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OVERCOMING ADVERSITY: THE PROTECTIVE ROLE OF LOCUS OF CONTROL, ATTRIBUTIONAL STYLE, AND SELF-EFFICACY, IN THE PROMOTION OF RESILIENCE

By

Mandy M.A. Gunby

A Thesis
Submitted to the Faculty of Graduate Studies and Research through the Department of Psychology in Partial Fulfillment of the Requirements for the Degree of Master of Arts at the University of Windsor

Windsor, Ontario, Canada
2002
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ABSTRACT

One main purpose of the present study was to investigate the ability of internal locus of control, optimistic attributorial style, and high self-efficacy to serve as protective factors, buffering the negative impact of life stressors (both number of negative life events and daily hassles) on current competence (overall, as well as in the academic, social, and emotional domains). Given that an examination of protective factors presupposes that life stressors actually constitute risk factors for maladjustment, another related purpose was to examine this relationship directly, to determine whether such an assumption is justified.

One central finding of the present study was that number of negative life events did not emerge as a significant predictor of current academic, social, or overall competence (i.e., not a significant risk factor for maladjustment in these domains) and was only a weak predictor of emotional competence. These findings may call into question the popular belief that the experience of major acute stressors will necessarily lead to maladjustment, except for in those few who seem to be "resilient."

In contrast, daily hassles emerged as a significant predictor of participants' academic, emotional, and total competence and was a better predictor of academic and emotional competence than any of the three possible moderators. Interestingly, daily hassles did not consistently emerge as a significant predictor of social competence.

The present results suggest that the influence of daily hassles may be greater than that of past life events. Thus, it may be more important to search for factors that promote resilience in the face of more minor, ongoing stressors.
Of the possible protective factors, self-efficacy, consistently emerged as a more powerful and consistent predictor of current competence than attributional style and locus of control, and was the best predictor of both social and overall competence. The beneficial effects of self-efficacy were independent of level of life stress and, thus, did not moderate the relationship between daily hassles and current competence. Locus of control and attributional style did serve as moderators in some competence domains, although not consistently, so their possible protective role was discussed in relation to each competence domain.
ACKNOWLEDGEMENTS

I would like to express my gratitude to the many people who have provided me with guidance and support through the various stages of this research project. Together their contributions, whether personal or professional, have made the successful completion of this research project possible.

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Lastly, I would like to thank my family, whose support, encouragement, and faith have and continue to be invaluable. They have been a source of both comfort and inspiration and have made many sacrifices so that I could pursue my goals and dreams. The successful completion of this research project is one of the many goals that my family has helped me to attain.
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CHAPTER I

INTRODUCTION

The manner in which a resilient individual overcomes adversity, was captured by Emerson (1841), who stated “like the wounded oyster, he mends his shell with pearl” (as cited in Higgins, 1994, p.25). Not only does this statement reflect the fascinating nature of resilience, it captures the idea that individuals can adapt well in the face of adversity and can potentially grow to be even stronger and more competent than they were previously, as a result of the adaptive way in which they cope with and learn from their experiences. This new field of research can serve to instill hope in those who have faced adversity themselves, as well as in those who work within the mental health field.

Historically, research has tended to focus on those individuals who failed to adjust adequately and the risk factors that contributed to their maladjustment (Mash & Dozois, 1996; Masten, Morison, Pellegrini, & Tellegen, 1992; Richters & Weintraub, 1992). Over the past four decades, however, researchers have come to see the value in studying those individuals who seem to adjust well, despite facing adversity (Kaplan, 1999). Through such research, a greater understanding of those factors contributing to successful adaptation can be gained. From there, research can explore how and why these factors are important and use this knowledge to develop more successful treatment and prevention programs, for individuals who are at risk.
Theoretical Framework

*Resilience*

*Defining Resilience*

Norman Garmezy, who has been referred to as the founder of contemporary resiliency research, first became interested in resilience through his work in the area of schizophrenia (Rolf, 1999). In an interview with Rolf, Garmezy discussed how he had come to see patients with schizophrenia, as fitting into two categories. The one group consisted of more chronic patients, with histories of low levels of competence and longer stays in in-patient facilities. The other group consisted of those schizophrenics who were much more competent, had short-term in-patient stays, and showed a greater level of independent living (as cited in Rolf, 1999). Garmezy became interested in understanding the role of competence as a buffer against psychopathology and thus began his research into the development of competence in children. When asked to define resilience and differentiate it from competence, Garmezy gave the following statement:

I think “competence” is really the term for a variety of adaptive behaviours and I think that resilience is manifest competence despite exposure to significant stressors. It seems to me that you can’t talk about resilience in the absence of stress. The point that I would like to make about stress is the critical significance of cumulative stressors. I think this is the most important element (as cited in Rolf, 1999, pp. 7-8).

Not all researchers agree with Garmezy’s definition of resilience and, currently, a great deal of debate exists in the literature, as to how resilience should be conceptualized. One prominent controversy surrounds the relationship between resilience and outcome
Kaplan, 1999). Kaplan discussed the emergence of two main conceptualizations of resilience, based on differing views of the relationship of resilience to outcome.

One conceptualization, which was described by Garmezy (as cited in Rolf, 1999), holds that resilience is synonymous with the achievement of positive adaptation in the face of adversity (Rolf, 1999; Rutter, 1992). According to this definition, resilience is one possible outcome, with the alternative outcome being the failure to adapt adequately in the face of such adversity. Even within this school of thought, researchers have different views regarding what it means to have a resilient outcome. Some researchers, especially within the study of childhood resilience, view resilience as “the positive end of the distribution of developmental outcomes in a sample of high-risk individuals” (Egeland, Carlson, & Sroufe, 1993, p. 517). Egeland et al. argue, however, that the achievement of resilience does not represent a static state or end point. Instead, they point out that these individuals are judged to be resilient at one point in time. Based on their 18-year longitudinal study of high-risk families, Egeland et al. described resilience, alternatively, as “the capacity for successful adaptation, positive functioning, or competence” (p. 517) and asserted that “definitions... of resilience reflect adaptive functioning across time rather than one-time assessments” (pp.525-526). Those who support this view of resilience acknowledge that, although a person may appear resilient at one point in time, current psychological adjustment does not translate directly onto future adjustment (Egeland et al.; Mrazek & Mrazek, 1987; Rutter, 1992).

A prominent, alternative, conceptualization sees resilience not as an outcome, but as an attribute, or collection of attributes, that act to decrease vulnerability to adversity. Thus resilience, in those who possess it, acts by moderating or buffering the impact of
negative life events on psychological adjustment (Kaplan, 1999). It has even been suggested that resilience could be viewed as a stable personality trait (Asendorpf & van Aken, 1999; Robins, John, Caspi, Moffitt, & Stouthamer-Loeber, 1996).

The way in which one conceptualizes resilience has important implications for research in the field. Whether one views resilience as an outcome, a process, or an attribute, and whether adversity is a necessary factor, will determine the types of questions that are asked and the way in which those questions are answered. For the purpose of the present study, resilience was conceptualized as the achievement of a positive outcome (based on current academic, social, emotional, and overall competence), despite adversity. Viewing resilience as an outcome falls in line with the interactive model of resilience (Luthar & Cushing, 1999) that was examined in the present study.

**Dimensions of Resilience**

Recent literature has begun to question whether resilience exists as a valid, unitary construct. Those in support of a process model of resilience have held that resilience varies across such things as context, time, and choice of assessment methods and measures (Kaplan, 1999; Luthar, 1993; Luthar, Doernberger, & Zigler, 1993). Luthar (1993) suggested that, because empirical research does not support the concept of resilience, as a valid, unitary construct, it should not be assessed as such. He suggested that, when an overall estimation of resiliency is needed, it could be assessed most accurately by attaining composite scores of resilience, that are based on assessments of multiple competence domains. This method is in contrast to some studies of childhood resilience, for instance, which infer such resilience through various measures of
competence in the school setting, without adequate attention being given to other domains (Luthar, 1993). Luthar also encouraged researchers to assess resiliency separately across domains and to be clear about the type of resilience that was being assessed (e.g., academic resilience, social resilience, or emotional resilience).

Often, researchers determine resilience based on assessment of overt, behavioural manifestations of competence. Research has begun to show, however, that when looking from the perspective of internalizing problems, individuals labelled as resilient (i.e., showing high overt competence despite life stress) may not differ significantly from those individuals classified as being vulnerable or incompetent and may show significantly more internalizing problems than those demonstrating high overt competence in the presence of low levels life stress (D’Imperio, Dubow, & Ippolito, 2000; Luthar, 1991; Luthar & Zigler, 1991). One might say that some individuals, though socially and academically competent, lack emotional competence and thus should not be considered emotionally resilient. Some researchers, however, consider resilience to be the overt manifestation of competence, regardless of the level of covert competence or maladjustment (Luthar, 1991; Luthar & Zigler, 1991). In any case, the field would benefit from further studies that, in addition to assessing overt competence, make an effort to assess emotional competence. In the present study, levels of academic, social, and emotional competence will be examined separately, in addition to an examination of overall competence, in order to assess the degree of consistency across these competence domains.
Risk Factors

According to Garmezy (as cited in Rolf, 1999) one cannot speak of resilience in the absence of adverse life events or chronic disadvantage. It is this adversity, after all, that acts as a risk factor, increasing the probability of future maladjustment. Without having faced such risk factors, one can only speculate about the level of resilience that a person might exhibit under adverse circumstances.

Types of Risk Factors

The factors that can make one vulnerable to psychopathology can be quite diverse in nature. In the literature, the negative circumstances that serve as risk factors for future pathology are classified along various dimensions. The following are three dimensions along which risk factors are often classified.

Chronic versus acute. One way in which risk factors can differ from one another is in their chronicity. At one end of the continuum are those acute stressors that are comprised of rather traumatic events (e.g., death of a loved one or a natural disaster), which may occur for only a moment in time. Their occurrence, nonetheless, may leave victims at risk for maladjustment. At the opposite end of the continuum are those stressors that are more chronic in nature, such as poverty. Acute and chronic risk factors are not independent, however, because many acute stressors may lead to an increase in chronic stressors (Lazarus, 1999). For instance, the death of a spouse may lead to changes in the socioeconomic status of the family.
The concept of daily hassles, which has been defined as "seemingly minor, though sometimes very disturbing, daily annoyances of life that can impair morale, social functioning, and health" (Lazarus, 1999, p. 146), has been and continues to be used in stress and resilience research, as a measure of the more chronic, day-to-day stressors that people face (Clark & Watson, 1991; Lazarus, 1984, 1999; Luthar, 1993). The measurement of daily hassles has been criticized in the literature, by some, who feel that it is confounded with measures of psychological distress, which are often used as outcome measures (Clark & Watson, 1991; Dohrenwend & Shrout, 1985; Kanner, Coyne, Schaefer, & Lazarus, 1981; Lazarus, 1984; Lazarus, Delongis, Folkman, & Gruen, 1985). In order to remedy the problem with this possible confounding, Kohn, Lafreniere, and Gurevich (1990) developed a hassles scale called the Inventory of College Students' Recent Life Experiences (ICSRLE), which has received support as a more "decontaminated" daily hassles measure (Kohn et al., 1990; Osman, Barrios, Longnecker, & Osman, 1994). For the purposes of this study, the ICSRLE was included as a measure of daily hassles.

*Proximal versus distal.* Another dimension, along which risk factors have been classified, is the degree to which the adversity or risk factor impacts psychological adjustment directly. Those risk factors that have a more direct impact have been referred to as proximal risk factors, whereas those risk factors that impact psychological adjustment more indirectly have been referred to as distal risk factors (Baldwin, Baldwin, & Cole, 1992; Kaplan, 1999). As Lazarus (1999) defined it,
the *proximal-distal* dimension refers to the ordering of various events in accordance with their personal relevance or psychological closeness—that is, their meaning for that person. It is the personal significance of what is happening, which is the *proximal* cause of a stress reaction (p. 55).

The distinction between proximal and distal risk is an important one. Although the probability that a proximal risk factor (e.g., parental neglect) will negatively impact adjustment is very high, the indirect influence of more distal risk factors (e.g., low socioeconomic status) on adjustment allows for intervening factors (e.g., social support) to lessen the impact of the risk, leading to a more benign outcome.

A child may belong to a group in which the probability for a negative outcome is quite high, but because the mediating variables are more favourable than one would expect from the probabilities associated with the distal variables, the child may actually be in a more favourable proximal environment than the distal variables would indicate (Baldwin et al., 1992, p. 258).

*Controllable versus uncontrollable.* Another important aspect to consider, when studying the impact of risk factors on adjustment, is the degree to which those risk factors are within an individual’s control. People are considered to have little control over certain events, such as the death of a family member or being robbed. Alternately, events such as failing a grade or spending time in jail are considered to be within an individual’s control, at least to some extent. Thus, while these stressors may serve as risk factors for later maladjustment, they may have also occurred as the result of maladjustment. The controllability of adverse life events is of particular importance in the study of resilience (Luthar & Cushing, 1999; Luthar & Zigler, 1991), where the outcome variable is usually current adjustment. The inclusion of controllable negative life events in resilience
research may superfluously inflate the correlation between risk and adaptation (Luthar & Cushing, 1999; Luthar & Zigler, 1991; Masten et al., 1988). Given the possible confounds between controllable negative life events and current adjustment, some researchers have chosen to include only uncontrollable negative life events on measures of risk (Garmezy et al., 1984; Luthar, 1991; Luthar, Doernberger, & Zigler, 1993; Luthar & Zigler, 1991; Masten et al., 1988; Tiet et al., 1998). In the present study, in order to obtain a more accurate estimate of the relationship between negative life events and current adjustment, only uncontrollable negative life events were included.

**Effects of Risk Factors on Outcome**

In order to study factors that increase resilience in those who have faced adversity, one makes the assumption that adverse life circumstances are negatively correlated with current levels of adjustment. Such correlations have been demonstrated through past research; however, these correlations have been low to moderate in degree (Kanner, Coyne, Schaefer, & Lazarus, 1981; Luthar & Cushing, 1999; Swearingen & Cohen, 1985). In the article “Ordinary Magic,” Masten (2001) spoke of the recent developments in the resilience literature, which suggests that resilience is not as rare as was once suspected, but is instead “a common phenomenon that results in most cases from the operation of basic human adaptational systems” (p. 227) and suggested that “if those systems are protected and in good working order, development is robust even in the face of severe adversity” (p. 227).

