .28$, $p<.05$. To probe the nature of this complex interaction, the regression of learned resourcefulness on stress at the levels of situation and gender was carried out (Aiken & West, 1996). The univariate F tests indicated that the effect of learned resourcefulness on perceived stress was significant only for female students in an exam situation $F(1, 247)=5.21$, $p<.05$. The negative beta coefficient indicated that learned resourcefulness had a significant negative effect on female students' perceived stress levels in an exam situation ($B=-.50$, $p<.05$). This interaction is presented graphically in Figures 3 and 4. As can be seen from the graphs, low resourceful female

students perceived an exam situation as more stressful than both high resourceful female students and low resourceful male students.
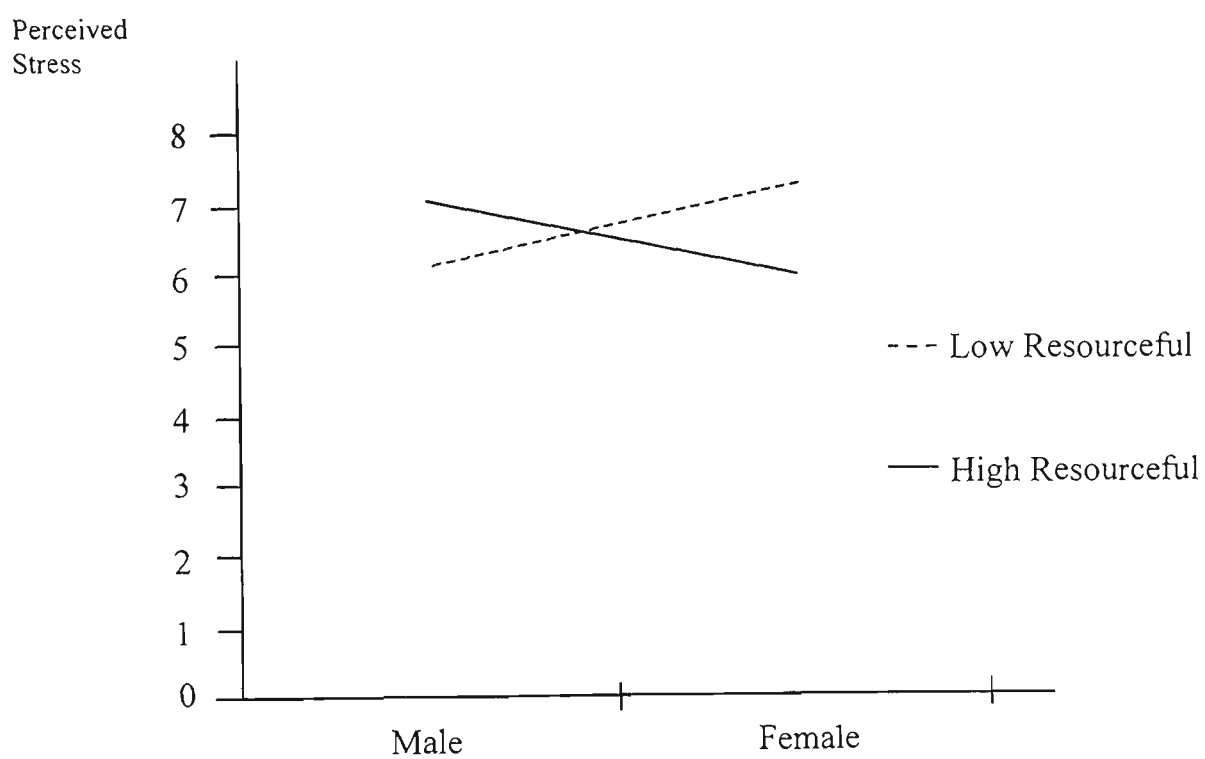
Figure 3. Impact of learned resourcefulness and gender on perceived stress for situation 1: having an exam.
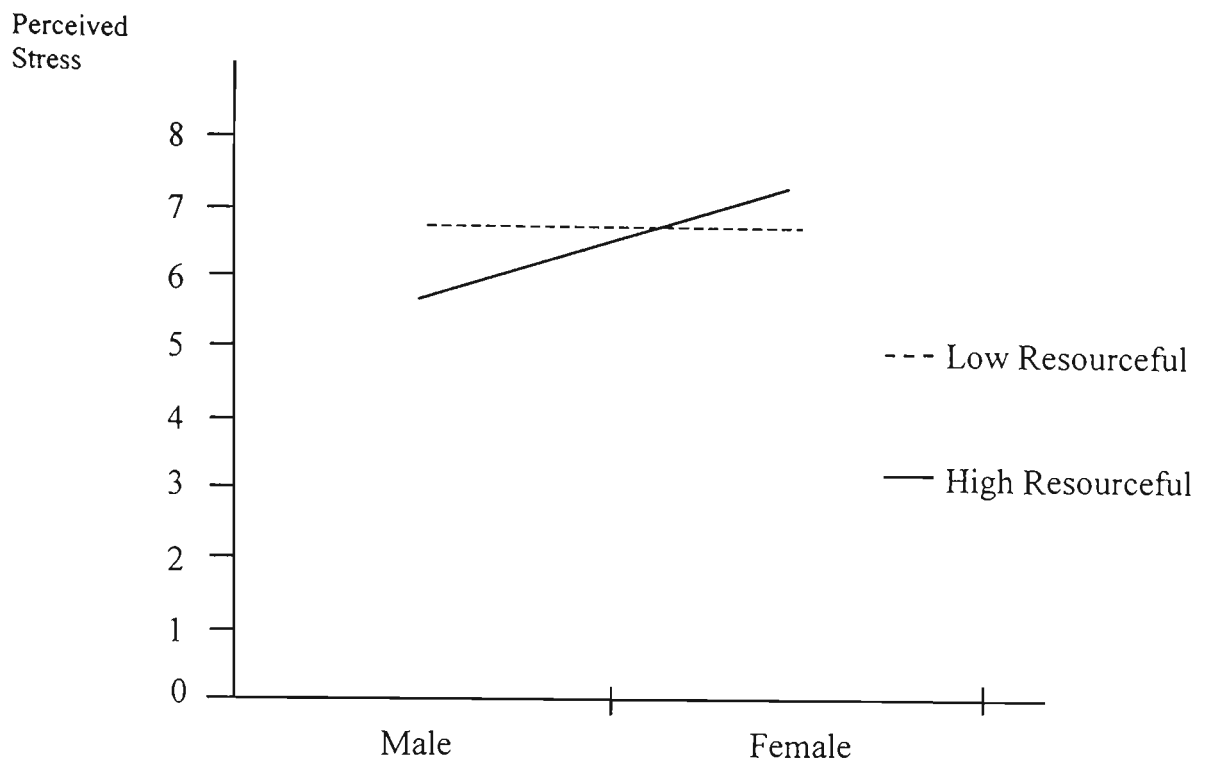
Perceived
Stress

Figure 4. Impact of learned resourcefulness and gender on perceived stress for situation 2: having a negative exam result.

The Effect of Situation and Learned Resourcefulness on Students' Coping Strategies

To examine the effect of situation and learned resourcefulness on students' coping strategies, a second multiple regression analysis with eight ways of coping as the dependent variables was carried out. The results of the regression analysis indicated that the main effect of situation on confrontive coping $F(1, 247)=6.94$, $p<.01$ and escape-avoidance was significant $F(1, 247)=11.67$, $p<.01$. In situation 1, having an exam, the students tended to use both confrontive coping ($M=6.39$) and escape-avoidance ($M=9.97$) more than in situation 2, the means respectively being

$\underline{M}$=5.35 and $\underline{M}$=8.15. Situation also had a significant effect on seeking social support $\underline{F}$(1, 247)=4.69, $\underline{p}$<.05. Students reported more seeking social support in situation 1, having an exam ($\underline{M}$=8.41), compared to situation 2, having an unsatisfactory exam result ($\underline{M}$=7.47). Situation did not have any significant effect on planful problem solving, positive reappraisal, self-controlling, distancing, and accepting responsibility.

The main effect of learned resourcefulness on escape-avoidance $\underline{F}$(1, 247)=22.51, $\underline{p}$<.01 and planful problemsolving $\underline{F}$(1, 247)=62.34 $\underline{p}$<.01 was significant. Parameter estimates indicated that learned resourcefulness was negatively related to escape-avoidance ($\underline{B}$= -1.35, $\underline{p}$<.01), and positively related to planful problem solving ($\underline{B}$= 1.46, $\underline{p}$<.01). Learned resourcefulness had a significant effect on positive reappraisal $\underline{F}$(1,247)=18.89, $\underline{p}$<.01. Parameter estimates suggested a positive relationship between high resourcefulness and positive reappraisal ($\underline{B}$= 1.26, $\underline{p}$<.01). The effect of learned resourcefulness on self-controlling was also significant $\underline{F}$(1,247)=7.08, $\underline{p}$<.01. The positive beta coefficient revealed that high resourcefulness was positively related to self-controlling ($\underline{B}$= .54, p<.01).

Male and female students differed in their use of distancing $\underline{F}$(1, 247)=5.45, $\underline{p}$<.05 and seeking social support $\underline{F}$(1, 247)=5.48, $\underline{p}$<.05. Male students tended to use more distancing ($\underline{M}$=7.99) than female students ($\underline{M}$=6.95), whereas female students reported more seeking social support ($\underline{M}$=8.41) than males ($\underline{M}$=7.47).

There was a significant three-way interaction on distancing $\underline{F}$(1, 247)=7.10, $\underline{p}$<.01. Parameters of the interaction were also significant ($\underline{B}$= -.63, $\underline{p}$<.01). To examine the nature of this interaction, the regression of learned resourcefulness on distancing in the categories of situation and gender was computed. The results of univariate tests indicated that the

simple effect of learned resourcefulness on distancing was significant only for female students in the situation of having an unsatisfactory exam result $F(1, 247)=4.38$, $p<.05$. The negative beta coefficient suggested that high resourcefulness was negatively associated with distancing in the above conditions ($B=-.72$, $p<.05$). This interaction is shown in Figures 5 and 6. As can be seen from the graphs, high resourceful female students tended to use significantly less distancing than high resourceful males and low resourceful students when they have an unsatisfactory exam result.
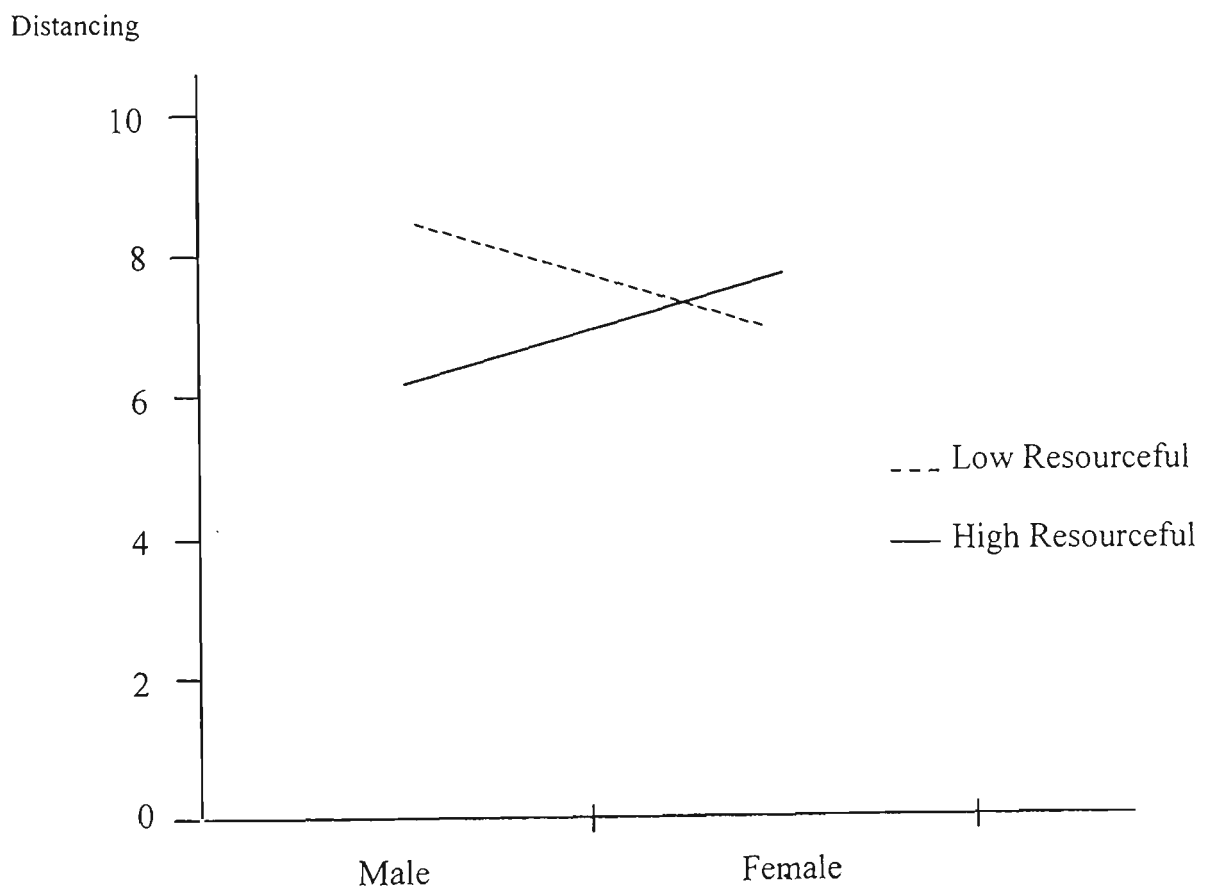
Distancing

Figure 5. Impact of learned resourcefulness and gender on distancing in the situation of having an exam.
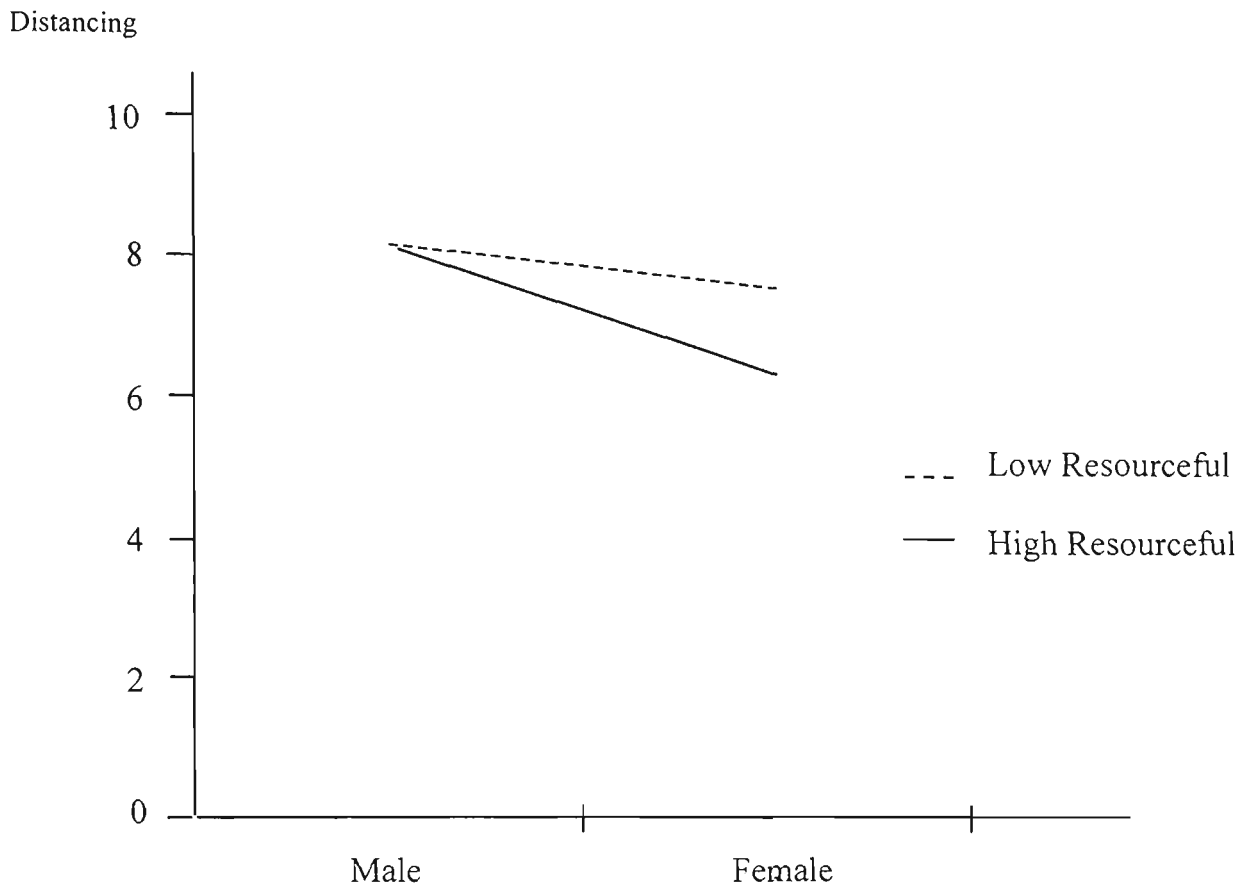
Figure 6. Impact of learned resourcefulness and gender on distancing in the situation of having a negative exam result.