An important aspect of the current study was to determine the relationship between negative uncontrollable life events and current adjustment. In previous studies,
significant negative relationships have been found between negative life events and adjustment, even when controllable events have not been included in the analyses (Luthar, 1991; Luthar, Doernberger, & Zigler, 1993; Luthar & Zigler, 1991; Masten et al., 1988; Tiet et al., 1998). The present study also examined whether the correlation between risk and adjustment was consistent across domains of academic, social, emotional, and overall competence.

**Protective Factors**

**Defining Protective Factor**

Out of the study of risk and resilience, emerged the concept of protective factors. These protective factors are the attributes that act as buffers, protecting individuals who possess them, from the negative sequelae that may be associated with various life adversities.

Defining what constitutes a protective factor depends on the definition of resilience that is being used. When resilience is conceptualized as being an attribute or group of attributes that promote a positive outcome, then resilience is considered to be the protective factor (Kaplan, 1999). Alternatively, when resilience is conceptualized as the achievement of a positive outcome, protective factors serve as the variables that moderate the relationship between adversity and outcome, promoting increased resilience. It is the latter conceptualization that was used to define protective factors in the present study.

Another issue in defining what constitutes a protective factor involves the debate
over whether moderating variables, that promote a positive outcome independently of level of adversity, should be considered protective factors. Many researchers define protective factors as those attributes whose protective value is only seen under high-risk conditions (Cowan, Cowan, & Schultz, 1996; Garmezy as cited in Rolf, 1999; Jew, Green, & Kroger, 1999; Masten et al., 1988; Rutter, 1987). As Vaillant (1977) pointed out, "good psychological health becomes apparent only when the going gets tough" (as cited in Mrazek & Mrazek, 1987). According to this view, one could say that stress or risk acts as a catalyst that works to activate the buffering effect of an attribute that, under low stress conditions, remains dormant. Masten (1999) used the term "risk-activated protective factor" (p.286), to describe factors whose protective value is seen only under stressful conditions. Masten made an analogy between these "risk-activated" protective factors and airbags in cars. Giving a car accident as an example of a risk factor, Masten described how airbags are not functional or important under times of low stress, but can be triggered by a car accident, at which point their presence or absence becomes quite relevant.

Though some researchers feel that the term 'protective factor' should be reserved for those moderators that show an interaction with stress (Cowan, Cowan, & Schultz, 1996; Garmezy as cited in Rolf, 1999; Jew, Green, & Kroger, 1999; Masten et al., 1988; Rutter, 1987), other researchers hold that those variables that are equally beneficial across stress levels are also serving a protective function and, thus, their importance should not be trivialized (Luthar, 1993).

Luthar (1993) addressed the issue of inconsistent definitions of protective factors, by proposing that distinctions could be made in the literature, between four types of
significant protective effects. An examination of internal locus of control as a possible protective factor, for example, could demonstrate protective effects in one of four ways.

One possibility, which was actually found in a study by Nelson and Cohen (1983), is that an internal locus of control could be associated with better psychological adjustment, regardless of risk level. Thus, having an internal locus of control would be as beneficial for individuals who have had low levels of life adversity as for those who have had high levels of life adversity. According to an interactive model of protective factors, which holds that stress must be present in order to activate the factor’s protective functions, internal locus of control would not be considered to be a protective factor, based on this example (Masten et al., 1988; Rutter, 1987; Kaplan, 1999). Factors showing such independent beneficial effects have been referred to, in the literature, as “compensatory factors” (Garmezy, Masten, & Tellegen, 1984; Gest, Neemann, Hubbard, Masten, & Tellegen, 1993; Masten et al., 1988), “resource factors” (Conrad & Hammen, 1993; Garmezy, 1987; Tiet et al., 1998), or “ameliorative factors” (Kaplan, 1999). Often, however, researchers will identify moderating variables as protective factors on the sole basis of significant main effects, as may be the case in some studies of high-risk populations that do not include a low-risk reference group (Luthar, 1993; Luthar & Zigler, 1993). To reduce confusion in the literature, Luthar (1993) suggested that such overarching beneficial effects could be labelled “protective effects” (p. 447) and that protective effects that interact with stress could be more elaborately defined in one of three ways, given the type of interaction that is occurring.

Protective-stabilizing effects. In one possible type of interaction, using a locus of
control example once again, individuals with low levels of life adversity would show fairly high competence, regardless of whether they had internal locus of control. Given high levels of life adversity, however, individuals with internal locus of control would maintain the same competence levels, whereas those with external locus of control would demonstrate a significantly reduced level of competence. Luthar (1993) proposed that such effects could be referred to as “protective-stabilizing effects” (p. 446).

**Protective-enhancing effects.** In another type of interaction, the protective function of internal locus of control would again only be seen under high levels of adversity. Under such conditions, however, individuals would not maintain levels of competence that are comparable to those seen under low levels of adversity. Instead, they would “engage with stress” (Luthar, 1993, p. 447) and arrive at a level of competence that is superior to that seen at low levels of adversity. Luthar used the term “protective-enhancing effects” (p. 447) to describe such interactions.

**Protective/reactive effects.** The fourth type of protective process that Luthar (1993) referred to, would be the case where internal locus of control would promote increased competence under high and low levels of life adversity, but whose protective effects would not be as strong when life adversity was high. Luthar referred to this interaction pattern as “protective/reactive effects” (p. 447).

Such a framework for discriminating different types of protective effects seems logical, because it provides a consistent way to study and convey results about the protective value of certain variables. As well, it does not minimize the importance of
those variables that are advantageous in general, or the importance of those interactive protective factors that may be of particular interest to some researchers.

**Identifying Protective Factors**

Aside from the importance of defining what a protective factor is, one must also determine what factors have protective functions and why. Mrazek and Mrazek (1987), in an attempt to identify possible protective factors in childhood resilience, asserted that protective factors consist of both environmental factors and internal factors (e.g., personal attributes or skills), which are likely needed in conjunction, in order for resilience to develop. Mrazek and Mrazek identified seven “generic” environmental factors, which they felt had been well established in the literature. Those factors included (1) middle to upper class status; (2) high parental education; (3) no family history of psychopathology; (4) supportive family environment; (5) access to good health, educational, and social welfare services; (6) more than one caretaker; and (7) extended familial and extrafamilial emotional support (p.362). Mrazek and Mrazek also provided a list of 12 personal attributes, which were thought to foster resilience in maltreated children. Those factors included (1) rapid responsivity to danger; (2) precocious maturity; (3) dissociation of affect; (4) information seeking; (5) formation and utilization of relationships for survival; (6) positive projective anticipation; (7) decisive risk taking; (8) the conviction of being loved; (9) idealization of an aggressor’s competence; (10) cognitive restructuring of painful experiences; (11) altruism, and lastly, (12) optimism and hope, which Mrazek and Mrazek felt was “a more overriding characteristic than the preceding eleven” (p. 362). A more detailed review of these attributes can be found in Mrazek and Mrazek (p.
359-362). The authors felt that, although these factors promoted adaptation, they were not necessarily desirable characteristics. They added that "some of the very traits that helped him or her survive childhood are likely to develop into maladaptive characterological problems in adulthood" (p. 365). As an example, Mrazek and Mrazek suggested that a person's belief that he or she is worthy of love and is loved by someone, may be protective during childhood, but could possibly lead to a "defensive narcissism" (p.365) later in life.

**Attributional Style**

Attributional style, which has also been referred to in the literature as explanatory style (Burns & Seligman, 1989; Burns & Seligman, 1993; Peterson, Maier, & Seligman, 1993), is a construct that represents the inferences that a person tends to make, regarding the causes of events in his or her life (Abramson, Seligman, & Teasdale, 1978). Such inferences are made along the three theoretical dimensions that are embodied within the concept of attributional style (Burns & Seligman, 1991; Chorpita & Barlow, 1998). First, along the internal-external dimension, attributions are made with respect to the degree to which an event was perceived to have been caused by internal versus external forces. An individual who fails an exam, for instance, may attribute the failure to his or her poor study habits (an internal attribution), or to the failure of the professor to explain the material adequately (an external attribution). Next, attributions along the globality-specificity dimension reflect the degree to which one perceives an event as situation-specific or global in nature. Along this dimension, the failure of an exam may be attributed to an inadequate understanding of the material covered on the test (a situation-
specific attribution) or to a lack of intelligence (a more generalized, or global attribution). Lastly, along the stable-unstable dimension, attributions are made in regard to the consistency of a given explanation over time. Along this dimension, one might feel that, although failing a test is disappointing, it is only one test and that he or she will do better on the next test (an unstable attribution) or one might feel that he or she will never succeed (a stable attribution; Burns & Seligman, 1991; Peterson et al., 1993). Based on the type of inferences that an individual tends to make in each of the three dimensions, an individual’s overall attributional style may be described as optimistic or pessimistic (Burns & Seligman, 1991). In some situations, little debate exists with regard to the cause of the event, in which case, the individual’s attributional style is not particularly relevant. When there is uncertainty surrounding the cause, however, Peterson et al. believe that “an individual’s habitual way of explaining events takes the lead, because reality does not encumber it” (p. 151).

The concept of attributional style emerged out of the learned helplessness theory of depression (Seligman, 1975) and the reformulated learned helplessness theory of depression (Abramson, Seligman, & Teasdale, 1978). According to the reformulated theory, an individual’s vulnerability to or resistance from depression lies in the habitual way in which that individual interprets the negative events in his or her life (Burns & Seligman, 1991). The theory postulates that an individual who tends attribute events to factors that are internal, global, and stable are more likely to develop a sense of helplessness and, thus, depression (Burns & Seligman, 1989). Using the failure of an exam, once again as an example, a depressed individual would be more likely to blame himself or herself for the failed test, feel like a failure in general, and believe that he or
she will never be successful. Through empirical research, the correlation between internal, global, stable attributions and depression has been well supported, as was demonstrated by Sweeney, Anderson, and Bailey (1986), in a meta-analytic review of 104 studies. Burns and Seligman have also demonstrated that attributional style for negative events, but not positive events, remains fairly stable across the lifespan (Burns & Seligman, 1989). Burns and Seligman examined Attributional style for positive and negative life events over 50 years and found that while attributional style for negative events showed good stability across many years, with a correlation of .54, significant stability was not demonstrated for positive events. Sweeney et al. also found smaller effect sizes for positive events than for negative events in their meta-analytic review of past research.

Locus of Control

Locus of control is a construct that represents the general perception people hold regarding the amount of control they have over events in their lives (Rotter, 1966). This general perception of control varies, along a single dimension, from internal control to external control. Having emerged out of Rotter’s (1954) social learning theory, development of internal versus external locus of control was theorized to be the product of an individual’s history of reinforcement (Rotter, 1966). Specifically, Rotter proposed that the relationship that an individual has perceived between his or her own behaviour and various past life events, leads to the development of “generalized expectancies” about the effect that one’s behaviour can have on future events. People who have a general perception that they have control over future events are said to have internal locus
of control. Such individuals are thought to engage with the world more actively and show a greater sense of competence than individuals who have external locus of control. Conversely, these externals tend to engage more passively with the world, as they feel powerless to cause change, in a world that they perceive as being outside of their control (Lefcourt & Davidson-Katz, 1991).

A theoretical link between locus of control and depression has also been made. Seligman (1975) commented that "like the dog, cat, rat, fish, and non-human primates, when a man is faced with noxious events that he cannot control, his motivation to respond is drastically undermined" (p. 30). Given that people with external locus of control tend to perceive events as uncontrollable, they are at an increased risk of experiencing helplessness (Seligman, 1975). Benassi et al. (1988) conducted a meta-analysis, investigating the relationship between locus of control and depression, and found strong, consistent support for the relationship.

One can easily see the parallels between internal-external locus of control and the internal-external dimension of attributional style. These concepts are not synonymous, however, as they stem from two different theoretical backgrounds, namely, Social Learning Theory (Rotter, 1966) and Attributional Theory (Seligman, 1975), respectively. The seemingly incompatible finding that depressed individuals tend to have an external locus of control (i.e., they think that events in their lives are not within their control) and yet tend to make internal attributions (i.e., they blame themselves for the occurrence of these events) has been referred to as a "depressive paradox" (Abramson & Sackeim, 1977; Benassi et al., 1988). The depressive paradox, which was first introduced by Abramson & Sackeim, provides further support for the idea that the concepts of internal-
external locus of control and internal-external attributions are not synonymous. Peterson et al., (1993) made the following distinction between the two concepts:

The difference is that locus of control is a belief about the nature of reinforcement—that is, about rewards and punishments in the world. Causal attributions are judgments about the causes of events. Although related, these are not the same. Empirically, they may be independent. An individual with an internal locus of control may offer external causal attributions—"If I am charming, I will be offered the job, but whether or not I am charming depends on the mood of the interviewer"—or vice versa (p. 145).

Though relatively less attention has been paid to the possibility that optimistic attributional style may serve as a protective factor, buffering the impact of negative life events, the role of pessimistic attributional style as a vulnerability factor has been discussed in the literature. Burns and Seligman (1991) postulated that, theoretically, although the relationship between pessimistic attributional style and depression has been well established in the literature, such pessimism should lead to depression, only in the presence of negative life events. Burns and Seligman thus predicted that the relationship between attributional style and depression would only exist under conditions of adversity, as would be predicted in a diathesis-stress type model.

**Self-Efficacy**

Self-efficacy theory, which was put forth by Bandura (1977), holds that our expectations of success influence "our choice of actions, the effort we expend, our persistence in the face of adversity, and our emotional or affective experiences" (Maddux, 1991, p. 62). The concept of self-efficacy has been described as "the expectation that one can successfully perform a behaviour" (Sherer & Adams, 1983, p.
Self-efficacy encompasses an individual's beliefs about whether he or she has certain skills required for performance of a given behaviour and whether he or she can appropriately apply those skills, in order to perform that behaviour (Maddux, 1995). Bandura (1977, 1997) spoke of three dimensions along which self-efficacy varied, including magnitude, strength, and generality. The magnitude of one's self-efficacy beliefs for a particular behaviour, involves the perceived limits of one's capabilities, along a spectrum of tasks of increasing difficulty. The generality of one's self-efficacy beliefs involves the task-specificity or generalizability of those beliefs and, therefore, the breadth of the contexts that would be affected by changes in those beliefs due to further success or failure. Lastly, the strength of self-efficacy beliefs relates to the confidence one has in those beliefs and the degree to which inconsistent experiences can influence them (Bandura, 1977; Maddux, 1995).