DISCUSSION

The present study examined the effects of both personal and situational determinants on perceived stress, confidence, and coping responses of students. Several hypotheses were generated in which the relationship between perceived stress, confidence, coping, learned resourcefulness and situation were predicted.

The Effect of Situation and Learned Resourcefulness on Perceived Stress and Confidence

As also suggested by Rosenbaum (1990), learned resourcefulness did not affect perceived stress level. Interestingly, it was found that tree-way interaction (situation, learned resourcefulness, and gender) was significant on perceived stress level. Specifically, the results demonstrated that high resourceful female students perceived having an exam situation as less stressful than did low resourceful students and high resourceful male students.

On the basis of learned resourcefulness theory, it was expected that high resourceful subjects would perceive themselves to be more capable of coping with stressful academic situations. Results provided support for this hypothesis, revealing a significant positive relationship between learned resourcefulness and confidence. These results are in line with Rosenbaum and Ben-Ari Simira's (1986) findings that high resourcefulness was positively correlated with self-efficacy expectancy. There was no significant effect of situation on perceived stress or self-efficacy.

The Effect of Situation and Learned Resourcefulness on Coping Responses

It was anticipated that students would vary their coping strategies across two different exam situations. Consistent with this prediction, students preferred to use more confrontive coping, more escape-avoidance and more seeking social support in situation 1, having an exam, than in situation 2, having an unsatisfactory exam result. In general, these results supported transactional theory (Lazarus & Folkman, 1984), which indicated significant changes in students' coping responses across two stages (anticipatory and negative outcome) of an examination. Several factors make comparison of the current results with previous process-oriented studies difficult. First, in the previous studies, the preparation stage (having an exam situation) was compared with the waiting stage (the situation of waiting for the exam result), but not with the outcome stage (the situation of having an exam result). In contrast, the present study compared the preparation situation with the outcome situation. Second, most of the previous studies did not make a distinction between positive and negative outcomes, while in the current study only the negative outcome situation was included.

Another purpose of the present study was to examine whether learned resourcefulness influences students' situation-specific coping responses. The results of the analysis indicated that high resourceful students utilised more planful problem solving, more positive reappraisal, and less escape-avoidance than did low resourceful students.

These results are partly consistent with the results of Gintner et al.'s (1989) study, in which low resourceful students reported more wishful thinking, more distancing and more keeping to self than high resourceful students. They used an earlier version of the Ways of Coping Checklist

(Folkman & Lazarus, 1985), in which escape-avoidance is named as wishful thinking. In other words, in the new version of the Ways of Coping Questionnaire (Folkman & Lazarus, 1988), which was used in the present study, wishful thinking was renamed as escape-avoidance. Thus, in both the present and Gintner et al.'s study, it was consistently found that low resourceful students tended to use more escape-avoidance compared to high resourceful students.

They also found that high resourceful students used more problem-focused coping strategies than their low resourceful counterparts during an exam preparation week, but not during the waiting week. However, in the present study it was found that high resourceful students used more planful problem solving regardless of the situation. One possible reason for this inconsistency could be that the studies examined different situations. That is, these researchers compared the preparation stage with the waiting stage; however, in the present study, the preparation stage was compared with the outcome stage.

Surprisingly, a significant three-way interaction was obtained. Specifically, it was found that low resourceful female students tended to use significantly more distancing than high resourceful students or low resourceful males when they have an unsatisfactory exam result.

There are few studies on learned resourcefulness and situation-specific coping, therefore the present results regarding the influence of learned resourcefulness on coping cannot be compared with a large body of results. However, the significant effect of learned resourcefulness on situation-specific coping responses underlines the need for further research.

Considerable research has suggested that the use of escapist or avoidance coping strategies may be a risk factor for maladjustment (e.g.,

Convay & Terry, 1992; DeGrauw & Norcross, 1989; Holahan & Moos, 1987; Masel, Terry & Grible, 1996; Quin, Fontana & Reznikoff, 1987). On the other hand, active coping strategies, such as planful problem solving and seeking social support are associated with good adjustment to stressful situations (e.g., DeGrauw & Norcross, 1989; Dunkel-Schetter, Feinstein, Taylor & Falke, 1992; Holahan & Moos, 1987; Terry & Hynes, 1998). The literature on coping effectiveness suggests that high resourceful students use more effective strategies compared with low resourceful students.

CHAPTER 4

STUDY III

THE EFFECT OF SITUATION AND LEARNED RESOURCEFULNESS ON
COGNITIVE APPRAISALS AND COPING

Introduction

The results of study II indicated that high resourceful students
perceived academic situations as being just as stressful as their low
resourceful counterparts did. However, they felt significantly more confident
than low resourceful students. A number of significant differences was also
found in high and low resourceful students' coping strategies. High
resourceful students tended to use more planful problem solving, more self-
controlling and less escape-avoidance.

As suggested by Lazarus and Folkman (1984, 1985), situational
determinants also had significant effects on students' coping strategies. It
was found that when they had an exam, the students tended to use more
confrontive coping, escape-avoidance and seeking social support than they
did in the situation of having an unsatisfactory exam result.

Study III represented a replication of study II, which was extended in three ways. The primary addition to study III was that students' appraisals regarding the exam situations were also measured. Thus, the effect of situation and learned resourcefulness on students' primary appraisals could be examined.

Second, unlike study II, in which an inter-individual design was used, in study III an intra-individual design was used. The researchers of transactional theory have emphasised the importance of examining the same person's appraisals and coping across diverse situations.

And finally, one more situation, that of waiting for an ambiguous exam result, was added to the situations used in study II. The effect of the waiting situation on students' appraisals, perceived stress level, confidence, and ways of coping could therefore be examined, as well as the effect of the other two situations.

In a classic study by Folkman and Lazarus (1985), mentioned before, it was found that wishful thinking and distancing decreased from the waiting stage to the outcome stage. However, they did not find an increase in any coping strategies from the waiting stage to the outcome stage. They contended that students' ways of coping in the outcome stage were influenced by individual differences in their grades rather than situational demands.

Another explanation for these findings could be the confounding effect of students' expectations. That is, students usually have an idea about how they did in an exam, therefore they may not increase their coping efforts significantly from the waiting stage to the outcome stage, if the exam result is not unexpected. For example, a student with the expectation of a failed exam result will try to cope with this situation as if he/she had a failed exam

result. Therefore, when the student learnt that his/her exam result is a fail, the student may not increase or change his/her coping efforts. Due to the nature of Lazarus and Folkman's study (1985), in which they used a naturalistic exam situation, it was not possible to control or eliminate the effect of expectations regarding the examination result.

In the study by Lazarus and Folkman, data gathered from students with a positive expectation and those with a negative expectation were analysed together. However, the meaning of the waiting stage was different for these two groups of students. For example, students who have an expectation of success may not try to cope with this situation, whereas students with an expectation of failure may increase their coping efforts.

In the present study, to stabilise students' expectations, they were asked to report their coping strategies when they were waiting for an ambiguous exam result (possibly a pass or a fail marginally). Thus, the effect of the waiting stage on ways of coping could be examined without the interfering effect of outcome expectation.

Statement of the Problem

The purpose of study III was to examine the effects of three stages of an exam situation and learned resourcefulness on perceived stress, confidence, students' primary appraisals and their situation-specific coping strategies.

Research Hypotheses

The following hypotheses were tested :

1. Situational determinants will have a significant effect on students' primary appraisals.

> a) Situation 1, having an exam, will lead to more challenge and threat appraisals than situation 3, having an unsatisfactory exam result.

Transactional theory suggests that challenge and threat appraisals are related to anticipation situations that include possible harm or benefit. Therefore, it was expected that anticipation for an exam would lead to more challenge and threat appraisals. Folkman and Lazarus (1985) found that challenge and threat emotions did not change from the anticipation stage to the waiting stage; however, these appraisals decreased from the waiting stage to the outcome stage. They did not compare the anticipation stage to the outcome stage. In the present study, however, these two stages were compared to each other.

> b) Situation 3, having an unsatisfactory exam result, will lead to more harm appraisals and less benefit appraisals than other situations.

According to transactional theory, harm and benefit appraisals are associated with the outcome. If the outcome is positive, benefit appraisals will occur. Negative outcomes, however, elicit harm appraisals. Inconsistent with this premise, Lazarus and Folkman (1985) found that harm and benefit appraisals increased from the preparation week to the waiting week, but did not change from the waiting week to the outcome stage. Students' expectations about their exam performance might have an interfering effect

on these findings. Moreover, Lazarus and Folkman did not compare the preparation stage to the outcome stage. In the present study, the preparation stage was compared with the outcome stage as well as the waiting stage. Their sample consisted of student who had positive and negative outcomes. In the present study, however, the outcome was negative for all students. It was anticipated, therefore, that students would report more harm emotions in the negative outcome situation than other situations. Benefit emotions, on the other hand, would be low in the outcome stage compared to other situations.

2. Situation will have a significant effect on students' coping strategies.

a) Situation 1, having an exam, will lead to the use of more planful problem-solving.

b) Situation 2, waiting for an ambiguous exam result, will lead to the use of more distancing.

These hypotheses were based on the results of two empirical studies. First, Lazarus and Folkman (1985) found that students used more planful problem-focused coping, seeking social support, emphasising the positive, and self-isolation during the preparation week than the waiting week. They also observed that students used more distancing during the waiting stage compared to both preparation and outcome stages. Second, Gintner, West and Zarski (1989) found that students reported more distancing during the waiting week compared to the preparation week. Students also reported more keeping to self during the preparation week than the waiting week. In both of these studies, the research sample consisted of students who had an expectation of success and who had an expectation of failure during the waiting stage. Similarly, in the outcome stage they obtained data from students with a positive outcome (good grade) and with a negative outcome

(failed grade). In this study, however, students' expectations and the outcome were manipulated. Homogeneity of the present sample may result in different findings.

3. Learned resourcefulness will have a significant effect on students' confidence in their ability to cope with stress (self-efficacy expectancy). High resourceful students will have high self-efficacy expectancies.

As earlier stated, Rosenbaum (1990) has proposed that learned resourcefulness influences self-efficacy expectancy. This hypothesis was also based on the results of study II, in which it was found that high resourceful students had high self-efficacy expectancies.

4. High and low resourceful students will differ in their use of coping strategies. High resourceful students will use significantly more self-controlling and planful problem solving, and less escape-avoidance than low resourceful students.

Based on the results of study II, it was anticipated that high resourceful and low resourceful students would differ in their use of coping strategies. In study II it was found that high resourceful students tended to use more planful problem-solving and self-controlling, whereas low resourceful students used more escape-avoidance. In another study, Gintner, West and Zarski (1989) found that low resourceful students reported more distancing, wishful thinking, tension reduction, and keeping to self than high resourceful students did. High resourceful students, however, used more planful problem solving during the preparation week compared to the waiting week.

Exploratory Hypotheses

A number of exploratory hypotheses were established instead of hypotheses due to lack of the research on learned resourcefulness and cognitive appraisals, and coping.

1) Are there significant differences between high and low resourceful students' cognitive appraisals regarding stressful academic events?

2) Are there significant differences between high and low resourceful students' cognitive appraisals and ways of coping depending on the situation?

METHOD

Participants

Two hundred and five questionnaires were distributed to undergraduate students from the University of Wollongong, New South Wales, Australia. Of these, 127 were returned (62%), and 17 questionnaires were not used in the study due to incorrect responses or missing data, resulting in a sample of 110 participants (aged 18 to 25 years). Thirty-three male (aged 18 to 23) and 77 female students (aged 18 to 25) volunteered for the study. All participants were informed that any information they provided would remain confidential and used only for the purposes of this research.

<u>Materials</u>

As a data collection instrument, three imaginary situations were used. These were: 1) having an exam; 2) waiting for an ambiguous exam result; and 3) having an unsatisfactory exam result. Students were asked to imagine themselves in these situations and to indicate their appraisals (e.g., "I perceive this situation as threatening") and their emotions (e.g., "I feel eager for this situation") on a five-point Likert scale (1=not at all; 5= extremely). Folkman and Lazarus (1985) suggest that particular emotions are associated with threat, challenge, harm and benefit appraisals. In their 1985 study, they developed emotion scales measuring cognitive appraisals, in which threat was measured by worried, fearful and anxious; challenge was measured by confident, hopeful and eager; harm was measured by angry, disappointed, guilty, sad and disgusted; and finally, benefit appraisal was measured by exhilarated, pleased, happy and relieved. They reported significant coefficient alphas ranged from .59 to .84.

Following Folkman and Lazarus (1985), the same emotion scales were used in the present study. However, one more question, evaluating appraisal directly (e.g., "I perceive this situation as threatening"), was added for each appraisal. In other words, each appraisal score was calculated by adding the ratings of several emotions and an appraisal (see Appendix M). Reliabilities of the measures of cognitive appraisals for each situation are presented in Table 10. As shown, the reliabilities were quite satisfactory for threat, harm and benefit emotions ranging from .71 to .88 . However, reliability of the challenge measure was moderate for situation 1 and low for situations 2 and 3. Therefore, findings with respect to challenge emotions were interpreted with caution.

The stressfulness of the academic event was measured by two questions (e.g., "I feel this situation as stressful"). Responses consisted of a Likert Scale ranging from 1 ("not at all") to 5 ("extremely"). The sum of the ratings for each situation was used to calculate stress scores (see Appendix M). As indicated in Table 10, the reliabilities of the stress measures were reasonable.

Students' confidence levels in their ability to cope with these stressful academic events were assessed by another two questions (e.g., "This situation is beyond my ability to deal effectively with it") based on a Likert Scale ranging from 1 ("not at all") to 5 ("extremely"). The confidence scores were calculated by adding the ratings of two questions; however, reverse scoring was used for one of these two questions (see Appendix M). As can be seen from Table 10, confidence measures were only moderately reliable.

The "Ways of Coping Questionnaire" was used to determine the students' ways of coping in three different exam situations: 1) having an exam in a week's time; 2) waiting for an exam result which is possibly a pass or a fail marginally; and 3) having an unsatisfactory exam result (see Appendix O). The students were asked to rate their thoughts and reactions when faced with these stressful academic events (see Appendix N). The "Ways of Coping Questionnaire" was described in study II. The reliabilities of the eight coping scales for the three different situations are shown in Table 11.

The learned resourcefulness of the subjects was assessed by Rosenbaum's "Self-Control Schedule" (Rosenbaum, 1980). This scale was described in study I. The reliability of the schedule for study III was satisfactory (Cronbach's Alpha= .83).

Procedure

The undergraduate students were invited to participate in the research through class announcements, departmental noticeboards and individual contacts. The participants were asked to complete three questionnaires. First and second-year psychology students gained bonus points for their participation in the study.

All the participants signed an informed consent form (see Appendix G) prior to completing the questionnaires, indicating their willingness to participate in the study. They were also informed that they could withdraw from the research project at any time without penalty.

Table 10

Reliabilities of the Measure of Cognitive Appraisals, Stress, and Confidence

	Cronbach Alpha		
	Situation I	Situation II	Situation III
Threat emotions	.80	.81	.80
Challenge emotions	.56	.35	.33
Harm emotions	.84	.88	.86
Benefit emotions	.74	.78	.71
Stress	.87	.88	.86
Confidence	.50	.47	.41

Table 11

Reliabilities of Coping Scales

| | Cronbach Alpha | | |
	Situation I	Situation II	Situation III
1. Accepting responsibility	.58	.59	.68
2. Confrontive coping	.52	.61	.61
3. Distancing	.62	.60	.71
4. Escape-avoidance	.69	.67	.74
5. Planful-problem solving	.77	.72	.79
6. Positive reappraisal	.71	.71	.72
7. Self-controlling	.49	.50	.59
8. Seeking social support	.72	.76	.77

RESULTS

One of the main purposes of study III was to examine the effects of three different stages of an exam situation and learned resourcefulness on students' primary appraisals measured by emotions. To achieve this aim a multiple regression analysis was conducted, based on three independent

variables and four dependent variables. The first independent variable was the stages of an exam situation which has three levels: 1) having an exam in one week's time, 2) waiting for a possible pass or fail result, and 3) having an unsatisfactory exam result. Situation was served as a repeated measure. The second independent variable was learned resourcefulness, and the last independent variable was gender (male and female).

The dependent variables were students' primary appraisals: (1) threat, (2) challenge, (3) harm, and (4) benefit. Each of these variables was measured by a questionnaire based on a five-point Likert Scale. Means and standard deviations of these measures are presented in Table 12.

Table 12

Means and Standard Deviations of Cognitive Appraisals

	Situations					
	I		II		III	
Variables	M	SD	M	SD	M	SD
Threat Appraisal	11.53	3.55	13.25	4.00	12.95	4.07
Challenge Appraisal	11.11	2.65	9.57	3.21	7.55	2.60
Harm Appraisal	10.42	4.72	14.19	6.07	19.61	6.06
Benefit Appraisal	6.60	2.61	5.98	2.46	5.00	2.03

N=110

Another aim of this study was to examine the effects of three different stages of an exam situation and learned resourcefulness on students' coping strategies. A second repeated measures multiple regression, based on same independent variables, was carried out. However, this time the dependent variables were students' situation-specific coping strategies, which were assessed by the "Ways of Coping Questionnaire". Means and standard deviations of ways of coping are presented in Table 13.

Another purpose of the study was to examine the effect of situation and learned resourcefulness on perceived stress and confidence (self-efficacy). A third repeated measure multiple regression was performed, in which the dependent variables were students' perceived stress and their confidence levels. Means and standard deviations of perceived stress and confidence are presented in Table 14.

Table 13

Means and Standard Deviations of ways of Coping

	Situations					
	I		II		III	
Variables	M	SD	M	SD	M	SD
Accepting Responsibility	5.10	2.56	6.12	2.47	7.13	2.53
Confrontive Coping	5.38	3.32	4.84	2.85	5.34	2.93
Distancing	7.09	3.15	8.17	3.14	7.37	3.30
Escape / Avoidance	9.59	4.39	9.75	4.50	9.27	4.92
Planful Problem Solving	10.33	3.33	9.32	3.37	9.76	3.57
Positive Reappraisal	8.01	3.93	7.32	3.78	7.78	3.96
Self-Controlling	9.39	3.06	9.54	3.03	9.70	3.31
Seeking Social Support	7.85	3.85	6.71	3.53	7.46	3.71

Note. N=110

Table 14

Means and Standard Deviations of Perceived Stress and Confidence

	Situations					
	I		II		III	
Variables	M	SD	M	SD	M	SD
Stress	6.76	1.95	7.17	2.20	7.26	2.20
Confidence	7.49	1.67	6.55	1.99	6.83	1.96

The Relationship between Learned Resourcefulness, Stress, Confidence, Cognitive Appraisals and Coping Responses

Pearson-product correlation coefficients were calculated to determine the relationship between learned resourcefulness, stress, confidence, cognitive appraisals and ways of coping (see Tables 15, 16, and 17). To control for type I error, a Bonferroni adjustment was used. This raised alpha level .005. As can be seen, learned resourcefulness was positively correlated with planful problem solving and negatively correlated with escape-avoidance (respectively, r=.53, p< .005 and r=-.29 p< .005) in situation 1. These results suggest that under exam conditions high

resourceful students tended to use more planful problem solving and less escape-avoidance than their low resourceful counterparts.

Learned resourcefulness was also positively correlated with challenge emotions (r=.29, p< .005). High resourceful students appraised the situation of having an exam as more challenging than low resourceful students did.

Like situation 1, in situation 2 resourcefulness was positively correlated with planful problem solving (r=.46, p<.001) and negatively related to escape-avoidance (r=-.28, p<.005). In addition, in situation 2 learned resourcefulness was also positively correlated with positive reappraisal and seeking social support (r=.28 p<.005 and r=.26, p< .005 respectively). Unlike situation 1, there was no significant relationship between learned resourcefulness and cognitive appraisals (r=-.06, .18, -.09, -.01 p>.005).

As in situations 1 and 2, in situation 3, having an unsatisfactory exam result, there were significant positive correlations between learned resourcefulness, and planful problem solving (r=.47, p< .001) and positive reappraisal (r=.30, p< .005).

Learned resourcefulness was also significantly and positively correlated with confidence in situation 1 (r=.35, p< .005) and in situation 2 (r=.40, p< .001), but not in situation 3 (r=.19, p> .005). These correlations demonstrated that high resourcefulness was associated with strong confidence under the conditions of having an exam and waiting for an ambiguous exam result.

There are several significant correlations between stress and cognitive appraisals. Stress was positively related to threat emotions in all three situations (r=.80, r=.86, r=.85, p< .001, respectively). Similarly, stress

was significantly correlated with harm emotions in all three situations (r=.38, .56, .70, p< .001 respectively). Significant positive correlations were reported between stress and threat appraisals in all three situations (r=.78, .83, .81 p<.001 respectively). In general, high stress was associated with high threat and harm emotions.

Table 15

Correlations Between Learned Resourcefulness, Stress, Confidence, Cognitive Appraisals and Coping Ways for Situation 1

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Learned Resourcefulness		-.05	.29*	-.15	.04	-.15	-.29*	.53**	.23*	.03	.18	-.05	.29*	-.21*	.18
2. Stress			-.41**	.33**	.04	.06	.42**	.28*	.22	.28*	.20	.85**	.04	.36**	-.18
3. Confidence				-.35**	.05	-.13	-.27*	.17	-.04	-.18	-.06	-.48**	.29*	-.36**	.32**
4. Accepting Responsibility					.38**	.38**	.56**	.11	.36**	.53**	.35**	.41**	.06	.41**	.07
5. Confrontive Coping						.41**	.43**	.17	.39**	.48**	.39**	.13	.16	.22	.35**
6. Distancing							.38**	-.04	.11	.34**	.18	.22	.23	.33**	.19
7. Escape-Avoidance								.03	.25	.45**	.28*	.44**	.04	.43**	.05
8. Planful problem Solving									.38**	.26*	.38**	.23*	.26	-.05	.02
9. Positive Reappraisal										.45**	.52**	.29*	.26	.29*	.34**
10. Self-Controlling											.29*	.30*	.13	.27*	.19
11. Seeking Social Support												.31**	.10	.23	.17
12. Threat													.04	.61**	-.12
13. Challenge														-.08	.49**
14. Harm															.07
15. Benefit															

*p<.005   **p<.001

Table 16

Correlations Between Learned Resourcefulness, Stress, Confidence, Cognitive Appraisals and Coping Ways for Situation 2

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Learned Resourcefulness		.14	.40**	-.05	.02	-.11	-.28*	.46**	.28*	.18	.26*	-.06	.18	-.09	.01
2. Stress			-.22	.43**	.17	.11	.43**	.31**	.24	.33**	.26*	.86**	.33**	.56**	.06
3. Confidence				-.16	-.12	-.03	-.30**	.19	.08	.03	.04	-.20	.40**	-.33**	.15
4. Accepting Responsibility					.35**	.36**	.52**	.39**	.26	.47**	.43**	.46**	.16	.43**	.05
5. Confrontive Coping						.38**	.45**	.39**	.51**	.41**	.48**	.29*	.26*	.20	.40**
6. Distancing							.53**	.19	.22	.32**	.20	.23	.28*	.18	.33**
7. Escape-Avoidance								.20	.19	.36**	.19	.48**	.28*	.30**	.20
8. Planful problem Solving									.49**	.60**	.58**	.33**	.33*	.11	.14
9. Positive Reappraisal										.47**	.52**	.31**	.47**	.20	.36**
10. Self-Controlling											.48**	.41**	.38**	.16	.12
11. Seeking Social Support												.27*	.31**	.12	.15
12. Threat													.37**	.62**	.08
13. Challenge														.07	.47**
14. Harm															-.11
15. Benefit															

*p<.005   **p<.001

Table 17

Correlations Between Learned Resourcefulness, Stress, Confidence, Cognitive Appraisals and Coping Ways for Situation 3

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Learned Resourcefulness		.04	.19	.04	.12	-.02	-.24	.47**	.30*	.24	.21	.12	.19	-.05	-.20
2. Stress			-.46**	.47**	.21	.01	.59**	.21	.17	.37**	.15	-.85**	.19	.70**	-.05
3. Confidence				-.13	-.12	-.01	-.52**	.23	.15	-.02	.03	-.48**	.12	-.47**	.08
4. Accepting Responsibility					.35**	.22	.52	.44**	.32**	.51**	.37**	.43**	.10	.60**	-.12
5. Confrontive Coping						.22	.48**	.39**	.51**	.41**	.48**	.28*	.36**	.29*	.19
6. Distancing							.26	.08	.17	.28*	.13	.04	.22	.20	.24
7. Escape-Avoidance								.05	.20	.35**	.16	.56**	.21	.67**	.09
8. Planful problem Solving									.60**	.55**	.54**	.27*	.29*	.21	.02
9. Positive Reappraisal										.47**	.48**	.32**	.49**	.25	.21
10. Self-Controlling											.38**	.32**	.31**	.37**	.09
11. Seeking Social Support												.27*	.26	.14	.15
12. Threat													.26	.79**	-.02
13. Challenge														.21	.48**
14. Harm															.01
15. Benefit															

*p<.005   **p<.001

As seen in Tables 15, 16 and 17, there is a significant relationship between stress and ways of coping. Stress was positively correlated with accepting responsibility (r=.33, r=.43, r=.47, p< .001, respectively) and escape (r=.42, r=.43, r=.59, p< .001, respectively) in all three situations. Stress was also positively correlated with self-controlling in situations 2 and 3 (r=.37, p< .01, r=.31, p< .001, respectively).

The students' confidence in their ability to cope with these stressful academic situations was related significantly to learned resourcefulness in situation 1 (r=.29, p< .005) and in situation 2 (r=.40, p< .001), but not in situation 3 (r=.19, p> .005). High resourcefulness was associated with strong confidence under the conditions of having an exam and waiting for an ambiguous exam result. Significant negative correlations between stress and confidence in situations 1 and 3 (r=-.41 and r=-.46, p< .001, respectively) suggest that high stress was associated with low confidence under the conditions of having an exam and having a negative exam result. Similarly, confidence was negatively related to threat (r=-.48 and r=-.48, p< .001, respectively) in situations 1 and 3. Stress was also negatively related to harm emotions (r=-.36, p< .01, r=-.33 p< .01, and r=-.47, p< .01, respectively) in all three situations, suggesting that high confidence was associated with low harm emotions. Significant positive correlations between confidence and challenge emotions in situation 1 (r=-.41, p< .01, p< .001) demonstrated that high confidence related to high challenge emotions under exam conditions.

A number of significant relationship was found between confidence and coping strategies. Confidence was negatively correlated with escape-avoidance in all situations (r=-.27, p< .005, r=-.30 p< .001, and r=-.52, p< .001, respectively). Confidence was also significantly and negatively related

to accepting responsibility in situation 1 ($\underline{r}$=-.35, $\underline{p}$< .001) rather than in situations 2 or 3.

The Effect of Situation and Learned Resourcefulness on Students' Cognitive Appraisals

To examine whether situation and learned resourcefulness have a significant effect on students' primary appraisals, a multiple regression with situation serving as a repeated measure was performed. To control for type I error, a Greenhouse-Geisser adjustment was used. The scores of learned resourcefulness were transformed to $\underline{z}$ scores (Aiken & West, 1996). Gender was coded as -1 (for males) and 1 (for females). The model included all main and two-way interactions. However, three-way interaction was removed from the model because it was non-significant. The results of univariate tests indicated that the main effect of situation on threat appraisal was significant $\underline{F}$(2, 204)=14.51, $\underline{p}$<.01. The pairwise comparisons of threat appraisals revealed that the students felt less threat in situation 1 ($\underline{M}$=11.22) than in situations 2 ($\underline{M}$=12.98) and 3 ($\underline{M}$=12.57).

The main effect of situation on challenge appraisals was also significant $\underline{F}$(2, 204)= 79.79, $\underline{p}$<.01. Results of the pairwise comparisons indicated that the students reported significantly more challenge appraisals in situation 1 ($\underline{M}$=11.23) than in situations 2 ($\underline{M}$=9.72) and 3 ($\underline{M}$=7.65). Students also used significantly more challenge appraisals in situation 2 than in situation 3 ($\underline{MD}$=2.03, $\underline{p}$<.01).

The effect of situation on harm appraisals was significant $\underline{F}$(2, 211)= 113.22, $\underline{p}$<.01. Comparisons among the means revealed that situation 1

(M=10.23) was perceived as less harmful than situations 2 (M=13.98) and 3 (M=18.91). Situation 2 was also evaluated as less harmful than situation 3.

Finally, the main effect of situation on benefit appraisals was also significant F(2, 211)= 21.80, p<.01. Comparisons of the benefit appraisals in three different situations indicated that the students reported significantly more benefit appraisals in situation 1 (M=6.41) than in situations 2 (M=5.55) and 3 (M=4.78). Students also used significantly more benefit appraisals in situation 2 than in situation 3.

The main effect of learned resourcefulness on challenge appraisals was significant F(1, 107)= 7.33, p<.01. Parameter estimates revealed that high resourcefulness was positively associated with high challenge appraisals (B= .75, p<.01).

Repeated measures multiple regression revealed that male and female students differed in their benefit appraisals F(1, 107)= 6.61, p<.05. Male (M=6.54) students reported more benefit appraisals than females (M=5.57). The main effect of gender on threat appraisals was also significant F(1, 107)= 5.41, p<.05. A comparison of male and female students revealed that male students felt less threat (M=11.45) than females (M=13.07).