Maddux and Lewis (1995) spoke of three ways in which self-efficacy could influence psychological adjustment. The first domain of influence that they spoke of, related to the impact that self-efficacy has on "goal-setting and persistence" (p. 43), which in turn leads to differing levels of success. The second domain of influence, which they called "cognitive efficiency" (p. 43), related to the more efficient, problem-focused approaches taken by those with high self-efficacy and the self-doubt and self-criticism that those with low self-efficacy tend to engage in. The last domain of influence, "emotional adaptiveness" (p. 43), involves differences in the levels of emotions such as anxiety, apprehension, and hopelessness for those with high versus low self-efficacy. One can see how, across these three domains, self-efficacy may act as a self-fulfilling prophecy, leading individuals to create conditions that increase the likelihood of the
expected outcome occurring, whether it be success or failure.

Although a relationship exists between self-efficacy and locus of control (Sherer et al., 1982), they have nevertheless evolved as separate constructs. In some cases, due to the similarity of self-efficacy expectancy and outcome expectancy, the constructs have at times become confused.

Although it sounds similar to self-efficacy expectancy, locus of control is a generalized outcome expectancy because it is concerned with the extent to which one believes one’s behavior controls outcomes, not confidence in one’s ability to perform certain behaviors” (Maddux, 1995, p.22).

Bandura (1997) predicted four categories of responses to situations, depending on both self-efficacy (high versus low) and locus of control (internal versus external). In those with internal control beliefs, high perceived self-efficacy would lead to motivation and goal-directed behaviour, whereas low perceived self-efficacy would lead to self doubt and self-criticism. In those with external control beliefs, those with high self-efficacy may take action to bring the situation within their control (e.g., social activism), whereas those with low self-efficacy might become hopeless or apathetic (Bandura, 1997).

Another concept that must be differentiated from self-efficacy is self-esteem. Bandura (1997) stated that self-esteem represents a person’s feelings of self-worth, whereas self-efficacy represents the beliefs a person has in his or her capabilities. Although a person may not believe that he or she has the ability to be successful in a certain area, self-esteem would not be affected unless success in that area was important to the person.
In contrast to concepts such as locus of control and attributional style, determinations of self-efficacy are usually made in relation to specific behaviours or behavioural domains (e.g., academic or social self-efficacy). In some cases, however, self-efficacy has been conceptualized and measured as a representation of a person’s overall sense of capability or competence (Bandura, 1997; Maddux, 1995). The Self-Efficacy Scale (Sherer et al., 1982) was developed and validated as a “measure of expectation of personal ability to initiate and persist in behaviour” (Sherer & Adams, 1983, p.899). The two subscales of the Self-Efficacy Scale measure general self-efficacy and social self-efficacy. Based on scores on the general self-efficacy subscale, past success in vocational, educational, and military domains have been predicted (Sherer et al., 1982).

Empirical Research

Locus of Control as a Protective Factor

A considerable amount of research has studied the protective value of locus of control, with mixed results. Many studies have found that locus of control interacts with stress level in predicting later psychological adjustment, with internal control beliefs being associated with better psychological adjustment (Johnson & Sarason, 1978; Lakey, 1988; Lefcourt, Miller, Ware, & Sherk, 1981; Luthar, 1991; Sandler & Lakey, 1982). These interactive effects suggest that internal locus of control serves as a protective factor, according to the way in which the concept of protective factor was originally defined in the resilience literature (Garmezy, 1984; Rutter, 1987).

Lefcourt and colleagues (Lefcourt et al., 1981) found that locus of control
interacted with stress in predicting mood disturbance, across three studies. They found conflicting results, however, regarding the types of interactions that were found across those studies. These inconsistencies were attributed to the use of two different life events measures. Unlike Coddington's Life Events Scale (Coddington, 1972), which was used to assess events occurring during the high school years (3-7 years prior, given that the participants were third year college students), the Life Events Survey (LES; Sarason, Johnson, & Siegel, 1978) assessed life events occurring within the last year. Based on this observation, Lefcourt and colleagues proposed that internals and externals may act similarly, immediately after stressful life events, but that such effects have a more lasting impact on individuals with a more external locus of control, so that past events are more closely related to current mood, in externals. These findings are not consistent with those of Johnson and Sarason (1978) who found an interaction between negative life events, as judged by the LES, and locus of control, in the prediction of anxiety and depression.

In other research, an interaction between stress and locus of control has not been found (Caldwell, Pearson, & Chin, 1987; Nelson & Cohen, 1983). Caldwell and colleagues did find a main effect of stress and locus of control on psychological adjustment, but no interactive, buffering effect. Interestingly, a significant interaction between gender and locus of control was found. Specifically, the authors found that locus of control did not moderate the effect of stress on symptom formation for women, but did for men. Internal men showed a greater amount of somatization in response to stress, whereas external men tended to show more depression. Based on their analyses, the authors stated that "gender is the most powerful mediator of the effect of stress on adjustment as measured by the Composite Symptom Checklist" (p. 11). Research by
Nelson and Cohen suggested that locus of control acted as a protective factor, only when in conjunction with social support.

Some resilience studies are conducted on a pre-selected, high risk group and thus interaction effects between stress and locus of control cannot be determined (Parker, Cowen, Work, & Wyman, 1990; Springer & Gastfriend, 1995). These types of studies still provide important information, however, about the role of locus of control. Parker et al. (1990) found that adolescents who were judged to be resilient tended to have a more internal locus of control. In another study, Springer and Gastfriend (1995) found that those adolescent sons of alcoholic fathers, who did not have substance abuse problems themselves, were rated as having a more internal locus of control.

**Attributional Style as a Protective Factor**

In contrast to the large amount of literature evaluating the value of locus of control as a protective factor, little research has examined the role of attributional style as a possible protective factor. One relevant study, conducted by Metalsky, Abramson, Seligman, Semmel, & Peterson (1982) examined the role of attributional style in predicting vulnerability and invulnerability to depression, after receiving a low grade on an exam. Metalsky and colleagues (1982) found that those individuals who were determined to have internal or global attributional styles, before the exam, were more likely to experience depressed mood after receiving a low grade, whereas those individuals who had external or specific attributional styles were "invulnerable" to a depressive response. For those individuals who did not receive a low grade on the exam, attributional style was not significantly related to post-exam depressive moods. This
interaction between attributional style and stress level suggests that external and specific attributional styles for negative events may serve as a protective factor in the promotion of resilience. A similar study, done by Metalsky, Halberstadt, and Abramson (1987) examined the role of internal, stable, global attributional style to be a diathesis or vulnerability factor, leading to depression in the presence of stress. They found that, although attributional style was not correlated with the immediate reaction to a low grade on an exam, there was an interaction between attributional style and depressed mood; that is, beyond the immediate reaction.

Though the results of these studies show the potential for attributional style to act as a protective factor, at least in the promotion of emotional resilience, there have not been sufficient studies done to draw any conclusions. Thus, further research into the protective role of external, situation-specific, and unstable attributional style for negative events would be an asset, shifting the focus from vulnerability to resilience.

Self-Efficacy as a Protective Factor

Much like with attributional style, only a limited amount of research has examined the role of self-efficacy as a protective factor. The ability of school self-efficacy (i.e., confidence in one's ability to succeed in school), to act as a protective factor, has received some support in the literature (Rutter, 1992; Spencer, Cole, Dupree, Gymph, & Pierre, 1993) In a recent study of factors moderating the experiences of trauma in firefighters, Regehr, Hill, and Glancy (2000) found that high self-efficacy was associated with lower levels of depression in firefighters who had been involved in traumatic events. They also found higher levels of self-efficacy in those firefighters who
had been exposed to such negative events and concluded that this finding "supports the notion that resilience capacity is enhanced by encountering and mastering life challenges" (Regehr et al., 2000, p. 337). In another study, Hardin, Weinrich, Weinrich, Garrison, & Hardin (1994) examined levels of psychological distress in adolescents exposed to Hurricane Hugo and found that African-American adolescents, who had higher amounts of negative life events and greater exposure to the hurricane, had higher levels of self-efficacy and lower levels of psychological distress than White adolescents.

As was true with attributional style, there has not been sufficient research examining the possible protective value of high self-efficacy, to draw any conclusions. The present study provided an opportunity to further explore the ability of self-efficacy to moderate the relationship between life stress and current adjustment.

**Purpose of the Present Study**

The purpose of the present study was to examine whether a relationship exists between life stress and current competence and if so, to what extent. Two sources of life stress, including negative life events (i.e., past, acute life stressors) and daily hassles (more recent, chronic life stressors) were examined separately, in order to look at the relative importance of each source of stress. In addition to looking at overall competence, academic, social, and emotional competence were examined separately, based on findings in the literature that suggest that resilience is not a unitary construct (Luthar & Cushing, 1999; Luthar, Doernberger, & Zigler, 1993). Recent literature has also demonstrated that individuals judged to be resilient based on an assessment of overt competence, mainly in the social and academic domains, may not differ significantly in
the experience of internalizing symptoms, compared to their nonresilient counterparts (D’Imperio, et al., 2000; Luthar, 1991; Luthar & Zigler, 1991).

Another, related purpose of the present study was to investigate the ability of locus of control, attributional style, and self-efficacy to act as protective factors, moderating the effects of negative life events and daily hassles on academic, social, emotional, and overall competence. That is, we examined whether individuals’ locus of control, attributional style, or self-efficacy beliefs influenced the degree to which life stress was related to current functioning (i.e., to determine whether any of the possible moderators “interacted” with life stress in predicting current competence). More specifically, the present study examined whether having a more optimistic attributional style, more internal locus of control, or higher self-efficacy protected those who possess these attributes, buffering the potential impact of life stress on current competence and, thus, promoting resilience. Where locus of control, attributional style, and self-efficacy did emerge as protective factors in the present study, the type of protective function that was exhibited by each was explored.

It was expected that if internal locus of control served as a protective factor, then those possessing it should show better adjustment/higher competence following adversity than those with a more external locus of control. In the same respect, if having an optimistic attributional style served as a protective factor, then those possessing it should have also been better adjusted after stressful circumstances, than those with a more pessimistic attributional style. Given the links between depression and both external locus of control and pessimistic attributional style (Abramson, Seligman, & Teasdale, 1978; Benassi et al., 1988; Burns & Seligman, 1991; Seligman, 1975), it was thought that
any protective value of internal locus of control and optimistic attributional style may
have been particularly apparent in the area of emotional competence. We also expected,
in conditions of adversity, to see a higher level of competence in individuals with high
self-efficacy, if high self-efficacy did in fact serve a protective function. Given that the
Self-Efficacy Scale has been said to predict social, academic, and vocational success
(Sherer et al., 1982), it was thought that if self-efficacy served as a protective factor, it
might be most apparent, using the present measure, in the social and academic domains.
CHAPTER II

METHOD

Participants

Participants consisted of 223 university students from a mid-sized university in Southern Ontario, Canada. Data were collected in June and July of 2001, utilizing students who were registered in either intersession or summer session undergraduate psychology courses. In exchange for participation, students received course credit (i.e., two bonus marks) in an undergraduate psychology course in which they were concurrently registered. The gender composition of the sample included 180 females (80.7%) and 43 males (19.3%). The mean age of participants was 23.81 (SD = 6.45) years, with a range of 18 to 58 years.

Measures

Life Stress Indices

Negative life events scale. A 23-item self-report measure of uncontrollable, negative life events was constructed for the purposes of this investigation (see Appendix A). Items were adapted from Coddington’s Life Events Scale (Coddington, 1972), Sarason’s Life Experiences Survey (Sarason, Johnson, & Siegel, 1978), and Johnson & McCutcheon’s Life Events Checklist (Johnson & McCutcheon, 1980). An additional eight items, judged to be negative and relatively uncontrollable (e.g., death of a pet), were
also added. The total number of negative life events reported by each participant, rather than the reported impact of these events, was used in analyses to further prevent confounding with current functioning.

*Inventory of College Students’ Recent Life Experiences (ICSRLE; Kohn, Lafreniere, & Gurevich, 1990).* The ICSRLE is a 49-item self-report measure of daily hassles or stressors. Respondents rate each of the 49 statements regarding daily life events, occurring over the past month, on a 4-point Likert-type scale ranging from 1 (*not at all a part of my life*) to 4 (*very much a part of my life*). Higher scores on this measure represent a greater amount of hassles over the past month. The ICSRLE was developed to be less confounded with measures of psychological distress than the Hassles Scale developed by Kanner, Coyne, Schaefer, and Lazarus (1981) was. Thus, the ICSRLE strives to measure levels of objective stress, rather than perceived stress. Factor analyses have suggested that the scale is not highly contaminated by psychological distress (Kohn et al., 1990; Osman, Barrios, Longnecker, & Osman, 1994). The scale demonstrated high internal consistency with the current sample (α = .91).

**Possible Moderator Indices**

*Internal-External Locus of Control Scale (I-E; Rotter, 1966).* Rotter’s I-E scale is a 29-item forced-choice questionnaire, assessing individuals’ internal versus external perceptions of control. Twenty-three of the 29 items list both an internal and an external belief about a particular topic, requiring that the participant select the one that they believe to be most true, for example, a (*many times I feel that I have little influence over*
the things that happen to me) or b (it is impossible for me to believe that chance or luck plays an important role in my life). The other six items are fillers, formatted in the same manner as the other questions and were included to increase ambiguity regarding the purpose of the measure (Rotter, 1966). Scores on the I-E scale are generated by assigning a score of one to each item where the statement representing external control was selected and a score of zero on each item where the statement representing internal control was selected. Thus, higher scores on the I-E scale reflect a more external locus of control. In the present study, the mean item score across the 23 items was calculated, with mean scores approaching 1 representing external control and scores approaching 0 representing internal control.

The I-E scale has shown good test-retest reliability ($\alpha = .55$ to $\alpha = .72$) and good internal consistency ($\alpha = .69$ to $\alpha = .73$; Rotter, 1966). Internal consistency of the I-E scale with the current sample was consistent with Rotter’s findings ($\alpha = .67$). A more detailed review of reliability and validity data, including data for each gender, are presented by Rotter (p.13).

**Expanded Attributional Style Questionnaire (Expanded ASQ; Peterson & Villanova, 1988).** The Expanded ASQ is a self-report measure of attributional or explanatory style for negative life events, across dimensions of internality, stability, and globality. The Expanded ASQ measures these three dimensions through a series of 24 hypothetical negative events. For each event, participants write down what they feel would be the “major cause” of that event, if it were to happen to them. Then participants rate, on a 7-point scale, where their cause fits on dimensions of internality (1 [totally due
to others] to 7 [totally due to me]), stability (1 [never present] to 7 [always present]), and
globality (1 [just this situation] to 7 [all situations]). For each of these three dimensions,
a mean score is computed across the 24 scenarios, with higher scores representing more
internal, stable, and global attributions. A composite score can be obtained by computing
the mean of the scores obtained on each of the three dimensions. This composite score,
which was used in the present study, provides an overall estimate of attributional style,
with high scores representing a more pessimistic attributional style and low scores
representing a more optimistic attributional style.