The effect of learned resourcefulness by situation on benefit appraisals was significant F(2, 211)=6.17, p<.01. Parameter estimates indicated that the effect of learned resourcefulness on benefit appraisal was significant only in situation 3 (B=-.43, p<.05). The negative beta coefficient revealed that high resourcefulness significantly and negatively associated with benefit appraisal under the condition of having an unsatisfactory exam result. The interaction of learned resourcefulness and situation on benefit appraisal is illustrated in Figure 7.
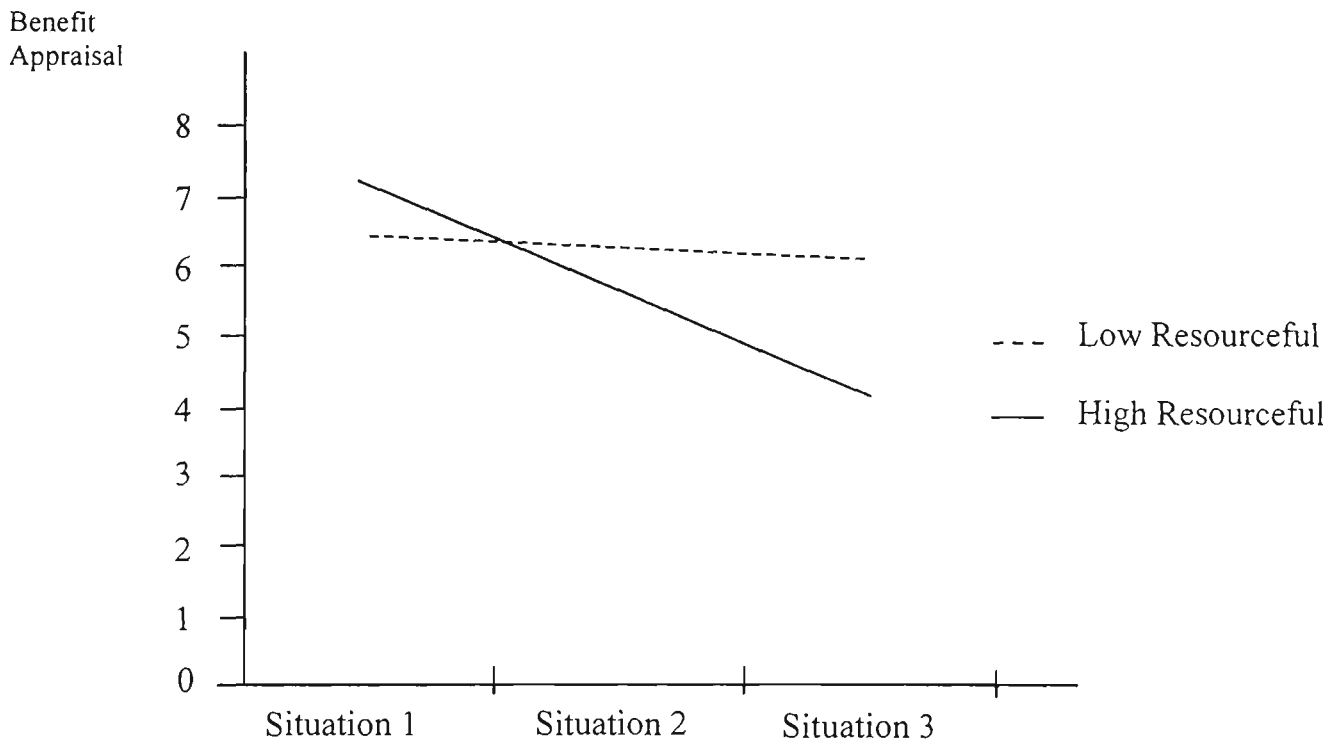
Figure 7. Interaction between situation and learned resourcefulness on benefit appraisal.

The Effect of Situation and Learned Resourcefulness on Students' Coping Responses

To examine the effect of situation and learned resourcefulness on students' coping strategies, a second multiple regression was carried out. To control for type I error, a Greenhouse-Geisser adjustment was used. The results of the multiple regression indicated that the main effect of situation on accepting responsibility F(2, 213)=33.67, p<.01, distancing F(2, 201)=4.76, p<.05, planful problem solving F(2, 201)=4.19, p<.05, positive reappraisal F(2, 193)=4.47, p<.05, and seeking social support F(2, 179)=7.04, p<.01 was significant.

Pairwise comparisons of group means was performed. To control for type I error, a Bonferroni adjustment was used. This raised the alpha level to .005. Pairwise(?) comparisons of group means indicated that the students tended to use significantly more accepting responsibility in situation 3 (M=6.76) than in situation 1 (M=4.99) and situation 2 (M=5.89). Students also reported significantly more accepting responsibility in situation 2 than in situation 1. Similarly, students also tended to use significantly more distancing in situation 2 (M=7.97) than in situations 1 (M=7.09) and 3 (M=7.33).

Comparisons of the means indicated that students reported significantly more planful problem solving in situation 1 (M=9.98) than in situation 2 (M=9.16). Similarly, positive reappraisal was reported significantly more in situation 1 (M=7.98) compared to situation 2 (M=7.21).

The pairwise comparisons indicated that the students reported more seeking social support in situations 1 (M=7.70) and 3 (M=7.24) than in situation 2 (M=6.51).

The tests of between subjects effects revealed that the effect of learned resourcefulness on escape was significant $F(1, 107)=9.36$, $p<.01$. Parameter estimates indicated that high resourcefulness was negatively related to using escape as a coping strategy ($B=-1.21$, $p<.01$ for situation 1, $B=-1.21$, $p<.01$ for situation 2, and $B=-1.12$, $p<.01$ for situation 3).

Learned resourcefulness had a significant effect on planful problem solving $F(1, 107)=48.61$, $p<.01$. Specifically, high resourcefulness was related to using planful-problem solving in all situations ($B=1.80$, $p<.01$ for situation 1, $B=1.56$, $p<.01$ for situation 2, and $B=1.69$, $p<.01$ for situation 3).

The results of the univariate F test indicated a significant main effect of resourcefulness on positive reappraisal $F(1, 107)=10.00$ $p<.01$. Parameter estimates revealed that learned resourcefulness was positively associated with positive reappraisal ($B=.91$, $p<.05$ for situation 1, $B=1.06$, $p<.01$ for situation 2, and $B=1.20$, $p<.01$ for situation 3).

The main effect of learned resourcefulness on seeking social support was also significant $F(1, 107)=7.61$ $p<.01$. Parameter estimates indicated that high resourcefulness was related to use seeking social support ($B=.73$, $p<.05$ for situation 1, $B=.96$, $p<.01$ for situation 2, and $B=.82$, $p<.05$ for situation 3).

The interaction of learned resourcefulness by situation on self-controlling was significant $F(2, 208)=4.78$, $p<.01$. An inspection of parameter estimates revealed that the effect of learned resourcefulness on self-controlling was significant only in situation 3 ($B=.09$, $p>.05$, $B=.57$, $p>.05$, $B=.80$, $p<.05$, respectively). Specifically, high resourcefulness was positively related to self-controlling under the conditions of having an unsatisfactory exam result. This interaction is presented graphically in Figure 8.
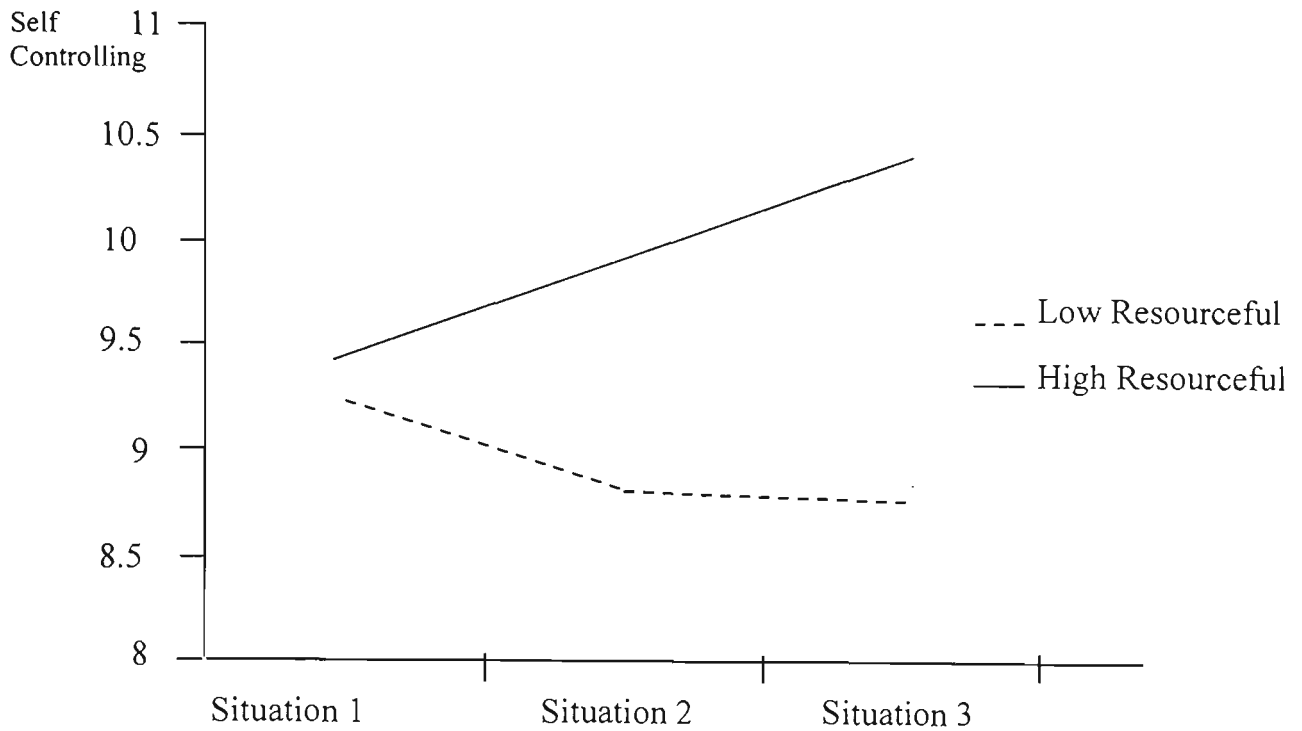
Figure 8. Interaction between situation and learned resourcefulness on self-controlling.

The effect of situation by gender on accepting responsibility was also significant $F(2, 213)=4.60$, $p<.05$. Parameter estimates revealed that the effect of gender on accepting responsibility was significant only in situation 3 ($B=.27$, $p>.01$, $B=.58$, $p>.01$, $B=.92$, $p<.01$ respectively). This interaction is shown in Figure 9. More specifically, female students tended to use more accepting responsibility than their male counterparts when they had an unsatisfactory exam result.
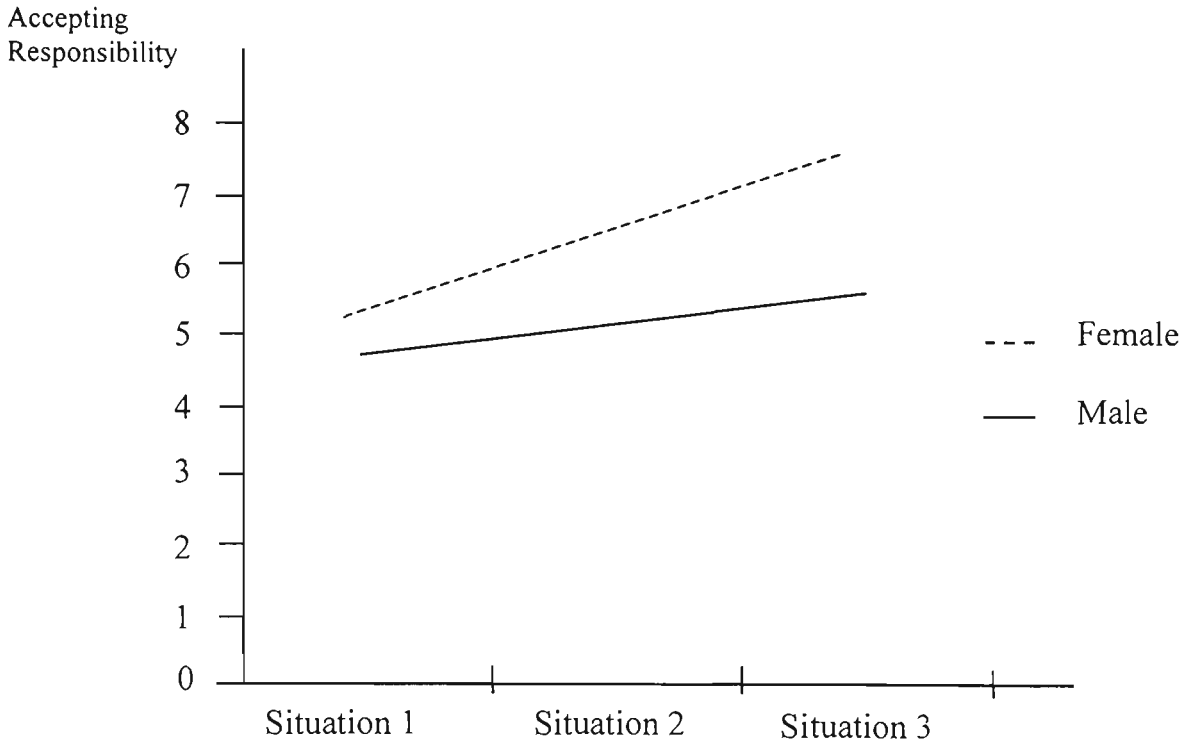
Figure 9. The effect of situation by gender on accepting responsibility.

The Effect of Situation and Learned Resourcefulness on Stress and Confidence

To compare high and low resourceful students' stress and confidence levels under three different exam situations, a multiple regression, with situation serving as a repeated measure and with stress and confidence as the dependent variables, was conducted. The results revealed that the main effect of situation on stress was significant, $\underline{F}(2,201)=3.26$, $\underline{p}< .05$. The pairwise comparisons indicated that the students considered "having an exam" to be significantly less stressful (M=6.63) than both "waiting for an ambiguous exam result" (M=7.08) and "having an unsatisfactory exam result" (M=7.07).

Univariate $\underline{F}$ tests indicated that situation had a significant effect on students' confidence levels, $\underline{F}(2,212)=8.45$, $\underline{p}< .01$. The results of pairwise comparisons revealed that students reported significantly more confidence in situation 1, having an exam ($\underline{M}$=7.52), than in situations 2, waiting for an ambiguous exam result ($\underline{M}$=6.66), and 3, having an unsatisfactory exam result ($\underline{M}$=7.06).

The tests of between subject effects revealed that the main effect of learned resourcefulness on students' confidence levels was significant, $\underline{F}(1,107)=17.77$, $\underline{p}<.01$. Parameter estimates indicated that high resourcefulness was positively related to a high level of confidence ($\underline{B}$=.48, p<.05 for situation 1, $\underline{B}$=.79, p<.01 for situation 2, and $\underline{B}$=.35, p>.05 for situation 3). There was no significant interaction.

In sum, situation had significant effects on threat, challenge, harm, and benefit appraisals. Situation 1, having an exam, was evaluated as more challenging and less threatening, whereas the negative outcome situation was perceived as more harmful and less beneficial. Challenge appraisals

were also influenced by learned resourcefulness. High resourceful students reported more challenge appraisal than did low resourceful students.

Coping responses were also affected by both situation and learned resourcefulness. The effect of situation on accepting responsibility, distancing, planful problem solving, positive reappraisal, and seeking social support was significant. Students tended to use more planful problem solving, more positive reappraisal, and more seeking social support in the situation of having an exam. They used more distancing in the waiting situation, and they accepted more responsibility in the negative outcome situation.

Learned resourcefulness also had a significant effect on students' coping responses. Specifically, high resourceful students tended to use more planful problem solving, more positive reappraisal, more seeking social support, and less escape-avoidance than low resourceful students. Students considered "having an exam" to be significantly less stressful, and they felt more confident in this situation compared to others. High resourcefulness was also positively associated with strong confidence (self-efficacy).

DISCUSSION

Study III was designed to compare high and low resourceful students' perceived stress levels, confidence, emotions and coping strategies in three different stressful academic situations, using an intra-individual design. A number of hypotheses was generated in which stress, confidence, appraisals and coping were predicted as a function of learned resourcefulness and situation.

The Effect of Situation and Learned Resourcefulness on Cognitive Appraisals

In general, it was expected that situation would have a significant effect on students' primary appraisals. On the basis of studies investigating students' appraisals, it was hypothesised that the situation of having an exam will lead to more challenge appraisals than the situation of having an unsatisfactory exam result. This hypothesis was supported. It was found that situation 1, having an exam, was perceived as more challenging than other situations. Situation 2, waiting for an ambiguous exam result, was also evaluated as more challenging than situation 3, having an unsatisfactory exam result.

A part of these findings contradicts the findings from previous research. That is, in the present study a significant difference was reported in challenge emotions between the situation of having an exam and the waiting situation. However, previous studies reported that challenge

emotions did not change from the anticipatory stage to the waiting stage (Carver & Scheier, 1994; Folkman & Lazarus, 1985). This contrast may be explained by students' expectations. In the previous studies, during the waiting stage, the sample consisted of students who had a positive expectation and those who had a negative expectation regarding the exam result. In the present study, however, to minimise individual differences in students' outcome expectations and to generate a real ambiguity, the waiting situation was described as waiting for an ambiguous exam result (possibly a pass or a fail marginally). Another reason might be the low internal consistency of challenge measures for previous research samples (Carver and Scheier, 1994; Folkman & Lazarus, 1985) and the present research sample.

In contrast to our expectations, the results of the study indicated that students felt less threat in having an exam situation than in other situations. These results contradict previous studies investigating students' appraisals. For example, Carver and Scheier (1994) found that threat appraisal decreased significantly from the preparation stage to the waiting stage, and from the waiting stage to the outcome stage. They also reported a negative correlation between exam grades and threat appraisals in the outcome stage. These findings suggest that threat appraisals are related to outcome.

Regarding threat appraisals, the findings of the present study also contrast with those of Folkman and Lazarus (1985), who found that threat emotions did not change significantly from the preparation stage to the waiting stage, but decreased significantly from the waiting stage to the outcome stage. Inconsistency between these results may be explained by differences in the students' outcomes. In Folkman and Lazarus' study, 70% of the students had a good mark from the exam. Their outcome stage can therefore be characterised as having a positive outcome. However, in the

present study, the outcome stage was defined as having a negative outcome.

It was anticipated that having an unsatisfactory outcome situation would lead to more harm appraisal and less benefit appraisal than other situations. This hypothesis was supported by the results of the study. It was found that situation 3, having an unsatisfactory exam result, was evaluated as the most harmful situation. It was also reported that situation 2, waiting for an ambiguous exam result, was evaluated as more harmful than situation 1. Benefit appraisal, in contrast, was at its lowest level under the condition of having an unsatisfactory exam result. Having an exam situation led to more benefit appraisal than the situation of waiting for an ambiguous exam result. These results supported transactional theory (Lazarus and Folkman, 1984), suggesting that harm and benefit appraisals are associated with the outcome. A positive outcome will lead to benefit appraisals, whereas negative outcomes generate harm appraisals. In the present study, only the negative outcome condition was examined. Therefore, harm appraisals increased whilst benefit appraisals decreased in the outcome stage.

In their study, Lazarus and Folkman (1985) reported that harm and benefit appraisals increased from the preparation week to the waiting week, but did not change from the waiting week to the outcome stage. One possible explanation for the stability of harm and benefit appraisals from the waiting stage to the outcome stage could be the interfering effect of students' expectations. Students usually have an expectation about their exam results. If there is not an unexpected result, their appraisals may not change from the waiting stage to the outcome stage. In the present study, using the situation of an ambiguous exam result eliminated the effect of students' expectations. Therefore it was possible to examine harm and

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benefit appraisals in the waiting and outcome stages without any interfering effect of expectations.

The results of the study demonstrated that learned resourcefulness had a significant effect on challenge appraisal. Specifically, high resourcefulness was related to a high level of challenge appraisal. There was also an interaction effect on benefit appraisal. Learned resourcefulness was negatively associated with benefit appraisal in the situation of having a negative exam result, but not in other situations.

The Effect of Situation and Learned Resourcefulness on Perceived Stress and Confidence

Unlike study II, the main effect of situation on stress was significant in study III. It was found that having an exam situation would lead to a low level of perceived stress compared with other situations. This finding supports previous studies suggesting that controllable situations are perceived as less stressful than uncontrollable situations (e.g., Reich & Zautra, 1981; Wilder & Chiriboga, 1991).

In contrast to study II, a significant effect of situation on confidence was found in study III. Students felt more confident in the situation of having an exam compared to other situations. Situation 1, having an exam, is objectively a more controllable situation than other situations, therefore students may perceive themselves to be more capable of coping with a controllable academic event. This inconsistency between the results of studies II and III might have resulted from the way the research was designed. In study II, an inter-individual design, in which each situation was evaluated by different individuals, was used, whereas in study III, an intra-

individual design, in which all situations were evaluated by the same person, was utilised. The intra-individual design allows individuals to make a comparison between the situations. After evaluating situation 1, having an exam, situation 2, waiting for an ambiguous exam result, might be evaluated as more stressful or the students might expect low efficacy. However, in an inter-individual design, students cannot think about other situations and cannot compare this situation with others.

Consistent with study II, it was found that high resourcefulness was related to a high level of confidence. These results were consistent with learned resourcefulness theory suggesting that learned resourcefulness influences the individual's self-efficacy beliefs.

The Effect of Situation and Learned Resourcefulness on Coping Responses

On the basis of studies investigating students' coping responses, it was hypothesised that having an exam situation would lead to more planful problem solving. This hypothesis was supported. Under the condition of having an exam, students utilised more planful problem solving compared to the waiting situation, but not the negative outcome situation. These results are consistent with previous studies which found that students tended to use more problem-focused coping in the preparation week compared to the waiting week (Bolger, 1990; Carver & Scheier, 1994; Folkman & Lazarus, 1985; Raffety, Smith & Ptacek, 1997).

It has been consistently found that in the waiting stage students relied on more distancing compared to the preparation and outcome stages (e.g., Carver & Scheier, 1994; Bolger, 1990; Gintner, West, and Zarski, 1989; Folkman & Lazarus, 1985; Raffety, Smith & Ptacek, 1997). This finding was

obtained once again in the present study. It appears that when there is nothing to do except wait, students rely on distancing.

In addition, the main effects of situation on accepting responsibility, positive reappraisal, and seeking social support were also significant. Students accepted more responsibility in situation 3, having an unsatisfactory exam result, than they did in other situations. This finding seems to be inconsistent with the findings of Folkman and Lazarus. They failed to find any significant change in accepting responsibility from the waiting stage to the outcome stage. However, when they examined the effect of exam grades on coping responses, they found that students with low grades increased their use of self-blame (which is similar to accepting responsibility) from the waiting week to the outcome week. From this perspective, the results of the present study and those of Folkman and Lazarus were consistent.

The results of the present study indicated that positive reappraisal was preferred more in the situation of having an exam than in that of waiting for an ambiguous exam result. These findings are in line with Folkman and Lazarus' findings that students decreased their use of emphasising the positive (same as positive reappraisal) from the preparation week to the waiting week. Carver and Scheier (1994), on the other hand, did not find any significant difference in positive reframing during three stages of an exam. One possible reason for this inconsistency might be the use of different coping scales. In both the present study and Folkman and Lazarus', different versions of the Ways of Coping Questionnaire were used, while Carver and Scheier used the situational format of the COPE inventory (Carver et al., 1989).

Consistent with Folkman and Lazarus, it was reported that students relied less on seeking social support in the waiting situation compared to other situations. Similarly, Folkman and Lazarus (1985) reported that seeking social support decreased from the anticipatory stage to the waiting stage. They also reported that students with low grades increased their use of seeking social support from the waiting stage to the outcome stage. Bolger (1990) consistently found that subjects used more seeking social support during the pre-examination stage compared to the post-examination stage. Carver and Scheier (1994) have dichotomised seeking social support as instrumental support and emotional support. Similarly, they reported that students utilised more instrumental support during the preparation stage compared to the waiting stage. In contrast, emotional support decreased from the waiting stage to the outcome stage. It may be necessary to make a distinction between these two kinds of social support.

In contrast to previous studies, Raffety, Smith and Ptacek (1997) found that support-seeking increased from the preparation stage to the exam stage (which was not examined in other studies), decreased during the exam, and reached its peak after the exam. A significant difference between previous studies and the study of Raffety et al. (1997) should be noted. In Raffety et al.'s study, students' coping responses regarding the waiting stage was measured the evening after the exam, whereas in other studies the waiting stage was longer than this. Immediately after the examination, students may seek social support, but on the other hand they might not seek social support for a week.

The results of study II regarding the effect of learned resourcefulness on coping responses were repeated in study III. Compared to low resourceful students, high resourceful students tended to utilise more planful problem solving, more positive reappraisal and less escape-avoidance. The

effect of learned resourcefulness on escape-avoidance was also reported by Gintner et al. (1989). They found that low resourceful students used more wishful thinking (same as escape-avoidance in the present study), more distancing and more keeping to self than high resourceful students. In the present study, we could not find any significant effect of learned resourcefulness on distancing or self-controlling.

These results are partly consistent with the results of Gintner et al.'s (1989) study, in which low resourceful students reported more wishful thinking, more distancing and more keeping to self than high resourceful students. They used an earlier version of the Ways of Coping Checklist (Folkman & Lazarus, 1985), in which escape-avoidance is known as wishful thinking. In other words, in the new version of the Ways of Coping Questionnaire (Folkman & Lazarus, 1988), which was used in the present study, wishful thinking was renamed as escape-avoidance. Thus, in both the present and Gintner et al.'s study, it was consistently found that low resourceful students tended to use more escape-avoidance than high resourceful students.

In addition, high resourceful students used more seeking social support than their low resourceful counterparts. This finding is consistent with Rahman's (1990) broader definition of resourcefulness, in which it is emphasised that resourcefulness is not only the ability to use one's personal resources but also the ability to use social resources.

A significant interaction between situation and learned resourcefulness was found on self-controlling. In the situation of having an unsatisfactory exam result, high resourcefulness was related to a greater degree of self-control. These findings suggest that high resourceful students were more likely to regulate their emotions by themselves when they had an

unsatisfactory exam result. This finding was obtained for the first time in the present study. Gintner et al. did not include the outcome stage, therefore it is not possible to make a comparison of this result with Gintner et al.'s study. Also, the low internal consistency of the self-controlling subscale for the present sample suggests a cautious interpretation. Further research is needed on the relationship between learned resourcefulness and self-controlling in negative outcome conditions.

CHAPTER 5

GENERAL DISCUSSION

Study I examined several personality dispositions (academic attributional style, locus of control, and learned resourcefulness) and academic stress as a predictor of academic performance. The results of study I indicated that academic stress had a detrimental effect on academic performance, but that this effect was moderated by learned resourcefulness. Therefore, study II focused on the relationship between learned resourcefulness and coping with academic stressors. Based on transactional theory, high and low resourceful students' situation-specific coping responses were examined, as well as their perceived stress levels and self-efficacy expectancies. It was found that, compared to low resourceful students, high resourceful students relied on more planful problem solving, more positive reappraisal and less escape-avoidance. Study III was a replication of study II, with three extensions: students' appraisals were also included, one more situation was added, and an intra-individual design was used. The results are discussed in relation to previous literature.

<u>Academic Performance as a Function of Personal Dispositions and</u>
<u>Academic Stress</u>

Attributional style has been suggested as a predictor of academic performance by reformulated learned helplessness theorists. However, empirical studies show mixed findings. Some researchers have supported this premise (Peterson & Barrett, 1980; Seligman, cited by Peterson, 1990; Schulman et al., cited by Schulman, 1995), whereas others did not find a significant relationship between attributional style and academic performance (Schulman et al. cited by Schulman, 1995; Tiggeman & Crowley, 1993). In the present study, to overcome the problem of low cross-situational consistency of attributional style, an academic attributional style questionnaire was used. Also, the dimensions of attributional style were examined as predictors of academic performance, as well as academic attributional style due to arguments on internality dimension (e.g., Fosterling, 1985; Seligman & Schulman, 1986; Weiner, 1986, 1994). However, we failed to find a relationship between academic attributional style, or its dimensions, and academic performance. Reformulated learned helplessness theory has been criticised due to the fact it ignores the controllability dimension (e.g., Brown & Siegel, 1988; Fosterling, 1985; Schiaffino & Levenson, 1992). Therefore, in the present study, locus of control was also included to examine the additive or interaction effects of attributional style and locus of control.

Three different locus of control beliefs, which are internal, chance, and powerful others-orientations, were examined. Internal and chance locus of control orientations were expected to predict students' academic performance. In contrast to this prediction, none of the locus of control beliefs significantly contributed to predicting academic performance. Low

internal consistency of internality scale might be responsible for these findings.

Rosenbaum (1990) suggests that high resourceful individuals, using their self-control skills, can minimise the negative effect of stress on their performance. It was assumed that the academic area is reasonably stressful. It was therefore predicted that learned resourcefulness might influence students' academic performance. Results of the study did not confirm this hypothesis. Learned resourcefulness did not have a significant effect on academic performance.

From another perspective, individual differences in academic stress should be considered in order to examine the influence of learned resourcefulness on academic performance. Therefore, the effect of learned resourcefulness on academic performance should be examined under high and low stress situations. First, academic stress was expected to influence academic performance. In line with this prediction, the results indicated that academic stress was negatively associated with academic performance. Second, it was anticipated that under conditions of high stress, the performance of high resourceful students would be better than that of low resourceful students. The results of the study indicated that the negative effect of academic stress on academic performance is moderated by learned resourcefulness. Specifically, academic stress had a significant negative effect on the academic performance of low resourceful students, whereas this effect was not significant for high resourceful students. This finding confirms Rosenbaum's self-control theory, which suggests that high resourceful individuals can control and minimise the negative effect of stressful events on their performance by using their behavioural and cognitive skills. In summary, consistent with Rosenbaum's self-control theory and empirical research (Rosenbaum, 1990; Rosenbaum & Ben-Ari, 1985;

Rosenbaum & Jaffe, 1983), the present findings underscore the role of individual differences in learned resourcefulness as a moderator of the effect of academic stress on academic performance.

Learned Resourcefulness, Situational Determinants and Coping with Stress

The results of study I, regarding the moderating effect of learned resourcefulness, have raised a number of questions relating to the relationship between learned resourcefulness and perceived stress, self-efficacy, appraisals, and coping. Studies II and III examined the effect of learned resourcefulness on perceived stress levels, self-efficacy expectancy, cognitive appraisals, and coping responses to different stressful academic situations. In the present study, based on the transactional theory of coping, the effect of situation on perceived stress, self-efficacy, cognitive appraisals, and coping responses was also tested.

The Effect of Situation on Perceived Stress, Self-Efficacy and Coping

The results of the present study indicate that situation had a significant effect on perceived stress levels. Having an exam situation was perceived as less stressful than the other situations. In contrast to study II, a significant effect of situation on self-efficacy expectancy was found in study III. Students reported higher self-efficacy in the situation of having an exam compared to the other situations.

Situation also had a significant effect on cognitive appraisals. Situation III was evaluated as more challenging and less threatening than the other situations. These findings do not confirm the results of previous

studies (Carver & Scheier, 1994; Folkman & Lazarus, 1985), which found a significant decrease in challenge and threat appraisal from the waiting week to the outcome week. Inconsistency between these results suggests that individuals' expectations in the waiting stage and the quality of the outcome in the outcome stage may affect challenge and threat appraisals. Further research regarding this issue is needed.