The Expanded ASQ was adapted from the Attributional Style Questionnaire
(ASQ; Peterson, Semmel, von Baeyer, Abramson, Metalsky, & Seligman, 1982), in order
to improve upon the modest reliability coefficients (α = .30 to .70) that have been found
with the ASQ (Burns & Seligman, 1991; Peterson & Villanova, 1988). Unlike the ASQ,
which assesses attributional style for both positive and negative events, the Expanded
ASQ focuses solely on assessing attributional style for negative life events. Peterson and
Villanova chose to narrow their focus to attributions for negative events exclusively,
based on the greater relevance of attributional style for negative events to the learned
helplessness literature, with which the scale is often used. Further support for the
exclusive focus on negative events comes from the finding that attributional style for
positive events shows less stability than for negative events (Burns & Seligman, 1989).

Internal consistency for the dimensions of internality, stability, and globality, as
measured by the Expanded ASQ, have been reported to be .66, .85, and .88 respectively
(Peterson & Villanova, 1988), which coincides with the alpha coefficients obtained with
the current sample (α = .69, .87, and .88 respectively). Estimates of internal consistency
of a composite score on the Expanded ASQ, with internality, stability, and globality
dimensions combined, were higher than that for the three separate dimensions (α_comp =
.90) in the present study. Composite scores of overall attributional style for negative and
positive events have been used in past research (Burns & Seligman, 1989; Peterson et al.,
1982; Sweeney et al., 1986). Peterson et al. reported test-retest reliability of a composite
score for negative events to be .64 and suggested that, unless “differential relationships”
are predicted for internality, stability, and globality, using the composite is recommended
to “facilitate data analysis” (pp. 295-296).

**Self-Efficacy Scale (Sherer et al., 1982).** The Self-Efficacy Scale is a self-report
inventory, composed of two subscales, that measures the generalized expectancies that a
person holds regarding the likelihood that he or she will be successful in novel situations
(Sherer & Adams, 1983; Sherer et al., 1982). Each item is rated on a 5-point scale,
ranging from 1 (strongly disagree) to 5 (strongly agree). The first subscale, called the
General Self-efficacy subscale, contains 17 items that addresses global, rather than
situation-specific self-efficacy (Sherer et al., 1982). The second subscale, the Social Self-
efficacy subscale, contains six items that assess self-efficacy in relation to social
situations (Sherer et al., 1982). Higher scores on this measure represent higher self-
efficacy. The mean item score was computed and used in the present study, with mean
scores approaching 5 representing high levels of self-efficacy and mean scores
approaching 1 representing low levels of self-efficacy. Internal consistency of the
General and Social self-efficacy subscales has been reported to be .86 and .71
respectively (Sherer & Adams, 1983; Sherer et al., 1982). Internal consistency estimates
obtained with the current sample were .86 and .64 for the general and social subscales respectively. Given the moderate internal consistency estimates obtained on the social self-efficacy subscale, participants’ levels of self-efficacy were based solely on their score on the general self-efficacy subscale.

Competence Indices

*Academic competence.* Participants’ academic competence was based on their reported cumulative grade point average (cGPA). Students in their first term, who would not yet have a cGPA, were asked to report their final Ontario Academic Credits (OAC) average. The question regarding cGPA was presented to participants on the demographics questionnaire, which will be discussed shortly (see Appendix B). For the purposes of data analysis, the University of Windsor’s 13-point grading scale was used and grades that were reported in other formats (e.g., letter grades) were converted to this scale.

*Emotional competence.* Emotional competence was estimated by assessing the level of internalizing symptoms, using the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), the State-Trait Anxiety Inventory-Form Y (STAI-Y; Spielberger, 1983), the Hopkins Symptom Checklist (HSCL; Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974) and current levels of self-esteem, as reported on the Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965). Lower scores on the BDI, STAI and HSCL (representing lower levels of depression, anxiety, and general symptomatology) were considered to reflect higher emotional competence. In contrast, higher scores on the RSES (representing higher levels of self-esteem) were considered to
reflect higher levels of emotional competence.

The BDI (Beck et al., 1961) is a 21-item self-report measure that is used extensively in the literature as a measure of depression. The BDI assesses behavioural manifestations of depression across 21 categories, including: mood, pessimism, sense of failure, lack of satisfaction, guilty feeling, sense of punishment, self-hate, self accusations, self punitive wishes, crying spells, irritability, social withdrawal, indecisiveness, body image, work inhibition, sleep disturbance, fatigability, loss of appetite, weight loss, somatic preoccupation, and loss of libido. Each of the 21 items consists of a series of statements, numbered 0 to 3, from which the participant must pick out the statement that best describes how he or she is feeling at that moment. Statements are presented in order of increasing depression and scores are computed by adding the number next to statement chosen for each item. Higher scores on the BDI represent higher levels of depression. The mean item score was computed and used in the present study, with mean scores approaching 3 representing high levels of depression and mean scores approaching 0 representing low levels of depression. The BDI has shown substantial test-retest reliability and good internal consistency, with a mean coefficient alpha of .81, in nonpsychiatric subjects (Beck, Steer, & Garbin, 1988). Internal consistency of the BDI with the current sample was also high (α = .86).

The STAI-Y (Spielberger, 1983) is a self-report measure of anxiety. The STAI-Y is composed of two scales, providing separate measurement of state anxiety (S-Anxiety) and trait anxiety (T-Anxiety). The S-Anxiety scale measures levels of transient anxiety, by asking respondents to rate their agreement with each of 20 statements, according to how they feel “right now, at this moment”. Responses are given on a 4-
point scale, ranging from 1 (not at all) to 4 (very much so). The T-Anxiety scale measures general anxiety levels, by asking respondents to rate each of 20 statements on a 4-point scale, according to how they feel “generally”. Responses range from 1 (almost never) to 4 (almost always). Higher scores on the S-Anxiety and T-anxiety scales represent high levels of anxiety. Mean item scores were computed and used in the present study, with mean scores approaching 4 representing high levels of anxiety and mean scores approaching 1 representing low levels of anxiety. The STAI-Y has shown high internal consistency, with alpha coefficients ranging from .91 to .93 for S-Anxiety and .90 to .91 for T-Anxiety (Spielberger, 1993). Current sample estimates of internal consistency were found to be .93 for S-Anxiety and .91 for T-Anxiety, which is consistent with Spielberger’s findings.

The HSCL (Derogatis et al., 1974) is 58-item self-report measure of psychological distress. Respondents are asked to rate amount of discomfort that each of the items cause them, on a 4-point scale, ranging from 1 (not at all) to 4 (extremely). Higher scores on the HSCL represent higher levels of distress. The mean item score was computed and used in the present study, with mean scores approaching 4 representing high levels of distress and mean scores approaching 1 representing low levels of distress. The HSCL is composed of five symptom dimensions, including somatization, obsessive-compulsive, interpersonal sensitivity, anxiety, and depression, which have been validated through factor analyses (Derogatis et al., 1974). The scale has shown high reliability and validity, with alpha coefficients ranging from .84 to .87 across the five subscales (Derogatis et al., 1974). Internal consistency estimates across the five subscales of the HSCL were high with the current sample (α = .78 to .84) and internal consistency for the
total HSCL score was also high ($\alpha = .95$). Given the high reliability of the overall HSCL score, subscales were combined and an overall mean item score was used to represent a measure of general distress in the present study.

The RSES (Rosenberg, 1965) is a widely used self-report measure of self-esteem (Blascovich & Tomaka, 1991). The scale consists of ten items, with responses to each statement ranging on a 4-point scale from 1 (strongly agree) to 4 (strongly disagree). Higher scores indicate lower levels of self-esteem. The mean item score was computed and used in the present study, with mean scores approaching 1 representing high levels of self-esteem and mean scores approaching 4 representing low levels of self-esteem. The RSES has consistently shown good reliability and validity and has been demonstrated to be a unidimensional measure of self-esteem (Blascovich & Tomaka, 1991). A high level of internal consistency ($\alpha = .91$) was obtained for the current sample. Unlike the other measures of emotional competence used in this study, which are actually measuring levels of emotional distress (i.e., lack of emotional competence), the Rosenberg Self-Esteem Scale provided a more general and direct measure of emotional competence.

To obtain an overall estimate of emotional competence, a composite score was obtained by combining participants' scores on the BDI, STAI-Y (T-anxiety and S-anxiety scales), HSCL, and RSES (after standardizing each score).

**Social competence.** The Interpersonal Competence Questionnaire (ICQ; Buhrmester, Furman, Wittenberg, & Reis, 1988) is a self-report measure of social competence. The questionnaire yields scores for five domains, including initiating relationships, self-disclosure, asserting displeasure with others' actions, providing
emotional support, and managing interpersonal conflicts. Each domain contains 8 items, which are statements regarding a person’s competence in and comfort with a given situation. Participants are to rate each statement on a 5-point scale, according to the following criteria: 1 (I’m poor at this; I’d feel so uncomfortable and unable to handle this situation, I’d avoid it if possible), 2 (I’m only fair at this; I’d feel uncomfortable and would have lots of difficulty handling this situation), 3 (I’m OK at this; I’d feel somewhat uncomfortable and have some difficulty handling this situation), 4 (I’m good at this; I’d feel quite comfortable and am able to handle this situation), 5 (I’m EXTREMELY good at this; I’d feel very comfortable and could handle this situation very well) (Buhrmester et al., 1988). Each statement is given two ratings, one statement reflecting competence in interactions with a same-sex friend and one reflecting competence with an opposite sex date or romantic partner. Higher scores on the ICQ represent higher levels of social competence. The mean item score was computed and used in the present study, with mean scores approaching 5 representing high social competence and mean scores approaching 1 representing low social competence. Test-retest reliability estimates for the five subscales have been shown to range from .69 to .89 and internal consistency has been reported to range from .86 to .91 across the five subscales. Internal consistency across domains of initiation, negative assertion, disclosure, emotional support, and conflict management were found to be .90, .92, .88, .93, and .87, respectively, for the current sample. Internal consistency for a composite ICQ score (with the mean of the 5 domains taken) was .96 overall (α = .93 for both social competence with friends and with romantic partners). For the purposes of the current study, an overall ICQ score was derived and utilized as an overall estimate of social competence.
Demographic Information

A demographics questionnaire was included (see Appendix B), asking participants to indicate their age, gender, marital status, year and program of study, and current cumulative grade point average. The final question, as mentioned earlier, was used as a measure of academic competence.

Overall Summary of Measures

For the sake of clarity, a summary of the variables and respective measures has been provided in Table 1.

Procedure

Participants were recruited in June and July of 2001, from intersession and summer session undergraduate psychology courses. Potential participants were contacted by telephone, from a list supplied by the Psychology Department participant pool. Signs were also posted in the Psychology Department on the participant pool ongoing research board. Potential participants were told that the present study was examining how one’s interpretations of events and experiences may influence how negative events in one’s life impact current adjustment in various areas. Participants were also informed that the study would take approximately one hour of their time, that their responses would remain anonymous, and that they would receive up to two bonus points toward their course grade, depending on the maximum set by the course instructor.
Table 1

**Main Variables and Associated Measures**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Measure</th>
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</thead>
<tbody>
<tr>
<td><strong>Independent/Predictor Variables</strong></td>
<td></td>
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<tr>
<td>Life Stress</td>
<td>Negative life events scale</td>
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<tr>
<td></td>
<td>Inventory of College Student’s Recent Life Experiences</td>
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<tr>
<td><strong>Moderator Variables</strong></td>
<td></td>
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<tr>
<td>Locus of Control</td>
<td>Internal-External Locus of Control Scale</td>
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<tr>
<td>Attributional Style</td>
<td>Expanded Attributional Style Questionnaire</td>
</tr>
<tr>
<td>Self-Efficacy</td>
<td>Self-Efficacy Scale</td>
</tr>
<tr>
<td><strong>Dependent/Criterion Variables</strong></td>
<td></td>
</tr>
<tr>
<td>Academic Competence</td>
<td>Question 5 of demographics questionnaire</td>
</tr>
<tr>
<td>Social Competence</td>
<td>Interpersonal Competence Questionnaire</td>
</tr>
<tr>
<td>Emotional Competence</td>
<td>Composite of following emotional scales:</td>
</tr>
<tr>
<td>Depression</td>
<td>Beck Depression Inventory</td>
</tr>
<tr>
<td>Anxiety</td>
<td>State-Trait Anxiety Inventory-Form Y</td>
</tr>
<tr>
<td>General distress</td>
<td>Hopkins Symptom Checklist</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>Rosenberg Self-Esteem Scale</td>
</tr>
<tr>
<td>Overall Competence</td>
<td>Composite of all three competence domains</td>
</tr>
</tbody>
</table>
Participants were scheduled to complete the questionnaire package during one of several group administration sessions. Upon arrival, participants were reminded of the purpose of the study. They were then given a consent form (see Appendix B), which they were asked to review carefully and then sign, should they still wish to participate. The consent forms were collected as questionnaire booklets were distributed. The questionnaires packages took approximately one hour to complete, but participants were given extra time if they need it. Most participants completed the study within 45 to 90 minutes. Upon completing the questionnaire package, participants recorded their names and student numbers on a separate sheet, in order to receive their bonus points. Lastly, participants were given a debriefing form (see Appendix C), which contained a more detailed review of the purpose of the study, as well as contact numbers of services provided through the University of Windsor and those of some community services, should they wish to further discuss any issues brought up through their participation in the study. Participants were thanked for their time and effort before leaving.
CHAPTER III

RESULTS

Data Reduction

*Emotional Competence*

In preparation for data analysis, two composite variables were created. In order to obtain an overall measure of emotional competence, a Principal Components Analysis was performed through SPSS-10, using participants' mean depression, state-anxiety, trait-anxiety, general distress, and self-esteem scores (as measured by the BDI, STAI-SA, STAI-TA, HSCL, and RSES, respectively). One factor was extracted ($N = 221$), which explained 73.5% of the variance. Factor loadings for each of the five relevant measures were high, ranging from .80 (general distress) to .93 (trait anxiety). Given the high loadings of each of the five emotion-related measures on the single factor, each variable was weighted equally in computing the composite variable. The composite variable was computed by converting participants' mean scores on the BDI, STAI-SA, STAI-TA, HSCL, and RSES (after reversing the sign of participants' RSES scores) to $z$-scores and then computing a mean $z$-score across the five measures. This composite score was used in all subsequent analyses, as a measure of emotional competence. Higher scores on the emotional competence composite variable represented lower emotional competence (greater emotional distress).
Overall Competence

A second composite variable was created, in order to examine participants’ overall competence. A Principal Components Analysis was again conducted, using participants’ scores for academic, social, and emotional competence (as measured by cGPA, ICQ, and emotional composite scores, respectively). One factor was extracted \( N = 206 \), which explained 49.6% of the variance. Factor loadings of academic, social, and emotional competence on the single factor were .32, .82, and -.85, respectively. The composite was computed by converting mean cGPA, ICQ, and emotional composite scores (after reversing the sign of participants’ emotional composite scores), to \( z \)-scores and weighting each of the three components equally by computing a mean score across the three variables. The decision was made to weight the three components equally, based on the lack of a theoretical basis for differentially weighting the three components, as well as to maintain a higher level of interpretability of results. This composite score was used in all subsequent analyses, as a measure of overall competence. Higher scores on the overall competence composite variable represented higher levels of functioning.