According to transactional theory (Lazarus & Folkman, 1984), harm and benefit appraisals are associated with the outcome. A positive outcome will lead to benefit appraisals, whereas negative outcomes generate harm appraisals. In the present study, only the negative outcome condition was examined; harm appraisals therefore increased, whereas benefit appraisals decreased in the outcome stage.

On the basis of previous studies investigating the effect of situation on coping responses, it was expected that situation would have a significant effect on coping responses (e.g., Bolger, 1990; Carver & Scheier, 1994; Folkman & Lazarus, 1985). The results of the present study indicated that students were more likely to use confrontive coping, escape, and seeking social support in the situation of having an exam compared to having an unsatisfactory exam result. The results of study II are not comparable with previous studies because they did not compare the preparation stage with the outcome stage.

Study III, on the other hand, was quite similar to previous studies. The results of study III demonstrated that situation had a significant effect on planful problem solving, distancing, accepting responsibility, positive reappraisal, and seeking social support. Consistent with previous studies, it was found that students tended to use more planful problem solving in the situation of having an exam compared to the waiting situation (Bolger, 1990;

Carver & Scheier, 1994; Folkman & Lazarus, 1985; Raffety, Smith & Ptacek, 1997). Lazarus and Folkman suggest that perceived controllability of the situation plays a determining role in coping responses. If the situation is perceived as amenable to control, individuals are more likely to use problem-focused strategies. However, one of these studies (Folkman & Lazarus, . 1985) and the present study suggest that objective controllability of the situation may also have an effect on coping responses. Preparation for an exam is objectively more controllable compared to waiting for an exam result.

The present results indicated that students used more distancing in the waiting situation compared to the preparation and outcome situations. These findings are consistently reported by previous studies (e.g., Carver & Scheier, 1994; Bolger, 1990; Gintner, West, & Zarski, 1989; Folkman & Lazarus, 1985; Raffety, Smith & Ptacek, 1997).

Another significant effect of situation was reported, this time on accepting responsibility. Students accepted more responsibility in situation 3, having an unsatisfactory exam result, than they did in the other situations. Similarly, Folkman and Lazarus (1985) found that students with a low grade increased their use of self-blame, which is similar to accepting responsibility, from the waiting week to the outcome week.

Positive reappraisal was used more in the situation of having an exam than in that of waiting for an ambiguous exam result. This result is consistent with Folkman and Lazarus' finding that students decreased their use of emphasising the positive from the preparation week to the waiting week.

Students tended to use less seeking social support in the waiting situation compared to the other situations. In a similar vein, previous studies

indicated that students decreased their use of social support from the preparation week to the waiting week. In addition, results of the present study indicated that students also used more seeking social support in the negative outcome situation compared to the waiting stage. The pattern of seeking social support appears to be opposite to that of distancing. When there was nothing to do but wait, individuals tended to use more distancing and less seeking social support.

In general, studies investigating the effect of situation on coping responses have found consistent findings. Planful problem solving, and positive reappraisal are more likely to be used in the exam preparation stage, whereas distancing is more likely to be utilised in the waiting stage. The nature of the outcome plays an important role in determining coping responses in the outcome stage. When the outcome is negative, students accept more responsibility and use more seeking social support in the outcome stage. The research has supported the knowledge that certain situations lead to certain types of coping.

The Influence of Learned Resourcefulness on Perceived Stress, Self-Efficacy, Cognitive Appraisals, and Coping

As proposed by Rosenbaum (1990), learned resourcefulness did not influence perceived stress levels, whereas the effect of learned resourcefulness on self-efficacy expectancy was significant. High resourceful students perceived these academic events as being as stressful as their low resourceful counterparts did. However, they reported a higher level of confidence in their ability to cope with these academic events than low resourceful students did. Similarly, Ben-Ari Simira (1986) found a significant

positive relationship between learned resourcefulness and self-efficacy expectancy.

The effect of learned resourcefulness on cognitive appraisals was examined only in study III. The results revealed that high resourceful students tended to appraise these situations as more challenging. In the academic area there is usually something that can be done to change the negative outcome, such as sitting a second or supplementary exam or undertaking the course a second time. Therefore, challenge appraisals may be helpful to achieve the demands of the academic environment.

The results of both studies II and III revealed that the influence of learned resourcefulness on students' coping responses was also significant. High resourceful students used more problem-focused coping, more positive reappraisal, and less escape-avoidance than low resourceful students. Gintner et al. reported that, compared to low resourceful students, high resourceful students used less escape. Additionally, in study III, it was found that high resourceful students utilised more seeking social support than low resourceful students. This finding supported Rachman's (1990) suggestion that learned resourcefulness includes the ability to use social resources.

There was no significant interaction effect of learned resourcefulness and situation on coping responses in study II. In contrast, a significant interaction effect of situation and learned resourcefulness on self-controlling was reported in study III. In the situation of having an unsatisfactory exam result, high resourcefulness was related to a high degree of self-controlling. However, this finding was not reliable due to the low alpha coefficient of the self-controlling scale. Further research is needed in order to clarify this interaction.

In summary, the present study suggests that high resourceful students can minimise the negative effect of academic stress on their academic performance. They had higher self-efficacy expectancies. They appraised stressful academic situations as more challenging. They used more problem-focused coping, more positive reappraisal, more seeking social support and less escape-avoidance. The characteristics of high resourceful individuals can be evaluated by the literature on coping effectiveness.

The results of earlier studies examining coping effectiveness suggest that problem-focused coping is associated with decreased symptomatology under controllable situations (e.g., Baum & Singer, 1983; Folkman, Lazarus, Gruen & DeLongis, 1986; Forsythe & Compas, 1987). On the other hand, it was proposed that uncontrollable situations are tolerated better by emotion-focused coping (Folkman & Lazarus, 1985; Folkman et al., 1986; Forsythe & Compas, 1987). In view of these findings, high resourceful students cannot be evaluated as using an adaptive type of coping, because we did not find any differences in high resourceful students' coping patterns under high and low control situations. In both controllable and uncontrollable academic situations they reported similar patterns of coping.

Recent studies, on the other hand, have reported that problem-focused coping is positively associated with decreased symptomatology and psychological adjustment under controllable situations, and that these strategies do not have any negative effect on adjustment under low-control situations (e.g., Convay & Terry, 1992). It was even found that problem-focused coping was significantly correlated with psychological adjustment, regardless of the situational controllability (Heppner et al., 1995). In sum, the effect of problem-focused coping on adaptation is positive in controllable

situations. Under low control situations, the effect of problem-focused coping on psychological adjustment, if it is not positive, is not negative either.

Escapist strategies, in contrast, have a negative effect on adaptation, regardless of the appraised controllability of the situation (e.g., Carver et al., 1993; Convay & Terry, 1992; Masel et al., 1996). Studies have also failed to find any positive effect of emotion-focused coping on adjustment in low control situations (Convay & Terry, 1992; Masel et al., 1996).

In light of the literature, the coping patterns of high resourceful students, that is, more problem-focused and less escapist, may be evaluated as effective and adaptive. Rosenbaum's suggestion that high resourceful individuals can control the detrimental effect of stress on their performance, using their behavioural and cognitive skills, was supported in the present study of university students.

In summary, it has been consistently reported that coping responses are the products of situational factors and individual predispositions. In the present study, support was found for situation and learned resourcefulness being important factors affecting coping responses.

Implications for Further Directions

The findings of the three studies make a significant contribution to the understanding of the relationship between learned resourcefulness, and academic stress, academic performance, appraisals, and coping. The present study provided support for Lazarus and Folkman's (1984, 1985) proposal that coping responses are influenced by situational and personal (learned resourcefulness) factors.

Previous studies examining coping have used trait or process approaches. However, in the present study an eclectic approach was used. In light of the literature, it was assumed that coping is, at least to some degree, stable over time in the same or similar stressful situations. Therefore, students were asked to report their tendencies for using eight coping strategies when they faced different examination situations, rather than their coping strategies for a single examination. The results of the present study are consistent with those of previous studies. For example, previous studies (e.g., Carver & Scheier, 1994; Bolger, 1990; Gintner, West, & Zarski, 1989; Folkman & Lazarus, 1985; Raffety, Smith & Ptacek, 1997) and the present study consistently reported that in the waiting stage students relied on more distancing compared to the preparation and outcome stages. Consistencies between the findings of the present study and those of previous studies suggest that students have a tendency to use similar coping patterns in similar situations. However, more research is needed on this issue.

The results of study I suggest that the effect of academic stress on academic performance is moderated by learned resourcefulness. A high level of academic stress was associated with a low GPA in low resourceful students, but not in high resourceful students. This effect should be examined in further studies of other stressful situations, such as problems with parents or being bored in class.

In study III, it was found that in the situation of having an unsatisfactory exam result, high resourcefulness was related to a high degree of self-controlling. However, this finding was not reliable due to the low alpha coefficient of the self-controlling scale. Further research is needed in order to clarify this interaction.

The results of studies II and III suggest that high resourceful students have higher self-efficacy expectancies. They appraise stressful academic situations as more challenging and they use more problem-focused coping, more positive reappraisal, more seeking social support, and less escape-avoidance during the three stages of an examination situation. It appears that high resourceful students have a more adaptive coping pattern compared to low resourceful students. This result suggests that it would be profitable for educators to teach students learned resourcefulness skills.

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Appendix A

CONSENT FORM TO PARTICIPATE IN RESEARCH AT THE UNIVERSITY OF WOLLONGONG

Research Title

<u>Psychological Predictors of Academic Performance</u>

<u>Researcher</u>: Ms. Serap Akgun

This research project is being conducted as part of a doctoral thesis in psychology supervised by Assoc. Prof. Mark Anshel in the department of psychology at the University of Wollongong. The purpose of the study is to determine psychological predictors of academic performance among University of Wollongong undergraduate students, and to examine the effectiveness of their use of coping strategies. As a participant, you will be asked to answer five questionnaires which ascertain certain psychological dispositions that relate to stress and coping. Your first-year and second-year marks will also be obtained from the university as an indicator of academic performance. You will not be identified by name, but by student number. All information collected will be kept strictly confidential for research purposes. You will be free to withdraw from the research project at any time without penalty.

If you have any enquires regarding the conduct of the research please contact the Secretary of the University of Wollongong Human Research Ethics Committee on (042) 214457.

My signature indicates an understanding that the data collected will be used only for research purposes, and I consent for the data to be used in that manner. I agree to participate in this study.

Student Number: _____

Name (print): _____

Signature: _____   Date: ..../........./.........

Appendix B

To the subjects of the research,

The purpose of the study is to determine psychological predictors of academic performance among University of Wollongong undergraduate students, and to examine the effectiveness of their use of coping strategies. Please answer every question as honestly as possible. There are no right or wrong answers. Your answers will be kept confidential for the research.

Thanks very much for your help and time.

Serap Akgun
Doctoral student
Department of Psychology

PART   1

Please answer all of the questions below.

1) Student Number:_____

2) Gender: Male _____   Female _____

3) Age: _____ (years as of today)

4) How many years have you attended school beyond year 12? _____years.

Appendix C

PART 2

Student No :

INTERPRETATION OF ACADEMIC EVENTS

Please try to imagine yourself in the situations that follow. If such a situation happened to you, what would you feel would have caused it? While events may have many causes, we want you to pick only one-THE MAJOR CAUSE IF THIS EVENT HAPPENED TO YOU.

Please write the cause in the blank provided after each event. Next we want you to answer three questions about the cause you provided. First, is the cause of this event something about you or something about other people or circumstances? Second, is the cause of this event something that will persist across time or something that will never again be present? Third, is the cause of this event something that affects all situations in your life or something that just affects this type of event?

To summarise, we want you to :

1. Read each situation and vividly imagine it happening to you.

2. Decide what you feel would be the one major cause of the situation if it happened to you.

3. Write the cause in the blank provided.

4. Answer three questions about the cause.

1. You cannot get all the reading done that your instructor assigns.

    A. Write down the one major cause:

    B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

        totally due   totally due
          to others 1   2   3   4   5   6   7   to me

    C. In the future, will this cause again be present? (circle one number)

        never   always
        present 1   2   3   4   5   6   7   present

    D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

        just this   all
        situation 1   2   3   4   5   6   7   situations

- -

2. You fail a final examination.

    A. Write down the one major cause:

    B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

        totally due   totally due
          to others 1   2   3   4   5   6   7   to me

    C. In the future, will this cause again be present? (circle one number)

        never   always
        present 1   2   3   4   5   6   7   present

    D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

        just this   all
        situation 1   2   3   4   5   6   7   situations

3.   You show up for a class and find to your surprise that there is a quiz.

    A.   Write down the one major cause:

    B.   Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

totally due to others	1	2	3	4	5	6	7	totally due to me

    C.   In the future, will this cause again be present? (circle one number)

never present	1	2	3	4	5	6	7	always present

    D.   Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

just this situation	1	2	3	4	5	6	7	all situations

- -

4.   You are on academic probation.

    A.   Write down the one major cause:

    B.   Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

totally due to others	1	2	3	4	5	6	7	totally due to me

    C.   In the future, will this cause again be present? (circle one number)

never present	1	2	3	4	5	6	7	always present

    D.   Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

just this situation	1	2	3	4	5	6	7	all situations

5. You do not have high enough grades to switch to your desired major.

    A. Write down the one major cause:

    B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

        totally due   totally due
        to others   1   2   3   4   5   6   7   to me

    C. In the future, will this cause again be present? (circle one number)

        never   always
        present   1   2   3   4   5   6   7   present

    D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

        just this   all
        situation   1   2   3   4   5   6   7   situations

- - - - - - - - - - - - - -

6. You cannot solve a single problem in a set of twenty, assigned as homework.

    A. Write down the one major cause:

    B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)
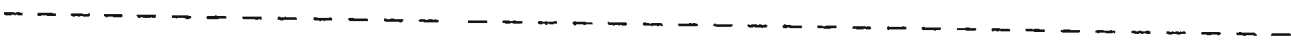
        totally due   totally due
        to others   1   2   3   4   5   6   7   to me

    C. In the future, will this cause again be present? (circle one number)

        never   always
        present   1   2   3   4   5   6   7   present

    D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

        just this   all
        situation   1   2   3   4   5   6   7   situations

7. You are dropped from the university because tour grades are too low.

    A. Write down the one major cause:

    B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

    totally due   totally due
    to others   1   2   3   4   5   6   7   to me

    C. In the future, will this cause again be present? (circle one number)

    never   always
    present   1   2   3   4   5   6   7   present

    D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

    just this   all
    situation   1   2   3   4   5   6   7   situations

- -

8. You cannot get started writing a paper.

    A. Write down the one major cause:

    B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

    totally due   totally due
    to others   1   2   3   4   5   6   7   to me

    C. In the future, will this cause again be present? (circle one number)

    never   always
    present   1   2   3   4   5   6   7   present

    D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

    just this   all
    situation   1   2   3   4   5   6   7   situations

CONTINUE ON THE OTHER SIDE

9. You cannot find a book in the library.

    A. Write down the one major cause:

    B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

    | totally due to others | 1 | 2 | 3 | 4 | 5 | 6 | 7 | totally due to me |

    C. In the future, will this cause again be present? (circle one number)

    | never present | 1 | 2 | 3 | 4 | 5 | 6 | 7 | always present |

    D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

    | just this situation | 1 | 2 | 3 | 4 | 5 | 6 | 7 | all situations |

- -

10. The required textbook for a cause is unavailable in the bookstore.

    A. Write down the one major cause:

    B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

    | totally due to others | 1 | 2 | 3 | 4 | 5 | 6 | 7 | totally due to me |

    C. In the future, will this cause again be present? (circle one number)

    | never present | 1 | 2 | 3 | 4 | 5 | 6 | 7 | always present |

    D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

    | just this situation | 1 | 2 | 3 | 4 | 5 | 6 | 7 | all situations |

11. You get a PASS TERMINATING in a course required for your major.

   A. Write down the one major cause:

   B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

           totally due   totally due
           to others   1   2   3   4   5   6   7   to me

   C. In the future, will this cause again be present? (circle one number)

           never   always
           present   1   2   3   4   5   6   7   present

   D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

           just this   all
           situation   1   2   3   4   5   6   7   situations

----

12. You cannot understand the points a lecturer makes.

   A. Write down the one major cause:

   B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

           totally due   totally due
           to others   1   2   3   4   5   6   7   to me

   C. In the future, will this cause again be present? (circle one number)

           never   always
           present   1   2   3   4   5   6   7   present

   D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

           just this   all
           situation   1   2   3   4   5   6   7   situations

Appendix D

PART 3

Student No:

On the next page is a series of attitude statements. Each represents a commonly held opinion. There are no right or wrong answers. You will probably agree with some items and disagree with others. We are interested in the extent to which you agree or disagree with such matters of opinion.