Descriptive Statistics

The final sample consisted of 223 participants (180 females, 43 males), after two additional participants were excluded due to missing data across many measures. Participants with considerable missing data confined to only a few measures were retained, but were excluded from analyses pertaining to those measures. All participants were undergraduate students at the University of Windsor, who were registered in undergraduate psychology courses in June or July of 2001. Participants came from more
than 20 different undergraduate programs, with the most highly represented program being psychology (26% = psychology major; 6% = double major, including psychology). Other students were registered in sociology/criminology (9%), business (9%), natural sciences (7%), and social work (5%). All other programs were represented by less than 5% of participants. Students' year of study ranged from first to fifth year (M = 2.67, SD = 1.03), although 16 participants (7%) did not indicate their year of study.

The mean age of participants was 23.81 (SD = 6.45) years, with a range of 18 to 58 years. The majority of participants indicated that they were single and had never married (81%). An additional 9% of participants were married and 6% of participants were living together.

Participants' mean item responses, rather than total scores, were computed for each of the measures, except the life events measure, as a means of managing small amounts of missing data on those measures. Sample means, standard deviations, relevant item response parameters, and number of subjects with valid data are presented for each of the measures and composite variables in Table 2.

Correlational Analyses

In order to examine the relationship between variables directly, Pearson correlation coefficients were computed. A correlation matrix for the main predictor, and criterion variables, is presented in Table 3.
<table>
<thead>
<tr>
<th>Table 2</th>
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</thead>
<tbody>
<tr>
<td><strong>Sample Sizes, Mean Item Scores, and Standard Deviations by Variable</strong></td>
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<tr>
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<tr>
<td><strong>Life Stress Indexes</strong></td>
</tr>
<tr>
<td>Negative Life Events (LEQ)</td>
</tr>
<tr>
<td>Daily Hassles</td>
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<tr>
<td><strong>Moderator Indexes</strong></td>
</tr>
<tr>
<td>Locus of Control (IELOC)</td>
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<tr>
<td>Attributional Style (EASQ)</td>
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<tr>
<td>Self-Efficacy (SES)</td>
</tr>
<tr>
<td><strong>Competence Indexes</strong></td>
</tr>
<tr>
<td>Overall competence (Composite)</td>
</tr>
<tr>
<td>Academic competence (cGPA)</td>
</tr>
<tr>
<td>Social competence (ICQ)</td>
</tr>
<tr>
<td>Emotional competence (Composite)</td>
</tr>
<tr>
<td>Depression (BDI)</td>
</tr>
<tr>
<td>State anxiety (STAI-SA)</td>
</tr>
<tr>
<td>Trait anxiety (STAI-TA)</td>
</tr>
<tr>
<td>General distress (HSCL)</td>
</tr>
<tr>
<td>Self-esteem (RSES)</td>
</tr>
</tbody>
</table>

*Note. Mean item scores, rather than mean total scores, were used in the analyses and are thus presented here (except for LEQ, where mean number of negative life events are presented).

\(^{a}\)potential item response range for each measure. \(^{b}\)Mean number of NLEs. \(^{c}\)scores on measures used to create the composite scores were first converted to z scores.
\begin{table}
\centering
\caption{Intercorrelations Between Main Variables}
\begin{tabular}{lcccccccccc}
\hline
Scale & 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\
\hline
1. LEQ & -- & .11 & -.05 & .12 & .12 & .07 & .05 & .09 & .05 \\
2. ICSRLE & -- & .09 & .14* & -.27*** & -.27*** & -.13 & .57*** & -.47*** & \\
3. IELOC & -- & .07 & -.28*** & .04 & -.19** & .27*** & .20** & \\
4. EASQ & -- & -.13 & .13 & -.16* & .21** & -.11 & \\
5. GSE & -- & .21** & .39*** & -.55*** & .55*** & & \\
6. cGPA & -- & .05 & -.14* & .58*** & & & \\
7. ICQ & -- & -.46*** & .73*** & & & & \\
8. ECMP & -- & -.77*** & & & & & \\
9. OCMP & -- & & & & & & & \\
\hline
\end{tabular}
\end{table}

*\(p < .05\). **\(p < .01\). ***\(p < .001\)
Correlation Between Measures of Life Stress

Negative life events and daily hassles were significantly correlated, after the influence of possible moderators, including locus of control, attributional style, and self-efficacy, were controlled for ($r = .17, p < .05$; see Table 4). Before controlling for these variables, the relationship was not significant at the $p < .05$ level.

Correlation Between Measures of Possible Moderator Variables

A significant correlation ($r = -.28, p < .001$) was found between locus of control and general self-efficacy. Attributional style was not significantly correlated with either locus of control or general self-efficacy at the $p < .05$ level.

Correlation Between Competence Variables

The four competence variables were academic competence (cGPA), social competence (ICQ), emotional competence (composite), and overall competence (composite). Academic competence was correlated with emotional competence ($r = -.14, p < .05$) and overall competence ($r = .58, p < .001$). Social competence was also significantly correlated with emotional competence ($r = -.46, p < .001$) and overall competence ($r = .73, p < .001$). Emotional competence was also highly correlated with overall competence ($r = -.77, p < .001$). No other pairs of variables were significantly correlated at the $p < .05$ level.

Relationship Between Life Stress and Current Competence

Total number of negative life events, as measured by the NLEQ, was not
<table>
<thead>
<tr>
<th>Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
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<td>1. LEQ</td>
<td></td>
<td>.17*</td>
<td>.02</td>
<td>.01</td>
<td>.15*</td>
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<td>.03</td>
<td>.16*</td>
<td>.27***</td>
<td>-.04</td>
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<tr>
<td>2. ICSRLE</td>
<td></td>
<td>-.27***</td>
<td>.03</td>
<td>.51***</td>
<td>-.38***</td>
<td>.45***</td>
<td>.32***</td>
<td>.50***</td>
<td>.51***</td>
<td>.30***</td>
<td></td>
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<tr>
<td>3. cGPA</td>
<td></td>
<td></td>
<td>-.01</td>
<td>-.06</td>
<td>.59***</td>
<td>-.06</td>
<td>.02</td>
<td>-.05</td>
<td>-.05</td>
<td>-.11</td>
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<tr>
<td>4. ICQ</td>
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<td></td>
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<td>-.29***</td>
<td>.66***</td>
<td>-.24**</td>
<td>-.14</td>
<td>-.30***</td>
<td>-.09</td>
<td>-.43***</td>
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<tr>
<td>5. ECMP</td>
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<td></td>
<td>-.67***</td>
<td>.84***</td>
<td>.81***</td>
<td>.91***</td>
<td>.74***</td>
<td>.74***</td>
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<td>6. OCMP</td>
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<td>-.57***</td>
<td>-.45***</td>
<td>-.62***</td>
<td>-.43***</td>
<td>-.64***</td>
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<tr>
<td>7. BDI</td>
<td></td>
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<td></td>
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<td></td>
<td>.61***</td>
<td>.66***</td>
<td>.55***</td>
<td>.56***</td>
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<td>8. STAI-SA</td>
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<td>.70***</td>
<td>.49***</td>
<td>.46***</td>
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<td>9. STAI-TA</td>
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<td></td>
<td>.62***</td>
<td>.69***</td>
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<td>10. HSCL</td>
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<td></td>
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<td>.33***</td>
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<tr>
<td>11. RSES</td>
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</tbody>
</table>

*Note. N = 179, LEQ = life events questionnaire; ICSRLE = Inventory of College Students' Recent Life Experiences (daily hassles); cGPA = cumulative grade point average; ICQ = Interpersonal Competence Questionnaire; ECMP = emotional competence; OCMP = overall competence; BDI = Beck Depression Inventory; STAI-SA = State-Trait Anxiety Inventory – State Anxiety; STAI-TA = State-Trait Anxiety Inventory – Trait Anxiety; HSCL = Hopkin's Symptom Checklist; RSES = Rosenberg Self-Esteem Scale.

*p < .05. **p < .01. ***p < .001.
significantly correlated with academic, social, emotional, or overall competence at a $p < .05$ level. When the influence of locus of control, attributional style, and self-efficacy were controlled for, number of negative life events was significantly correlated with emotional competence ($pr = .15, p < .05$).

Level of Daily Hassles, as measured by the ICSRLE, was significantly correlated with cumulative GPA ($r = -.27, p < .001$), emotional competence ($r = .57, p < .001$), and overall competence ($r = -.47, p < .001$). Level of daily hassles was not significantly correlated with social competence at a $p < .05$ level. When the influence of locus of control, attributional style, and self-efficacy were controlled for, the significance and direction of correlations did not change, however, correlations of daily hassles with emotional and overall competence were reduced to .51 and -.38, respectively.

**Relationship Between Life Stress and Possible Moderators**

Total number of negative life events was not significantly correlated with measures of locus of control, attributional style, or self-efficacy at a $p < .05$ level. Level of daily hassles was significantly correlated with attributional style ($r = .14, p < .05$) and self-efficacy ($r = -.27, p < .001$), but not locus of control.

**Relationship Between Possible Moderators and Current Competence**

Locus of control was significantly correlated with social competence ($r = -.19, p < .01$), emotional competence ($r = .27, p < .001$), and overall competence ($r = -.20, p < .01$), but not cumulative GPA. Attributional style was significantly correlated with social competence ($r = -.16, p < .05$) and emotional competence ($r = .21, p < .01$), but not
cumulative GPA or overall competence. Lastly, general self-efficacy was significantly correlated with cumulative GPA \((r = .21, p < .01)\), social competence \((r = .39, p < .001)\), emotional competence \((r = -.55, p < .001)\), and overall competence \((r = .55, p < .001)\).

**Stepwise Regression Analyses**

The relative importance of each of the predictor variables, including life stress variables (negative life events and daily hassles) and potential moderator variables (locus of control, attributional style, and self-efficacy), in the prediction of competence, were examined through stepwise regression analyses. Separate analyses were conducted to examine the impact of predictor variables on academic, social, emotional, and overall competence.

Regression analyses were carried out using SPSS v.10. Predictor variables were centered (i.e., the mean score was subtracted from each participant’s score to shift the mean score to zero) prior to each analysis. Variables were centered in order to make the regression coefficients more meaningful, however, criterion variables (i.e., measures of competence) were left uncentered as recommended by Aiken, West, and Reno (1991, p. 35), to allow predicted scores to conform to the original scaling of the criterion variable.

**Predictors of Academic Competence**

The impact of each of the predictor variables on academic competence was examined through two stepwise regressions. Results are presented in Table 5.

The first regression examined the predictive power of number of negative life
### Table 5

**Stepwise Regression Analyses for Variables Predicting Academic Competence**

**Negative Life Events (N = 188; \( R^2 = .04 \))**

<table>
<thead>
<tr>
<th></th>
<th>B</th>
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<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSE</td>
<td>.77</td>
<td>.28</td>
<td>2.78*</td>
</tr>
</tbody>
</table>

**Daily Hassles (N = 197; \( R^2 = .12 \))**

<table>
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<tr>
<td>ICSRLE</td>
<td>-1.42</td>
<td>.37</td>
<td>-3.87***</td>
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<tr>
<td>EASQ</td>
<td>.70</td>
<td>.27</td>
<td>2.63**</td>
</tr>
<tr>
<td>GSE</td>
<td>.54</td>
<td>.27</td>
<td>2.01*</td>
</tr>
</tbody>
</table>

*Note.* ICSRLE = Inventory of College Students’ Recent Life Experiences (Daily Hassles); EASQ = Expanded Attributional Style Questionnaire; GSE = General Self-Efficacy.

*p < .05. **p < .01. ***p < .001.*
events (NLEQ) along with each of the three possible protective factors (LOC, EASQ, and GSE). The best and only significant predictor of academic competence was general self-efficacy, which explained 4% of the variance ($R^2 = .04$). Number of negative life events, locus of control, and attributional style were excluded from the equation. The overall model was significant, $F(1, 186) = 7.72, p < .01$, and explained 4% of the total variance.

When level of daily hassles (ICSRLE) was examined along with each of the three possible protective factors, three significant predictors emerged. The best predictor of academic competence, entered into the equation first, was daily hassles ($R^2 = .07$), which explained 7% of the total variance. Attributional style entered the equation next and explained an additional 3% of the variance, followed by general self-efficacy, which explained an additional 2% of the variance. Locus of control was excluded from the equation. The overall model was significant, $F(3, 193) = 8.91, p < .001$ and explained 12% of the total variance.

*Predictors of Social Competence*

The impact of each of the predictor variables on social competence was examined through two stepwise regressions. Results are presented in Table 6.

The first regression examined the predictive power of number of negative life events (NLEQ) along with each of the three possible protective factors. The best and only significant predictor of social competence was general self-efficacy ($R^2 = .13$). Number of negative life events, locus of control, and attributional style were excluded from the equation. The overall model was significant, $F(1, 200) = 30.09, p < .001$, and explained 13% of the total variance.
Table 6

**Stepwise Regression Analyses for Variables Predicting Social Competence**

### Negative Life Events ($N = 202; R^2 = .13$)

**Step 1**  
($R^2 = .13$)

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>GSE</td>
<td>.32</td>
<td>.06</td>
<td>5.48***</td>
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</tbody>
</table>

### Daily Hassles ($N = 212; R^2 = .16$)

**Step 1**  
($R^2 = .14$)

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>GSE</td>
<td>.33</td>
<td>.06</td>
<td>5.78***</td>
</tr>
<tr>
<td>EASQ</td>
<td>-.13</td>
<td>-.06</td>
<td>-2.24*</td>
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</table>

**Step 2**  
($Δ R^2 = .02$)

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<tbody>
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<td>.31</td>
<td>.06</td>
<td>5.47***</td>
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<tr>
<td>EASQ</td>
<td>-.13</td>
<td>-.06</td>
<td>-2.24*</td>
</tr>
</tbody>
</table>

*Note. GSE = General Self-Efficacy; EASQ = Expanded Attributional Style Questionnaire.*

* *p < .05. ** *p < .01. *** *p < .001.*
When level of daily hassles (ICSRLE) was examined along with each of the three possible protective factors, two significant predictors emerged. The best predictor of social competence, entered into the equation first, was general self-efficacy ($R^2 = .14$), which explained 14% of the variance. Attributional style was entered next and explained an additional 2% of the variance. Daily hassles and locus of control were excluded from the equation. The overall model was significant, $F (2, 209) = 19.53, p < .001$, and explained 16% of the total variance.

**Predictors of Emotional Competence**

The impact of each of the predictor variables on emotional competence was examined through two stepwise regressions. Results are presented in Table 7.

The first regression examined the predictive power of number of negative life events (NLEQ) along with each of the three possible protective factors. Three significant predictors emerged. The best predictor of emotional competence was general self-efficacy ($R^2 = .29$), which explained 29% of the variance. Number of negative life events (NLEQ) was entered next and explained an additional 3% of the variance, followed by attributional style, which explained an additional 1% of the variance. Locus of control was excluded from the equation. The overall model was significant, $F (3, 199) = 33.15, p < .001$, and explained 33% of the total variance.
### Table 7

**Stepwise Regression Analyses for Variables Predicting Emotional Competence**

#### Negative Life Events ($N = 203; R^2 = .33$)

<table>
<thead>
<tr>
<th></th>
<th>Step 1 ($R^2 = .30$)</th>
<th></th>
<th>Step 2 ($\Delta R^2 = .02$)</th>
<th></th>
<th>Step 3 ($\Delta R^2 = .01$)</th>
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<td>$B$</td>
<td>$SE$</td>
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<tr>
<td>GSE</td>
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<td>.09</td>
<td>-9.10***</td>
<td>-.82</td>
<td>.09</td>
</tr>
<tr>
<td>NLEQ</td>
<td>.05</td>
<td>.02</td>
<td>2.70**</td>
<td>.04</td>
<td>.02</td>
</tr>
<tr>
<td>EASQ</td>
<td>.19</td>
<td>.08</td>
<td>2.23*</td>
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</tr>
</tbody>
</table>

#### Daily Hassles ($N = 213; R^2 = .50$)

<table>
<thead>
<tr>
<th></th>
<th>Step 1 ($R^2 = .32$)</th>
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<th>Step 2 ($\Delta R^2 = .17$)</th>
<th></th>
<th>Step 3 ($\Delta R^2 = .01$)</th>
</tr>
</thead>
<tbody>
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<td>$t$</td>
<td>$B$</td>
<td>$SE$</td>
</tr>
<tr>
<td>ICSRLE</td>
<td>1.17</td>
<td>.12</td>
<td>10.05***</td>
<td>.95</td>
<td>.11</td>
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<tr>
<td>GSE</td>
<td>-.64</td>
<td>.08</td>
<td>-8.29***</td>
<td>-.59</td>
<td>.08</td>
</tr>
<tr>
<td>IELOC</td>
<td>.63</td>
<td>.27</td>
<td>2.34*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. GSE = General Self-Efficacy; NLEQ = negative life events questionnaire; EASQ = Expanded Attributional Style Questionnaire; ICSRLE = Inventory of College Students’ Recent Life Experiences (Daily Hassles); IELOC = Rotter’s Internal-External Locus of Control scale.*

*p < .05. **p < .01. ***p < .001.*
When level of daily hassles (ICSRLE) was examined along with each of the three possible protective factors, three significant predictors emerged. The best predictor of emotional competence, entered into the equation first, was daily hassles ($R^2 = .32$), which explained 32% of the variance. General self-efficacy was entered next and explained an additional 17% of the variance, followed by locus of control, which explained an additional 1% of the variance. Attributional style was excluded from the equation. The overall model was significant, $F (3, 209) = 70.62, p < .001$, and explained 50% of the total variance.

**Predictors of Overall Competence**

The impact of each of the predictor variables on overall competence was examined through two stepwise regressions. Results are presented in Table 8.

The first regression examined the predictive power of number of negative life events (NLEQ) along with each of the three possible protective factors. The best and only significant predictor of overall competence was general self-efficacy ($R^2 = .28$), which explained 28% of the variance. Number of negative life events, attributional style, and locus of control were excluded from the equation. The overall model was significant, $F (1, 185) = 70.36, p < .001$, and explained 28% of the total variance.

When level of daily hassles (ICSRLE) was examined along with each of the three possible protective factors, two significant predictors emerged. The best predictor of overall competence, entered into the equation first, was general self-efficacy ($R^2 = .28$), which explained 28% of the variance. Level of daily hassles was entered into the equation next and explained an additional 11% of the variance. Locus of control and
### Table 8

**Stepwise Regression Analyses for Variables Predicting Overall Competence**

**Negative Life Events (N = 187; R² = .28)**

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>GSE</td>
<td>.62</td>
<td>.07</td>
<td>8.39***</td>
</tr>
</tbody>
</table>

**Daily Hassles (N = 196; R² = .39)**

<table>
<thead>
<tr>
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<th>B</th>
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<th>B</th>
<th>SE B</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSE</td>
<td>.63</td>
<td>.07</td>
<td>8.64***</td>
<td>.51</td>
<td>.07</td>
<td>7.43***</td>
</tr>
<tr>
<td>ICSRLE</td>
<td>-.57</td>
<td>.10</td>
<td>-5.95***</td>
<td></td>
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</tr>
</tbody>
</table>

*Note. ICRLE = Inventory of College Students’ Recent Life Experiences (Daily Hassles); EASQ = Expanded Attributional Style Questionnaire; GSE = General Self-Efficacy.*

***p < .001.
attributional style were excluded from the equation. The overall model was significant, 
\[ F(2, 193) = 61.60, p < .001, \] and explained 39% of the total variance.

**Simultaneous Regression Analyses**

In order to examine the possible protective role of locus of control, attributional style, and self-efficacy, simultaneous regression analyses were conducted, using SPSS v. 10.

Predictor variables in each analysis included one of the life stress indices, one of the possible moderator indices, and an interaction term. The interaction term served as a means to examine whether the protective function of each possible moderator changed as a function of life stress. Each of the predictor variables was centered (i.e., mean score subtracted from each participant's score to obtain deviation scores) prior being entered into each regression. The interaction term was obtained by taking the product of the centered life stress variable and centered moderator variable. Following the recommendations of Aiken et al. (1991), the unstandardized (B) rather than standardized (β) solutions were examined, as unstandardized regression coefficients are not impacted by centering and are more appropriate in cases where product (i.e., interaction) terms are present.

**Locus of Control as a Protective Factor**

*Academic competence.* Two simultaneous regressions examined the ability of locus of control to moderate the relationship between life stress and academic
competence. In the simultaneous regression of negative life events and locus of control on academic competence, the overall model was not significant, $F(3, 192) = .60, p = .61$, explaining only 1% of the variance. Neither negative life events nor locus of control were significant predictors of academic competence and no significant interaction was found (see Table 9).

In the simultaneous regression of daily hassles and locus of control on academic competence, the overall model was significant, $F(3, 201) = 8.32, p < .001$, explaining 11% of the variance (see Table 10). A significant interaction was found between daily hassles and locus of control in predicting academic competence ($t[201] = 2.65, p < .01$). A graphic representation of this interaction is presented in Figure 1. The interaction was also examined statistically, as was recommended by Aiken et al. (1991), by looking at the impact of life stress on academic competence at levels of locus of control, one standard deviation above and below the mean (representing more external and internal control, respectively). When locus of control was more external (1 $SD$ above the mean), daily hassles was not a significant predictor of academic competence ($t[201] = -1.12, p = .26$). When locus of control was more internal (1 $SD$ below the mean), daily hassles was a significant predictor of academic competence ($t[201] = -4.91, p < .001$), with higher stress being associated with lower academic competence for internals. The predictive value of locus of control was also examined at high and low levels of stress. At high levels of stress (1 $SD$ above the mean), locus of control was a significant predictor of academic competence ($t[201] = 2.56, p = .01$), with external locus of control being associated with higher competence. At low levels of stress (1 $SD$ below the mean), locus
Table 9

*Simultaneous Regression of Number of Negative Life Events and Locus of Control on Academic Competence (N = 196)*

<table>
<thead>
<tr>
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<th>B</th>
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<tbody>
<tr>
<td>NLEQ</td>
<td>.06</td>
<td>.06</td>
<td>1.07</td>
<td>.287</td>
</tr>
<tr>
<td>IELOC</td>
<td>.92</td>
<td>1.01</td>
<td>.91</td>
<td>.363</td>
</tr>
<tr>
<td>NLEQ * IELOC</td>
<td>.11</td>
<td>.31</td>
<td>.36</td>
<td>.718</td>
</tr>
</tbody>
</table>

*Note. R² = .01. NLEQ = Negative life events questionnaire; IELOC = Rotter’s Internal-External Locus of Control scale.*

Table 10

*Simultaneous Regression of Daily Hassles and Locus of Control on Academic Competence (N = 205)*

<table>
<thead>
<tr>
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<th>B</th>
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</thead>
<tbody>
<tr>
<td>ICSRLE</td>
<td>-1.43</td>
<td>.35</td>
<td>-4.04</td>
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<tr>
<td>IELOC</td>
<td>.93</td>
<td>.91</td>
<td>1.02</td>
<td>.308</td>
</tr>
<tr>
<td>ICSRLE * IELOC</td>
<td>5.38</td>
<td>2.03</td>
<td>2.65</td>
<td>.009</td>
</tr>
</tbody>
</table>

*Note. R² = .11. ICSRLE = Inventory of College Students’ Recent Life Experiences (daily hassles); IELOC = Rotter’s Internal-External Locus of Control scale.*
Figure 1. Interactions between stress (daily hassles) and locus of control (internal versus external) in predicting academic competence (cumulative grade point average).
of control was not a significant predictor of academic competence ($t[201] = -1.06, p = .29$).

**Social competence.** In the simultaneous regression of negative life events and locus of control on social competence, the overall model was only marginally significant, $F(3, 206) = 2.61, p = .05$, explaining 4% of the total variance. Locus of control was the only significant predictor of social competence ($t[206] = -2.37, p < .05$). Number of negative life events was not a significant predictor and there was no significant interaction (see Table 11).

In the simultaneous regression of daily hassles and locus of control on social competence, the overall model was significant, $F(3, 216) = 5.46, p = .001$, explaining 7% of the total variance (see Table 12). A significant interaction was found between daily hassles and locus of control in predicting social competence ($t[216] = -2.37, p < .05$). A graphic representation of this interaction is presented in Figure 2. The interaction was also examined statistically. When locus of control was more external (1 SD above the mean), level of daily hassles was a significant predictor of social competence ($t[216] = -2.88, p < .01$). When locus of control was more internal (1 SD below the mean), daily hassles was not a significant predictor of social competence ($t[216] = .30, p = .76$). The influence of locus of control was also examined at high and low levels of stress. At high levels of stress (1 SD above the mean), locus of control was a significant predictor of social competence ($t[216] = -3.54, p < .001$), with internal locus of control being associated with higher competence. At low levels of stress (1 SD below the mean), locus of control was not a significant predictor of social competence ($t[216] = -.39, p = .70$).
Table 11

Simultaneous Regression of Number of Negative Life Events and Locus of Control on Social Competence (N = 210)

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>NLEQ</td>
<td>.01</td>
<td>.01</td>
<td>.86</td>
<td>.392</td>
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<tr>
<td>IELOC</td>
<td>-.53</td>
<td>.22</td>
<td>-2.37</td>
<td>.019</td>
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<tr>
<td>NLEQ * IELOC</td>
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<td>.07</td>
<td>1.23</td>
<td>.219</td>
</tr>
</tbody>
</table>

Note. $R^2 = .04$. NLEQ = Negative life events questionnaire; IELOC = Rotter's Internal-External Locus of Control scale.

Table 12

Simultaneous Regression of Daily Hassles and Locus of Control on Social Competence (N = 220)

<table>
<thead>
<tr>
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<th>B</th>
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</tr>
</thead>
<tbody>
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<td>.46</td>
<td>-2.37</td>
<td>.019</td>
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</table>

Note. $R^2 = .07$. ICSRLE = Inventory of College Students' Recent Life Experiences (daily hassles); IELOC = Rotter's Internal-External Locus of Control scale.
Figure 2. Interactions between stress (daily hassles) and locus of control (internal versus external) in predicting social competence (mean ICQ score).
**Emotional competence.** In the simultaneous regression of negative life events and locus of control on emotional competence, the overall model was significant, $F (3, 207) = 5.14, p < .01$ and explained 7% of the total variance. Locus of control was the only significant predictor of emotional competence ($t[207] = 3.61, p < .001$). Number of negative life events was not a significant predictor of emotional competence and there was no significant interaction (see Table 13).

In the simultaneous regression of daily hassles and locus of control on emotional competence, the overall model was significant, $F (3, 217) = 43.68, p < .001$, explaining 38% of the total variance. Both daily hassles and locus of control were significant predictors of emotional competence ($t[217] = 10.25, p < .001$ and $t[217] = 4.17, p < .001$, respectively). There was no significant interaction (see Table 14).

**Overall competence.** In the simultaneous regression of negative life events and locus of control on overall competence, the overall model approached significance, $F (3, 191) = 2.24, p = .09$, explaining 3% of the variance. Locus of control was the only significant predictor of overall competence ($t[191] = -2.08, p < .05$). Number of negative life events was not a significant predictor of overall competence and no significant interaction was found (see Table 15).