Read each statement carefully. Then indicate the extent to which you agree or disagree by circling the number following each statement. The numbers and their meanings are indicated below.

If you agree strongly: circle +3
If you agree somewhat: circle +2
If you agree slightly: circle +1

If you disagree slightly: circle -1
If you disagree somewhat: circle -2
If you disagree strongly: circle -3

First impressions are usually best. Read each statement, decide if you agree or disagree and the strength of your opinion, and then circle the appropriate number.

GIVE YOUR OPINION ON EVERY STATEMENT

If you find that the numbers to be used in answering do not adequately reflect your opinion, use the one that is closest to the way you feel. Thank you.

	Strongly disagree	Disagree somewhat	Slightly disagree	Slightly agree	Agree somewhat	Strongly agree
1. Whether or not I get to be leader depends mostly on my ability.	-3	-2	-1	+1	+2	+3
2. To a great extent my life is controlled by accidental happenings.	-3	-2	-1	+1	+2	+3
3. I feel like what happens in my life is mostly determined by powerful people.	-3	-2	-1	+1	+2	+3
4. Whether or not I get into a car accident depends mostly on how good a driver I am.	-3	-2	-1	+1	+2	+3
5. When I make plans, I am almost certain to make them work.	-3	-2	-1	+1	+2	+3
6. Often there is no chance of protecting my personal interests from bad luck happenings.	-3	-2	-1	+1	+2	+3
7. When I get what I want, it's usually because I'm lucky.	-3	-2	-1	+1	+2	+3
8. Although I might have good ability, I will not be given leadership responsibility without appealing to those in positions of power.	-3	-2	-1	+1	+2	+3
9. How many friends I have depends on how nice a person I am.	-3	-2	-1	+1	+2	+3
10. I have often found that what is going to happen will happen.	-3	-2	-1	+1	+2	+3
11. My life is chiefly controlled by powerful others.	-3	-2	-1	+1	+2	+3
12. Whether or not I get into a car accident is mostly a matter of luck.	-3	-2	-1	+1	+2	+3

	Strongly disagree	Disagree somewhat	Slightly disagree	Slightly agree	Agree somewhat	Strongly agree
13. People like myself have very little chance of protecting our personal interests when they conflict with those of strong pressure groups.	-3	-2	-1	+1	+2	+3
14. It's not always wise for me to plan too far ahead because many things turn out to be a matter of good or bad fortune.	-3	-2	-1	+1	+2	+3
15. Getting what I want requires pleasing those people above me.	-3	-2	-1	+1	+2	+3
16. Whether or not I get to be a leader depends on whether I'm lucky enough to be in the right place at the right time.	-3	-2	-1	+1	+2	+3
17. If important people were to decide they didn't like me, I probably wouldn't make many friends.	-3	-2	-1	+1	+2	+3
18. I can pretty much determine what will happen in my life.	-3	-2	-1	+1	+2	+3
19. I am usually able to protect my personal interests.	-3	-2	-1	+1	+2	+3
20. Whether or not I get into a car accident depends mostly on the other driver.	-3	-2	-1	+1	+2	+3
21. When I get what I want, it's usually because I worked hard for it.	-3	-2	-1	+1	+2	+3
22. In order to have my plans work, I make sure that they fit in with the desires of people who have power over me.	-3	-2	-1	+1	+2	+3
23. My life is determined by my own actions.	-3	-2	-1	+1	+2	+3
24. It's chiefly a matter of fate whether or not I have a few friends or many friends.	-3	-2	-1	+1	+2	+3

Appendix E

PART 2

This questionnaire is designed to find out how different people view their thinking and their behaviour. A statement may range from very characteristic of you to very uncharacteristic of you.

There are no right or wrong answers. We simply want to know how you feel each statement applies to you.

Please answer every item, and circle only one answer for each item. Use the following code to indicate whether a statement describes your thinking or behaviour:

-3   very uncharacteristic of me, extremely undescriptive

-2   rather uncharacteristic of me, quite undescriptive

-1   somewhat uncharacteristic of me, slightly undescriptive

+1   somewhat characteristic of me, slightly descriptive

+2   rather characteristic of me, quite descriptive

+3   very characteristic of me, extremely descriptive

---

1.   When I do a boring job I think about the less boring parts of the job and about the reward I will receive when I finish.   -3   -2   -1   +1   +2   +3

2.   When I have to do something that makes me anxious, I try to visualise how I will overcome my anxiety while doing it.   -3   -2   -1   +1   +2   +3

3.   By changing my way of thinking, I am often able to change my feelings about almost anything.   -3   -2   -1   +1   +2   +3

4.   I often find it difficult to overcome my feelings of nervousness and tension without outside help.   -3   -2   -1   +1   +2   +3

5.   When I am feeling depressed, I try to think about pleasant events.   -3   -2   -1   +1   +2   +3

6.   I can not help thinking about mistakes I made.   -3   -2   -1   +1   +2   +3

CONTINUE TO THE NEXT PAGE

7. When I am faced with a difficult problem, I try to approach it in a systematic way.

   -3   -2   -1   +1   +2   +3

8. I usually do what I'm supposed to do more quickly when someone is pressuring me.

   -3   -2   -1   +1   +2   +3

9. When I am faced with a difficult decision, I prefer to postpone it even if I have all the facts.

   -3   -2   -1   +1   +2   +3

10. When I have difficulty concentrating on my reading, I look for ways to increase my concentration.

   -3   -2   -1   +1   +2   +3

11. When I plan to work, I remove everything that is not relevant to my work.

   -3   -2   -1   +1   +2   +3

12. When I try to get rid of a bad habit, I first try to find out all the reasons why I have the habit.

   -3   -2   -1   +1   +2   +3

13. When an unpleasant thought is bothering me, I try to think about something pleasant.

   -3   -2   -1   +1   +2   +3

14. If I smoked two packs of cigarettes a day, I would need outside help to stop smoking.

   -3   -2   -1   +1   +2   +3

15. When I feel down, I try to act cheerful so that my mood will change.

   -3   -2   -1   +1   +2   +3

16. If I carried the pills with me, I would take a tranquilliser whenever I felt tense and nervous.

   -3   -2   -1   +1   +2   +3

17. When I am depressed, I try to keep myself busy with things I like.

   -3   -2   -1   +1   +2   +3

18. I tend to postpone unpleasant tasks even if I could perform them immediately.

   -3   -2   -1   +1   +2   +3

19. I need outside help to get rid of some of my bad habits.

   -3   -2   -1   +1   +2   +3

20. When I find it difficult to settle down and do a task, I look for ways to help me settle down.

   -3   -2   -1   +1   +2   +3

21. Although it makes me feel bad, I can not help thinking about all sorts of possible catastrophes.

   -3   -2   -1   +1   +2   +3

22. I prefer to finish a job that I have to do before I start doing things I really like. -3 -2 -1 +1 +2 +3

23. When I feel physical pain, I try not to think about it. -3 -2 -1 +1 +2 +3

24. My self-esteem increases when I am able to overcome a bad habit. -3 -2 -1 +1 +2 +3

25. To overcome bad feelings that accompany failure, I often tell myself that it is not catastrophic and I can do something about it. -3 -2 -1 +1 +2 +3

26. When I feel that I am too impulsive, I tell myself to stop and think before I do anything. -3 -2 -1 +1 +2 +3

27. Even when I am terribly angry at someone, I consider my actions very carefully. -3 -2 -1 +1 +2 +3

28. Facing the need to make a decision, I usually find out all the alternatives instead of deciding quickly and spontaneously. -3 -2 -1 +1 +2 +3

29. Usually, I first do the things I really like to do even if there are more urgent things to do. -3 -2 -1 +1 +2 +3

30. When I realise that I am going to be unavoidably late for an important meeting, I tell myself to keep calm. -3 -2 -1 +1 +2 +3

31. When I feel pain in my body, I try to divert my thoughts from it. -3 -2 -1 +1 +2 +3

32. When I am faced with a number of things to do, I usually plan my work. -3 -2 -1 +1 +2 +3

33. When I am short of money, I decide to record all my expenses in order to budget more carefully in the future. -3 -2 -1 +1 +2 +3

34. If I find it difficult to concentrate on a task, I divide it into smaller segments. -3 -2 -1 +1 +2 +3

35. Quite often, I can not overcome unpleasant thoughts that bother me. -3 -2 -1 +1 +2 +3

36. When I am hungry and have no opportunity to eat, I try to divert my thoughts from my stomach or try to image that I am satisfied. -3 -2 -1 +1 +2 +3

PART 5

Has this stressful event happen to you at any time during this academic year? If it has, how stressful was it?

Please write the appropriate number on the space for each item using the following code.

did not happen 0

happened, but was not at all stressful 1

happened, and was slightly stressful 2

happened, and was moderately stressful 3

happened, and was fairly stressful 4

happened, and was extremely stressful 5

— Death (family member or friend)

— Had a lot of tests *

— Finals week*

— Applying to Graduate School*

— Victim of a crime

— Assignments in all classes due the same day*

— Breaking up with boy-/girlfriend

— Found out boy-/girlfriend cheated on you

— Lots of deadlines to meet

— Property stolen

— You have a hard upcoming week

— Lost something (especially wallet)

— Went into a test unprepared*

— Death of a pet

— Did worse than expected on test*

— Had an interview

— Had projects, research papers due*

— Did badly on a test*

— Parents getting divorce

— Dependent on other people

— Having roommate conflicts

— Car/bike broke down, flat tire, etc.

— Got a traffic ticket

— Missed your period and waiting

— Coping with addictions

— Thoughts about future

— Lack of money

— Dealt with incompetence at the Registrar's office

— Thought about unfinished work

— No sleep

— Sick, injury

— Had a class presentation*

— Applying for a job

— Fought with boy-/girlfriend

— Working while in school*

— Arguments, conflict of values with friends

— Bothered by having no social support of family

— Performed poorly at a task

— Can't finish everything you needed to do

— Heard bad news

— Had confrontation with an authority figure

— Maintaining a long distance boy-/girlfriend

— Crammed for a test*

— Feel unorganised

— Trying to decided on major*

— Feel isolated

— Parents controlling with money

— Couldn't find a parking space

— Noise disturbed you while trying to study*

— Someone borrowed something without your permission

— Had to ask for money

— Ran out of typewriter ribbon while typing*

— Erratic schedule

— Can't understand your professor*

— Trying to get into your major or college*

— Registration for classes*

— Stayed up late writing a paper

— Someone you expected to call did not

— Someone broke a promise

— Can't concentrate

— Someone did something again did they knew annoyed you

— Living with boy-/girlfriend

— Felt need for transportation

— Bad haircut today

— Job requirements changed

— No time to eat

— Felt some peer pressure

— You have a hangover

— Problems with your computer

— Problem getting home from bar when drunk

— Used a fake I.D.

— No sex in awhile

— Someone cut ahead of you in line

— Bank account didn't balance

— Visit from a relative and entertaining them

— Decision to have sex on your mind

— Talked with a professor*

— Change of environment (New doctor, dentist, etc..)

— Exposed to upsetting TV show, book or movie

— Got to class late*

— Holiday

— Sat through a boring class*

— Favourite sporting team lost

* Academic stress items. Only these 20 items related with academic area were used to measure academic stress.

Appendix G

CONSENT FORM TO PARTICIPATE IN RESEARCH AT THE UNIVERSITY OF WOLLONGONG

Research Title

<u>Academic Stress</u>

<u>Researcher</u>: Ms. Serap Akgun

This research project is being conducted as part of a doctoral thesis in psychology supervised by Assoc. Prof. Mark Anshel in the department of psychology at the University of Wollongong. The purpose of the study is to examine the effect of psychological and situational factors on academic stress among University of Wollongong undergraduate students. As a participant, you will be asked to answer two questionnaires which ascertain certain psychological dispositions that relate to stress. All information collected will be kept strictly confidential for research purposes. You will be free to withdraw from the research project at any time without penalty.

If you have any enquires regarding the conduct of the research please contact the Secretary of the University of Wollongong Human Research Ethics Committee on (042) 214457.

My signature indicates an understanding that the data collected will be used only for research purposes, and I consent for the data to be used in that manner. I agree to participate in this study.

Signature: _____   Date: ..../........./.........

Appendix H

To the subjects of the research,

The purpose of the study is to examine the effect of psychological and situational factors on academic stress. Please answer every question as honestly as possible. There are no right or wrong answers. Your answers will be kept confidential for the research.

Thanks very much for your help and time.

Serap Akgun
Doctoral student
Department of Psychology

Please answer all of the questions below.

1) Gender: Male _____   Female _____

2) Age: _____

3) Year of study: 1st _____   2nd _____   3th _____   4th _____

4) Department _____

CONTINUE ON THE OTHER SIDE

Appendix I

Imagine that in one week's time you have to sit an examination.

Please indicate the extent to which your feelings are reflected in each of these statements. Please circle the single most appropriate number corresponding to the following scale.

1	2	3	4	5
Not at all	Slightly	Moderately	Considerably	Extremely

1) This situation is beyond my ability to

   deal effectively with it. _____ 1 2 3 4 5

2) I perceive this situation as stressful. ___ 1 2 3 4 5

3) This situation creates tension in me ___ 1 2 3 4 5

4) I can overcome this stressful situation. _ 1 2 3 4 5

Note. Perceived stress was measured by questions 2 and 3.
Confidence was measured by questions 1 (reverse scoring) and 4.

CONTINUE ON THE OTHER SIDE

When you have an exam in one week and feel stressed, what are your thoughts and actions?

Please keep this examination situation clearly in mind. Read each statement carefully and indicate, by circling the appropriate category, to what extent you use these thoughts or actions in this stressful situation. Please respond to each item.