In the simultaneous regression of daily hassles and locus of control on overall competence, the overall model was significant, $F (3, 200) = 21.54, p < .001$, explaining 24% of the total variance. Both daily hassles and locus of control were significant predictors of overall competence ($t[200] = -7.36, p < .001$ and $t[200] = -2.31, p < .05$, respectively). There was no significant interaction (see Table 16).
Table 13

**Simultaneous Regression of Number of Negative Life Events and Locus of Control on Emotional Competence (N = 211)**

<table>
<thead>
<tr>
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<td>.202</td>
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<tr>
<td>IELOC</td>
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<td>.35</td>
<td>3.61</td>
<td>.000</td>
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<tr>
<td>NLEQ * IELOC</td>
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<td>.11</td>
<td>-.66</td>
<td>.509</td>
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</table>

*Note. R^2 = .07. NLEQ = Negative life events questionnaire; IELOC = Rotter's Internal-External Locus of Control scale.*

Table 14

**Simultaneous Regression of Daily Hassles and Locus of Control on Emotional Competence (N = 221)**

<table>
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<td>.000</td>
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<td>.000</td>
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</tbody>
</table>

*Note. R^2 = .49. ICSRLE = Inventory of College Students' Recent Life Experiences (daily hassles); IELOC = Rotter's Internal-External Locus of Control scale.*
Table 15

**Simultaneous Regression of Number of Negative Life Events and Locus of Control on Overall Competence (N = 195)**

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE B</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>NLEQ</td>
<td>.01</td>
<td>.02</td>
<td>.78</td>
<td>.436</td>
</tr>
<tr>
<td>IELOC</td>
<td>-.64</td>
<td>.31</td>
<td>-2.08</td>
<td>.038</td>
</tr>
<tr>
<td>NLEQ * IELOC</td>
<td>.12</td>
<td>.09</td>
<td>1.28</td>
<td>.203</td>
</tr>
</tbody>
</table>

*Note. R² = .03. NLEQ = Negative life events questionnaire; IELOC = Rotter’s Internal-External Locus of Control scale.*

Table 16

**Simultaneous Regression of Daily Hassles and Locus of Control on Overall Competence (N = 204)**

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE B</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICSRLE</td>
<td>-.75</td>
<td>.10</td>
<td>-7.36</td>
<td>.000</td>
</tr>
<tr>
<td>IELOC</td>
<td>-.60</td>
<td>.26</td>
<td>-2.31</td>
<td>.022</td>
</tr>
<tr>
<td>ICSRLE* IELOC</td>
<td>-.37</td>
<td>.59</td>
<td>-0.63</td>
<td>.531</td>
</tr>
</tbody>
</table>

*Note. R² = .24. ICSRLE = Inventory of College Students’ Recent Life Experiences (daily hassles); IELOC = Rotter’s Internal-External Locus of Control scale.*
Attributional Style as a Protective Factor

*Academic competence.* In the simultaneous regression of negative life events and attributional style on academic competence, the overall model was not significant, $F(3, 184) = 1.17, p = .32$, explaining only 2% of the variance. Neither negative life events nor locus of control were significant predictors of academic competence and no significant interaction was found (see Table 17).

In the simultaneous regression of daily hassles and attributional style on academic competence, the overall model was significant, $F(3, 193) = 8.53, p < .001$, explaining 12% of the total variance. Both daily hassles and attributional style were significant predictors of academic competence ($r[193] = -4.41, p < .001$ and $r[193] = 2.53, p < .05$, respectively). The interaction approached significance (see Table 18).

*Social competence.* In the simultaneous regression of negative life events and attributional style on social competence, the overall model approached significance, $F(3, 198) = 2.09, p = .10$, explaining 3% of the total variance. Attributional style was a significant predictor of social competence ($r[198] = -2.15, p < .05$). Number of negative life events was not a significant predictor and there was no significant interaction (see Table 19).

In the simultaneous regression of daily hassles and attributional style on social competence, the overall model was significant, $F(3, 208) = 3.63, p < .05$, explaining 5% of the total variance. Attributional style was the only significant predictor of social competence ($r[208] = -2.73, p < .01$). Number of negative life events was not a significant predictor and there was no significant interaction (see Table 20).
Table 17

Simultaneous Regression of Number of Negative Life Events and Attributional Style on Academic Competence \((N = 188)\)

<table>
<thead>
<tr>
<th></th>
<th>(B)</th>
<th>(SE) (B)</th>
<th>(t)</th>
<th>(p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NLEQ</td>
<td>.03</td>
<td>.06</td>
<td>.61</td>
<td>.546</td>
</tr>
<tr>
<td>EASQ</td>
<td>.46</td>
<td>.28</td>
<td>1.63</td>
<td>.105</td>
</tr>
<tr>
<td>NLEQ * EASQ</td>
<td>.05</td>
<td>.08</td>
<td>.56</td>
<td>.579</td>
</tr>
</tbody>
</table>

*Note. \(R^2 = .02\). NLEQ = Negative life events questionnaire; EASQ = Expanded Attributional Style Questionnaire.*

Table 18

Simultaneous Regression of Daily Hassles and Attributional Style on Academic Competence \((N = 197)\)

<table>
<thead>
<tr>
<th></th>
<th>(B)</th>
<th>(SE) (B)</th>
<th>(t)</th>
<th>(p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICSRLE</td>
<td>-2.13</td>
<td>.48</td>
<td>-4.41</td>
<td>.000</td>
</tr>
<tr>
<td>EASQ</td>
<td>.67</td>
<td>.27</td>
<td>2.53</td>
<td>.012</td>
</tr>
<tr>
<td>ICSRLE * EASQ</td>
<td>-.97</td>
<td>.56</td>
<td>-1.74</td>
<td>.084</td>
</tr>
</tbody>
</table>

*Note. \(R^2 = .12\). ICSRLE = Inventory of College Students’ Recent Life Experiences (daily hassles); EASQ = Expanded Attributional Style Questionnaire.*
Table 19

Simultaneous Regression of Number of Negative Life Events and Attributional Style on Social Competence (N = 202)

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE B</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>NLEQ</td>
<td>.01</td>
<td>.01</td>
<td>.61</td>
<td>.544</td>
</tr>
<tr>
<td>EASQ</td>
<td>-.13</td>
<td>.06</td>
<td>-2.15</td>
<td>.033</td>
</tr>
<tr>
<td>NLEQ * EASQ</td>
<td>-.02</td>
<td>.02</td>
<td>-1.19</td>
<td>.236</td>
</tr>
</tbody>
</table>

Note. $R^2 = .03$. NLEQ = Negative life events questionnaire; EASQ = Expanded Attributional Style Questionnaire.

Table 20

Simultaneous Regression of Daily Hassles and Attributional Style on Social Competence (N = 212)

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE B</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICSRLE</td>
<td>-.10</td>
<td>.08</td>
<td>-1.16</td>
<td>.248</td>
</tr>
<tr>
<td>EASQ</td>
<td>-.16</td>
<td>.06</td>
<td>-2.73</td>
<td>.007</td>
</tr>
<tr>
<td>ICSRLE * EASQ</td>
<td>-.14</td>
<td>.12</td>
<td>-1.12</td>
<td>.264</td>
</tr>
</tbody>
</table>

Note. $R^2 = .05$. ICSRLE = Inventory of College Students' Recent Life Experiences (daily hassles); EASQ = Expanded Attributional Style Questionnaire.
**Emotional competence.** In the simultaneous regression of negative life events and attributional style on emotional competence, the overall model was significant, $F(3, 199) = 3.11, p < .05$, explaining 5% of the total variance. Attributional style was the only significant predictor of emotional competence ($t_{199} = 2.73, p < .01$). Number of negative life events was not a significant predictor of emotional competence and there was no significant interaction (see Table 21).

In the simultaneous regression of daily hassles and attributional style on emotional competence, the overall model was significant, $F(3, 209) = 36.95, p < .001$, explaining 35% of the total variance. Both daily hassles and attributional style were significant predictors of emotional competence ($t_{209} = 9.62, p < .001$ and $t_{209} = 2.58, p < .05$, respectively). The interaction term was not significant (see Table 22).

**Overall competence.** In the simultaneous regression of negative life events and attributional style on overall competence, the overall model was not significant, $F(3, 183) = .60, p = .62$, explaining only 1% of the variance. Neither negative life events nor attributional style were significant predictors of overall competence and no significant interaction was found (see Table 23).

In the simultaneous regression of daily hassles and attributional style on overall competence, the overall model was significant, $F(3, 192) = 19.46, p < .001$, explaining 23% of the total variance. A significant interaction was also found between daily hassles and attributional style, in predicting overall competence ($t_{192} = -1.99, p < .05$; see Table 24). A graphic representation of this interaction is presented in Figure 3. The interaction was also examined statistically, by looking at the impact of life stress on overall competence at levels of attributional style one standard deviation above and
Table 21

**Simultaneous Regression of Number of Negative Life Events and Attributional Style on Emotional Competence (N = 203)**

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE B</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>NLEQ</td>
<td>.02</td>
<td>.02</td>
<td>1.01</td>
<td>.315</td>
</tr>
<tr>
<td>EASQ</td>
<td>.27</td>
<td>.10</td>
<td>2.73</td>
<td>.007</td>
</tr>
<tr>
<td>NLEQ * EASQ</td>
<td>.01</td>
<td>.03</td>
<td>.31</td>
<td>.760</td>
</tr>
</tbody>
</table>

*Note. R² = .05. NLEQ = Negative life events questionnaire; EASQ = Expanded Attributional Style Questionnaire.*

Table 22

**Simultaneous Regression of Daily Hassles and Attributional Style on Emotional Competence (N = 213)**

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE B</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICSRLE</td>
<td>1.12</td>
<td>.12</td>
<td>9.62</td>
<td>.000</td>
</tr>
<tr>
<td>EASQ</td>
<td>.22</td>
<td>.08</td>
<td>2.58</td>
<td>.011</td>
</tr>
<tr>
<td>ICSRLE * EASQ</td>
<td>.18</td>
<td>.17</td>
<td>1.05</td>
<td>.295</td>
</tr>
</tbody>
</table>

*Note. R² = .35. ICSRLE = Inventory of College Students’ Recent Life Experiences (daily hassles); EASQ = Expanded Attributional Style Questionnaire.*
### Table 23

**Simultaneous Regression of Number of Negative Life Events and Attributional Style on Overall Competence (N = 187)**

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SEB</th>
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<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>NLEQ</td>
<td>.01</td>
<td>.02</td>
<td>.56</td>
<td>.578</td>
</tr>
<tr>
<td>EASQ</td>
<td>-.11</td>
<td>.09</td>
<td>-1.26</td>
<td>.210</td>
</tr>
<tr>
<td>NLEQ * EASQ</td>
<td>-.00</td>
<td>.03</td>
<td>-.17</td>
<td>.862</td>
</tr>
</tbody>
</table>

*Note. R² = .01. NLEQ = Negative life events questionnaire; EASQ = Expanded Attributional Style Questionnaire.*

### Table 24

**Simultaneous Regression of Daily Hassles and Attributional Style on Overall Competence (N = 196)**

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SEB</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICSRLE</td>
<td>-.74</td>
<td>.11</td>
<td>-7.07</td>
<td>.000</td>
</tr>
<tr>
<td>EASQ</td>
<td>-.07</td>
<td>.08</td>
<td>-.88</td>
<td>.382</td>
</tr>
<tr>
<td>ICSRLE * EASQ</td>
<td>-.32</td>
<td>.16</td>
<td>-1.99</td>
<td>.049</td>
</tr>
</tbody>
</table>

*Note. R² = .23. ICSRLE = Inventory of College Students’ Recent Life Experiences (daily hassles); EASQ = Expanded Attributional Style Questionnaire.*
Figure 3. Interactions between stress (daily hassles) and attributional style (optimistic versus pessimistic) in predicting overall competence.
below the mean (representing more pessimistic and optimistic attributional styles, respectively). Level of daily hassles was a significant predictor of overall competence for both pessimistic attributional style (1 SD above the mean; \( t(192) = -6.67, p < .001 \)) and optimistic attributional style (1 SD below the mean; \( t(192) = -3.96, p < .001 \)), however, the predictive power of daily hassles was greater for those with a more pessimistic attributional style. The influence of attributional style was also examined at high and low levels of stress. At high levels of stress (1 SD above the mean), attributional style was not a significant predictor of overall competence, although it approached significance (\( t(192) = -1.90, p = .06 \)). At even higher levels of stress (2 SD above the mean), attributional style was a significant predictor of overall competence (\( t(192) = -2.09, p < .05 \)). At low levels of stress (1 SD below the mean), attributional style was not a significant predictor of overall competence (\( t(192) = .68, p = .50 \)).

*Self-Efficacy as a Protective Factor*

*Academic competence.* In the simultaneous regression of negative life events and general self-efficacy on academic competence, the overall model was significant, \( F(3, 192) = 3.71, p < .05 \), explaining 6% of the variance. General self-efficacy was the only significant predictor of academic competence (\( t(192) = 2.86, p < .01 \)). Number of negative life events was not a significant predictor of academic competence and there was no significant interaction (see Table 25).

In the simultaneous regression of daily hassles and general self-efficacy on academic competence, the overall model was significant, \( F(3, 201) = 6.86, p < .001 \), explaining 9% of the total variance. Level of daily hassles was a significant predictor of
academic competence ($r[201] = -3.34, p = .001$) and general self-efficacy was only marginally significant ($r[201] = 1.95, p = .05$). The interaction term was not significant (see Table 26).

**Social competence.** In the simultaneous regression of negative life events and general self-efficacy on social competence, the overall model was significant $F(3, 206) = 12.39, p < .001$, explaining 15% of the total variance. General self-efficacy was the only significant predictor of social competence ($r[206] = 5.99, p < .001$). Number of negative life events was not a significant predictor of social competence and there was no significant interaction (see Table 27).

In the simultaneous regression of daily hassles and general self-efficacy on social competence, the overall model was significant, $F(3, 216) = 13.39, p < .001$, explaining 16% of the total variance. General self-efficacy was the only significant predictor of social competence ($r[216] = 5.89, p < .001$). Number of negative life events was not a significant predictor of social competence and there was no significant interaction (see Table 28).

**Emotional competence.** In the simultaneous regression of negative life events and general self-efficacy on emotional competence, the overall model was significant $F(3, 207) = 33.35, p < .001$ and explained 33% of the total variance. Both number of negative life events and general self-efficacy were significant predictors of emotional competence ($r[207] = 2.71, p < .01$ and $r[207] = -9.87, p < .001$). There was no significant interaction (see Table 29).
Table 25

Simultaneous Regression of Number of Negative Life Events and General Self-Efficacy on Academic Competence (N = 196)

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>NLEQ</td>
<td>.03</td>
<td>.05</td>
<td>.56</td>
<td>.577</td>
</tr>
<tr>
<td>GSE</td>
<td>.78</td>
<td>.27</td>
<td>2.86</td>
<td>.005</td>
</tr>
<tr>
<td>NLEQ * GSE</td>
<td>-.12</td>
<td>.09</td>
<td>-1.31</td>
<td>.192</td>
</tr>
</tbody>
</table>

Note. $R^2 = .06$. NLEQ = Negative life events questionnaire; GSE = General Self-Efficacy.