	Does not apply or not used	Used some-what	Used quite a bit	Used a great deal
1. I just concentrate on what I have to do next - the next step. _____	0	1	2	3
2. I try to analyse the problem in order to understand it better. _____	0	1	2	3
3. I turn to work or another activity to take my mind off things._____	0	1	2	3
4. I feel that time would make a difference- the only thing is to wait.__	0	1	2	3
5. I bargain or compromise to get something positive from the situation.	0	1	2	3
6. I do something that I don't think would work but at least I am doing something. _____	0	1	2	3
7. I try to get the person responsible to change his or her mind._____	0	1	2	3
8. I talk to someone to find out more about the situation. _____	0	1	2	3

9. I criticise or lecture myself. _____	0	1	2	3
10. I try not to burn my bridges, but leave things open somewhat. _____	0	1	2	3
11. I hope for a miracle. _____	0	1	2	3
12. I go along with fate; sometimes I just have bad luck. _____	0	1	2	3
13. I go on as if nothing has happened._	0	1	2	3
14. I try to keep my feelings to myself.__	0	1	2	3
15. I look for the silver lining, so to speak; I try to look on the bright side of things. _____	0	1	2	3
16. I sleep more than usual. _____	0	1	2	3
17. I express anger to the person(s) who caused the problem. _____	0	1	2	3
18. I accept sympathy and understanding from someone. _____	0	1	2	3
19. I tell myself things that help me feel better. _____	0	1	2	3
20. I am inspired to do something creative about the problem. _____	0	1	2	3
21. I try to forget the whole thing. _____	0	1	2	3
22. I get professional help. _____	0	1	2	3
23. I change or grow as a person. _____	0	1	2	3
24. I wait to see what will happen before doing anything. _____	0	1	2	3
25. I apologise or do something to make up. _____	0	1	2	3
26. I make a plan of action and follow it._	0	1	2	3

27. I accept the next best thing to what
I want. _____ 0   1   2   3

28. I let my feelings out somehow. _____ 0   1   2   3

29. I realise that I have brought the
problem on myself. _____ 0   1   2   3

30. I come out of the experience better
than when I go in. _____ 0   1   2   3

31. I talk to someone who can do
something concrete about the
problem. _____ 0   1   2   3

32. I try to get away from it for a while
by resting or taking a vacation. ____ 0   1   2   3

33. I try to make myself feel better by
eating, drinking, smoking, using
drugs or medications etc. _____ 0   1   2   3

34. I take a big chance or do something
very risky to solve the problem. ____ 0   1   2   3

35. I try not to act too hastily or follow
my first hunch. _____ 0   1   2   3

36. I find new faith. _____ 0   1   2   3

37. I maintain my pride and keep a stiff
upper lip. _____ 0   1   2   3

38. I rediscover what is important in life. 0   1   2   3

39. I change something so things will
turn out all right. _____ 0   1   2   3

40. I generally avoid being with people. 0   1   2   3

41. I don't let it get to me; I refuse to
think too much about it. _____ 0   1   2   3

42. I ask advice from a relative or friend
   I respect. _____   0   1   2   3

43. I keep others from knowing how bad
   things are._____   0   1   2   3

44. I make light of the situation; I refuse
   to get too serious about it. _____   0   1   2   3

45. I talk to someone about how I am
   feeling. _____   0   1   2   3

46. I stand my ground and fight for
   what I want. _____   0   1   2   3

47. I take it out on other people. _____   0   1   2   3

48. I draw on my past experiences; I was
   in a similar situation before. _____   0   1   2   3

49. I know what has to be done, so I
   double my efforts to make things
   work._____   0   1   2   3

50. I refuse to believe that it has
   happened. _____   0   1   2   3

51. I promise my self that things will be
   different next time. _____   0   1   2   3

52. I come up with a couple of different
   solutions to the problem. _____   0   1   2   3

53. I accept the situation since nothing
   can be done. _____   0   1   2   3

54. I try to keep my feelings about the
   problem from interfering with other
   things._____   0   1   2   3

55. I wish that I could change what has happened or how I feel. _____   0   1   2   3

56. I change something about myself. __   0   1   2   3

57. I daydream or imagine a better time or place than the one I am in. _____   0   1   2   3

58. I wish that the situation would go away or somehow be over with. _____   0   1   2   3

59. I have fantasies or wishes about how things will turn out. _____   0   1   2   3

60. I pray. _____   0   1   2   3

61. I prepare myself for the worst. _____   0   1   2   3

62. I go over in my mind what I will say or do. _____   0   1   2   3

63. I think about how a person I admire would handle this situation and use that as a model. _____   0   1   2   3

64. I try to see things from the other person's point of view. _____   0   1   2   3

65. I remind myself how much worse things could be. _____   0   1   2   3

66. I jog or exercise. _____   0   1   2   3

Appendix K

Imagine that you have just learnt that your recent exam result is unsatisfactory for you?

Please indicate the extent to which your feelings are reflected in each of these statements. Please circle the single most appropriate number corresponding to the following scale.
Please indicate the extent to which your feelings are reflected in each of these statements. Please circle the single most appropriate number corresponding to the following scale.

1	2	3	4	5
Not at all	Slightly	Moderately	Considerably	Extremely

1) This situation is beyond my ability to

    deal effectively with it. _____ 1 2 3 4 5

2) I perceive this situation as stressful. ___ 1 2 3 4 5

3) This situation creates tension in me ___ 1 2 3 4 5

4) I can overcome this stressful situation. _ 1 2 3 4 5

Appendix L

When you have an unsatisfactory exam result and feel stressed, what are your thoughts and actions?

Please keep this unsatisfactory situation clearly in mind. Read each statement carefully and indicate, by circling the appropriate category, to what extent you use these thoughts or actions in this stressful situation. Please respond to each item.

	Does not apply or not used	Used some-what	Used quite a bit	Used a great deal
1. I just concentrate on what I have to do next - the next step. _____	0	1	2	3
2. I try to analyse the problem in order to understand it better. _____	0	1	2	3
3. I turn to work or another activity to take my mind off things._____	0	1	2	3
4. I feel that time would make a difference- the only thing is to wait.___	0	1	2	3
5. I bargain or compromise to get something positive from the situation.	0	1	2	3
6. I do something that I don't think would work but at least I am doing something. _____	0	1	2	3
7. I try to get the person responsible to change his or her mind._____	0	1	2	3
8. I talk to someone to find out more about the situation. _____	0	1	2	3

Item	0	1	2	3
9. I criticise or lecture myself. _____	0	1	2	3
10. I try not to burn my bridges, but leave things open somewhat. _____	0	1	2	3
11. I hope for a miracle. _____	0	1	2	3
12. I go along with fate; sometimes I just have bad luck. _____	0	1	2	3
13. I go on as if nothing has happened._	0	1	2	3
14. I try to keep my feelings to myself.__	0	1	2	3
15. I look for the silver lining, so to speak; I try to look on the bright side of things. _____	0	1	2	3
16. I sleep more than usual. _____	0	1	2	3
17. I express anger to the person(s) who caused the problem. _____	0	1	2	3
18. I accept sympathy and understanding from someone. _____	0	1	2	3
19. I tell myself things that help me feel better. _____	0	1	2	3
20. I am inspired to do something creative about the problem. _____	0	1	2	3
21. I try to forget the whole thing. _____	0	1	2	3
22. I get professional help. _____	0	1	2	3
23. I change or grow as a person. _____	0	1	2	3
24. I wait to see what will happen before doing anything. _____	0	1	2	3
25. I apologise or do something to make up. _____	0	1	2	3
26. I make a plan of action and follow it._	0	1	2	3

27. I accept the next best thing to what I want. _____ 0 1 2 3

28. I let my feelings out somehow. _____ 0 1 2 3

29. I realise that I have brought the problem on myself. _____ 0 1 2 3

30. I come out of the experience better than when I go in. _____ 0 1 2 3

31. I talk to someone who can do something concrete about the problem. _____ 0 1 2 3

32. I try to get away from it for a while by resting or taking a vacation. _____ 0 1 2 3

33. I try to make myself feel better by eating, drinking, smoking, using drugs or medications etc. _____ 0 1 2 3

34. I take a big chance or do something very risky to solve the problem. _____ 0 1 2 3

35. I try not to act too hastily or follow my first hunch. _____ 0 1 2 3

36. I find new faith. _____ 0 1 2 3

37. I maintain my pride and keep a stiff upper lip. _____ 0 1 2 3

38. I rediscover what is important in life. 0 1 2 3

39. I change something so things will turn out all right. _____ 0 1 2 3

40. I generally avoid being with people. 0 1 2 3

41. I don't let it get to me; I refuse to think too much about it. _____ 0 1 2 3

42. I ask advice from a relative or friend I respect. _____ 0   1   2   3

43. I keep others from knowing how bad things are._____ 0   1   2   3

44. I make light of the situation; I refuse to get too serious about it. _____ 0   1   2   3

45. I talk to someone about how I am feeling._____ 0   1   2   3

46. I stand my ground and fight for what I want. _____ 0   1   2   3

47. I take it out on other people. _____ 0   1   2   3

48. I draw on my past experiences; I was in a similar situation before. _____ 0   1   2   3

49. I know what has to be done, so I double my efforts to make things work._____ 0   1   2   3

50. I refuse to believe that it has happened. _____ 0   1   2   3

51. I promise my self that things will be different next time. _____ 0   1   2   3

52. I come up with a couple of different solutions to the problem. _____ 0   1   2   3

53. I accept the situation since nothing can be done. _____ 0   1   2   3

54. I try to keep my feelings about the problem from interfering with other things. _____ 0   1   2   3

55. I wish that I could change what has happened or how I feel. _____	0	1	2	3
56. I change something about myself. __	0	1	2	3
57. I daydream or imagine a better time or place than the one I am in. _____	0	1	2	3
58. I wish that the situation would go away or somehow be over with. _____	0	1	2	3
59. I have fantasies or wishes about how things will turn out. _____	0	1	2	3
60. I pray. _____	0	1	2	3
61. I prepare myself for the worst. _____	0	1	2	3
62. I go over in my mind what I will say or do. _____	0	1	2	3
63. I think about how a person I admire would handle this situation and use that as a model. _____	0	1	2	3
64. I try to see things from the other person's point of view. _____	0	1	2	3
65. I remind myself how much worse things could be. _____	0	1	2	3
66. I jog or exercise. _____	0	1	2	3

Appendix M

Imagine that in one week's time you have to sit an examination.

Please indicate the extent to which your feelings are reflected in each of these statements. Please circle the single most appropriate number corresponding to the following scale.

1	2	3	4	5
Not at all	Slightly	Moderately	Considerably	Extremely

1) I feel anxious about this situation ._____   1   2   3   4   5

2) This situation is beyond my ability to
   deal effectively with it. _____   1   2   3   4   5

3) I perceive this situation as stressful. _____   1   2   3   4   5

4) This situation creates tension in me _____   1   2   3   4   5

5) I perceive this situation as challenging. _____   1   2   3   4   5

6) I feel confident in this situation. _____   1   2   3   4   5

7) I perceive this situation as threatening. _____   1   2   3   4   5

8) I can overcome this stressful situation. _____   1   2   3   4   5

9) I perceive this situation as a loss. _____   1   2   3   4   5

10) I am worried about this situation. _____   1   2   3   4   5

11) I feel angry in this situation. _____   1   2   3   4   5

12) I feel eager for this situation. _____   1   2   3   4   5

13) I feel fearful of this situation. _____   1   2   3   4   5

14) I feel hopeful about this situation. _____   1   2   3   4   5

15) I feel sad about this situation. _____   1   2   3   4   5

16) I feel disappointed in this situation. _____   1   2   3   4   5

17) I feel guilty about this situation. _____   1   2   3   4   5

18) I feel disgusted with this situation. _____   1   2   3   4   5

19) I feel exhilarated by this situation. _____   1   2   3   4   5

20) I feel pleased with this situation. _____   1   2   3   4   5

21) I feel happy with this situation. _____   1   2   3   4   5

22) I feel relieved about this situation. _____   1   2   3   4   5

Note. Stress was measured by questions 3 and 4

Confidence was measured by questions 2 (reverse scoring) and 8

Threat appraisal was measyred by questions 1, 7, 10, and 13.

Challenge appraisal was measured by questions 5, 6, 12, and 14.

Harm appraisal was measured by questions 9, 11,15, 16, and 17.

Benefit Appraisal was measured by questions 19, 20, 21 and 22.

Appendix N

When you have an exam in one week and feel stressed, what are your thoughts and actions?

Please keep this examination situation clearly in mind. Read each statement carefully and indicate, by circling the appropriate category, to what extent you use these thoughts or actions in this stressful situation. Please respond to each item.

	Does not apply or not used	Used some- what	Used quite a bit	Used a great deal
1. I just concentrate on what I have to do next - the next step. _____	0	1	2	3
2. I do something that I don't think would work but at least I am doing something. _____	0	1	2	3
3. I try to get the person responsible to change his or her mind._____	0	1	2	3
4. I talk to someone to find out more about the situation. _____	0	1	2	3
5. I criticise or lecture myself. _____	0	1	2	3
6. I try not to burn my bridges, but leave things open somewhat. _____	0	1	2	3
7. I hope for a miracle. _____	0	1	2	3
8. I go along with fate; sometimes I just have bad luck. _____	0	1	2	3
9. I go on as if nothing has happened._____	0	1	2	3

10. I try to keep my feelings to myself._____	0	1	2	3

11. I look for the silver lining, so to

    speak; I try to look on the bright side

of things. _____	0	1	2	3
12. I sleep more than usual. _____	0	1	2	3

13. I express anger to the person(s) who

caused the problem. _____	0	1	2	3

14. I accept sympathy and

understanding from someone. _____	0	1	2	3

15. I am inspired to do something

creative about the problem. _____	0	1	2	3
16. I try to forget the whole thing. _____	0	1	2	3
17. I get professional help. _____	0	1	2	3
18. I change or grow as a person. _____	0	1	2	3

19. I apologise or do something to

make up. _____	0	1	2	3
20. I make a plan of action and follow it._____	0	1	2	3
21. I let my feelings out somehow. _____	0	1	2	3

22. I realise that I have brought the

problem on myself. _____	0	1	2	3

23. I come out of the experience better

than when I go in. _____	0	1	2	3

24. I talk to someone who can do

    something concrete about the

problem. _____	0	1	2	3

25. I try to make myself feel better by eating, drinking, smoking, using drugs or medications etc. _____   0   1   2   3

26. I take a big chance or do something very risky to solve the problem. _____   0   1   2   3

27. I try not to act too hastily or follow my first hunch. _____   0   1   2   3

28. I find new faith. _____   0   1   2   3

29. I rediscover what is important in life. ___   0   1   2   3

30. I change something so things will turn out all right. _____   0   1   2   3

31. I generally avoid being with people. ___   0   1   2   3

32. I don't let it get to me; I refuse to think too much about it. _____   0   1   2   3

33. I ask advice from a relative or friend I respect. _____   0   1   2   3

34. I keep others from knowing how bad things are. _____   0   1   2   3

35. I make light of the situation; I refuse to get too serious about it. _____   0   1   2   3

36. I talk to someone about how I am feeling. _____   0   1   2   3

37. I stand my ground and fight for what I want. _____   0   1   2   3

38. I take it out on other people. _____   0   1   2   3

39. I draw on my past experiences; I was in a similar situation before. _____ 0   1   2   3

40. I know what has to be done, so I double my efforts to make things work. _____ 0   1   2   3

41. I refuse to believe that it has happened. _____ 0   1   2   3

42. I promise my self that things will be different next time. _____ 0   1   2   3

43. I come up with a couple of different solutions to the problem. _____ 0   1   2   3

44. I try to keep my feelings about the problem from interfering with other things. _____ 0   1   2   3

45. I change something about myself. _____ 0   1   2   3

46. I wish that the situation would go away or somehow be over with. _____ 0   1   2   3

47. I have fantasies or wishes about how things will turn out. _____ 0   1   2   3

48. I pray. _____ 0   1   2   3

49. I go over in my mind what I will say or do. _____ 0   1   2   3

50. I think about how a person I admire would handle this situation and use that as a model. _____ 0   1   2   3

CONTINUE ON THE OTHER SIDE

Situation 2

Imagine that you have had an exam recently and you have been waiting for the result, possibly being a pass or a fail marginally.

The same stress, confidence, and emotion scales were used (see Appendix M).

When you have had an exam recently and you have been waiting for the result, possibly a pass or a fail marginally, what are your thoughts and actions in this stressful situation?

The Ways of Coping Questionnaire was used (see Appendix N)

Situation3

Imagine that you have just learnt that your recent exam result is unsatisfactory for you?

The same stress, confidence, and emotion scales were used (see Appendix M).

When you have an unsatisfactory exam result and feel stressed, what are your thoughts and actions?

The Ways of Coping Questionnaire was used (see Appendix N)