Table 26

Simultaneous Regression of Daily Hassles and General Self-Efficacy on Academic Competence (N = 205)

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE</th>
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<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICSRLE</td>
<td>-1.23</td>
<td>.37</td>
<td>-3.34</td>
<td>.001</td>
</tr>
<tr>
<td>GSE</td>
<td>.52</td>
<td>.27</td>
<td>1.95</td>
<td>.053</td>
</tr>
<tr>
<td>ICSRLE * GSE</td>
<td>.21</td>
<td>.54</td>
<td>.39</td>
<td>.697</td>
</tr>
</tbody>
</table>

Note. $R^2 = .09$. ICSRLE = Inventory of College Students’ Recent Life Experiences (daily hassles); GSE = General Self-Efficacy.
Table 27

**Simultaneous Regression of Number of Negative Life Events and General Self-Efficacy on Social Competence (N = 210)**

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE B</th>
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<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>NLEQ</td>
<td>.00</td>
<td>.01</td>
<td>.04</td>
<td>.971</td>
</tr>
<tr>
<td>GSE</td>
<td>.35</td>
<td>.06</td>
<td>5.99</td>
<td>.000</td>
</tr>
<tr>
<td>NLEQ * GSE</td>
<td>-.02</td>
<td>.02</td>
<td>-.99</td>
<td>.322</td>
</tr>
</tbody>
</table>

*Note. R^2 = .15. NLEQ = Negative life events questionnaire; GSE = General Self-Efficacy.*

Table 28

**Simultaneous Regression of Daily Hassles and General Self-Efficacy on Social Competence (N = 220)**

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE B</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICSRLE</td>
<td>-.03</td>
<td>.08</td>
<td>-.37</td>
<td>.709</td>
</tr>
<tr>
<td>GSE</td>
<td>.34</td>
<td>.06</td>
<td>5.89</td>
<td>.000</td>
</tr>
<tr>
<td>ICSRLE * GSE</td>
<td>.07</td>
<td>.12</td>
<td>.60</td>
<td>.547</td>
</tr>
</tbody>
</table>

*Note. R^2 = .16. ICSRLE = Inventory of College Students' Recent Life Experiences (daily hassles); GSE = General Self-Efficacy.*
In the simultaneous regression of daily hassles and general self-efficacy on emotional competence, the overall model was significant, \( F(3, 217) = 70.26, p < .001 \), explaining 49% of the total variance. Both daily hassles and general self-efficacy were significant predictors of emotional competence (\( t[217] = 9.03, p < .001 \) and \( t[217] = -8.44, p < .001 \), respectively). There was no significant interaction (see Table 30).

**Overall competence.** In the simultaneous regression of negative life events and general self-efficacy on overall competence, the overall model was significant, \( F(3, 191) = 28.82, p < .001 \), explaining 31% of the variance. General self-efficacy was the only significant predictor of overall competence (\( t[191] = 8.99, p < .001 \)). Number of negative life events was not a significant predictor of overall competence and there was no significant interaction (although the interaction approached significance; see Table 31).

In the simultaneous regression of daily hassles and general self-efficacy on overall competence, the overall model was significant, \( F(3, 200) = 45.94, p < .001 \), explaining 41% of the total variance. Both daily hassles and general self-efficacy were significant predictors of overall competence (\( t[200] = -6.08, p < .001 \) and \( t[200] = 7.91, p < .001 \), respectively). There was no significant interaction (see Table 32).
Table 29

Simultaneous Regression of Number of Negative Life Events and General Self-Efficacy on Emotional Competence (N = 211)

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE B</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>NLEQ</td>
<td>.04</td>
<td>.02</td>
<td>2.71</td>
<td>.007</td>
</tr>
<tr>
<td>GSE</td>
<td>-.82</td>
<td>.08</td>
<td>-9.87</td>
<td>.000</td>
</tr>
<tr>
<td>NLEQ * GSE</td>
<td>.02</td>
<td>.03</td>
<td>.71</td>
<td>.477</td>
</tr>
</tbody>
</table>

*Note. R² = .33. NLEQ = Negative life events questionnaire; GSE = General Self-Efficacy.*

Table 30

Simultaneous Regression of Daily Hassles and General Self-Efficacy on Emotional Competence (N = 221)

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE B</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICSRLE</td>
<td>.93</td>
<td>.10</td>
<td>9.03</td>
<td>.000</td>
</tr>
<tr>
<td>GSE</td>
<td>-.63</td>
<td>.08</td>
<td>-8.44</td>
<td>.000</td>
</tr>
<tr>
<td>ICSRLE * GSE</td>
<td>.01</td>
<td>.15</td>
<td>.10</td>
<td>.924</td>
</tr>
</tbody>
</table>

*Note. R² = .49. ICSRLE = Inventory of College Students' Recent Life Experiences (daily hassles); GSE = General Self-Efficacy.*
Table 31

Simultaneous Regression of Number of Negative Life Events and Self-Efficacy on Overall Competence (N = 195)

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE B</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>NLEQ</td>
<td>-.01</td>
<td>.01</td>
<td>-.58</td>
<td>.561</td>
</tr>
<tr>
<td>GSE</td>
<td>.65</td>
<td>.07</td>
<td>8.99</td>
<td>.000</td>
</tr>
<tr>
<td>NLEQ * GSE</td>
<td>-.04</td>
<td>.02</td>
<td>-1.88</td>
<td>.062</td>
</tr>
</tbody>
</table>

Note. $R^2 = .31$. NLEQ = Negative life events questionnaire; GSE = General Self-Efficacy.

Table 32

Simultaneous Regression of Daily Hassles and Self-Efficacy on Overall Competence (N = 204)

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE B</th>
<th>t</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICSRLE</td>
<td>-.57</td>
<td>.09</td>
<td>-6.08</td>
<td>.000</td>
</tr>
<tr>
<td>GSE</td>
<td>.53</td>
<td>.07</td>
<td>7.91</td>
<td>.000</td>
</tr>
<tr>
<td>ICSRLE * GSE</td>
<td>-.00</td>
<td>.14</td>
<td>-.02</td>
<td>.985</td>
</tr>
</tbody>
</table>

Note. $R^2 = .41$. ICSRLE = Inventory of College Students' Recent Life Experiences (daily hassles); GSE = General Self-Efficacy.
CHAPTER IV

DISCUSSION

The purpose of the present study was to investigate the ability of locus of control, attributional style, and self-efficacy to act as protective factors, moderating the relationship between life stress (both negative life events and daily hassles) and current competence across various domains. Given that research on resilience and protective factors commonly assumes a negative relationship between life stress and current competence, another related purpose was to examine this relationship directly, to determine whether such an assumption is in fact justified.

Relationship Between Life Stress and Current Competence

The relationship between life stress and current competence is discussed here, prior to the examination of possible moderators, given that this relationship is of great consequence to further analyses, which are based on the “common sense” assumption that these life stressors are, in fact, associated with current adjustment.

The relationship between life stress and current competence, with the present data, differed as a function of the type of life stress under examination. Negative life events (more acute stressors) and daily hassles (more chronic stressors) showed different patterns of association with competence variables. Given the discrepant findings across measures of life stress, results relating to number of negative life events and level of daily hassles will be discussed separately.
**Importance of Negative Life Events**

When the relationship between number of negative life events and current competence was examined through correlational analyses, no significant relationships emerged. That is, the number of negative life events reported by participants was not related to their reported academic, social, emotional, or overall competence. When the influence of locus of control, attributional style, and self-efficacy were controlled for, however, a significant relationship emerged between number of negative life events and emotional competence ($r = .15, p < .05$). The emergence of a significant correlation between number of negative life events and emotional competence, only after accounting for locus of control, attributional style, and general self-efficacy, suggests that one or more of these possible protective factors had an impact on the relationship between number of negative life events and emotional competence.

Similar results emerged when the relationship between number of negative life events and current academic, social, emotional, and overall competence was examined through regression analyses. The number of negative life events reported by participants did not emerge as a significant predictor of academic, social, or overall competence in stepwise or simultaneous regression analyses. When the relative predictive power of negative life events, locus of control, attributional style, and self-efficacy was examined through stepwise regression analyses, number of negative life events emerged as the second best predictor of emotional competence, after self-efficacy, and explained 2% of the remaining variance. Number of negative life events was also a significant predictor of emotional competence in a simultaneous regression with self-efficacy; however, the predictive power was again low. A significant relationship between number of negative
life events and emotional competence did not emerge in simultaneous regression analyses with locus of control or attributional style.

The lack of a significant or consistent relationship between number of negative life events and current academic, social, and overall competence is not consistent with past research, which has shown a low to moderate correlation between negative life events and adjustment (Luthar, 1991; Luthar, Doernberger, & Zigler, 1993; Luthar & Zigler, 1991; Masten et al., 1988; Tiet et al., 1998). Kanner et al. (1981) suggested an average correlation of .12 between life events and “health outcomes,” whereas with the present data, the mean correlation with competence, averaged across the four competence domains, was .06. The findings with the present data, relating to negative life events, may be due to the use of a life events questionnaire that focused solely on negative, uncontrollable events, with analyses being conducted on the total number of negative life events reported, without consideration of reported impact. The decision to use this events questionnaire, as opposed to one of the life events inventories, was made in order to be stringent and minimize the chance of superfluous correlations, due to possible confounding of controllable life events and judgement of impact of events, with current adjustment. It may be that once possible confounds are minimized, as they were in the present study, the relationship between past negative life events and current competence is in fact, quite small. The finding that number of negative life events was not related to current academic, social, or overall competence, suggests that the experience of past acute stressors may not be as likely to impact long-term adjustment as was previously believed.
Importance of Daily Hassles

When the relationship between level of daily hassles reported by participants and current academic, social, emotional, and overall competence was examined, daily hassles was found to be significantly related to participants' academic, emotional, and overall competence ($p < .001$), with correlations of -.27, .57, and -.47, respectively. Level of daily hassles was not, however, related to participants' reported social competence ($p > .05$).

When examined through stepwise regression analyses, the level of daily hassles reported by participants emerged as a better predictor of academic and emotional competence than did locus of control, attributional style, and self-efficacy. Level of daily hassles was also the second best predictor of overall competence. The amount of variance in academic, emotional, and overall competence, explained by daily hassles was 7%, 32%, and 11%, respectively. Level of daily hassles was also associated with academic, emotional, and overall competence in individual simultaneous regressions with locus of control, attributional style, and self-efficacy. Level of daily hassles was not found to significantly predict participants' social competence, although the relationship approached significance in a simultaneous regression with locus of control ($p = .08$). The findings of stepwise and simultaneous regression analyses, with respect to social competence, were consistent with results of the correlational analysis. It is interesting that daily hassles consistently showed no relationship with social competence, given the relatively higher predictive power observed in the present data, of daily hassles in other competence domains.
Relative Importance of Negative Life Events Versus Daily Hassles

In comparing the predictive power of the two life stress indices, the finding that daily hassles was a better predictor of current academic, emotional, and overall competence than negative life events was consistent with the findings of past research (Kanner et al., 1981; Munroe, 1983; Weinberger, Hiner, & Tierney, 1987). The differences in the association of negative life events and daily hassles with competence may be due, at least in part, to the length of time since these events occurred (during past month for daily hassles versus occurrence of negative life events at any time in life). Given the recency and more chronic nature of daily hassles, these types of stressors are therefore likely to be more proximal risk factors than negative life events. That is, these minor daily annoyances tend have a more direct impact on current daily functioning than past events. The academic success of university students, for example, may be more directly impeded by financial difficulties or time management problems than by the sadness and trauma associated with a past tragedy.

The findings of the present study may call into question the long-term impact of more acute life stressors, which have often been assumed to have large effects on later adjustment. Daily hassles, however, did appear to be predictive of academic, emotional, and overall competence in the present study. Thus, it is possible that attributes such as locus of control, attributional style, and self-efficacy may moderate that relationship between daily hassles and current academic, emotional, and overall competence to some degree. Examination of partial correlations suggests that these attributes may also moderate the relationship between number of negative life events and current emotional competence; However, the potential influence of these attributes is limited by the
relatively weak and inconsistent relationship between number of negative life events and current emotional competence.

Relative Importance of Life Stress and Possible Protective Factors in Predicting Current Competence

Within the domains of academic, social, emotional, and overall competence, the predictive value of locus of control, attributional style, and self-efficacy was examined relative to one another and relative to life stress, through stepwise regression analyses. Separate analyses were also conducted for each type of life stress (number of negative life events and daily hassles), in order to assess the possible moderating role of locus of control, attributional style, and self-efficacy in relation to each of the life stress indices separately. A summary of results pertaining to each of the four competence domains will be presented first, followed by a more general discussion of the importance of each possible protective factor.

Relative Importance of Predictors Within Each Competence Domain

Predictors of academic competence. When the predictive power of number of negative life events, along with each of the possible protective factors was examined through a stepwise regression, self-efficacy was the only factor that significantly predicted current academic competence. The predictive ability of self-efficacy, though significant, was quite low, explaining only 4% of the variance in participants' cumulative grade point average.

Conversely, when daily hassles was the included life stress variable, three factors
significantly predicted academic competence. The best predictor, in this case, was daily hassles, followed by attributional style and self-efficacy. The amount of variance predicted by each of these three variables was 7%, 3%, and 2%, respectively. Together, these variables predicted 12% of the total variance in participants’ cumulative grade point average. Locus of control did not contribute significantly to the prediction of academic competence.

Predictors of social competence. When the predictive power of number of negative life events, along with each of the three possible protective factors was examined, self-efficacy was the only factor that significantly predicted current social competence. The predictive value of self-efficacy, though significant, was only moderate, explaining 13% of the variance in participants’ social competence.

Conversely, when daily hassles was the included life stress variable, two factors significantly predicted social competence. The best predictor, in this case, was self-efficacy, followed by attributional style. The amount of variance predicted by each of these two variables was 14% and 2%, respectively. Together, these variables predicted 16% of the total variance in participants’ social competence. Locus of control did not contribute significantly to the prediction of social competence.

Predictors of emotional competence. When the predictive power of number of negative life events, along with each of the possible protective factors was examined, three factors significantly predicted emotional competence. The best predictor, in this case, was self-efficacy, followed by number of negative life events and attributional style.
The amount of variance predicted by each of these three variables was 30%, 2%, and 1%, respectively. Together, these variables predicted 33% of the total variance in participants' emotional competence. Locus of control did not contribute significantly to the prediction of emotional competence.

When daily hassles was the included life stress variable, three factors significantly predicted emotional competence. The best predictor, in this case, was daily hassles, followed by self-efficacy and locus of control. In contrast to the regression with negative life events, when daily hassles were considered, the predictive power of locus of control became significant, while the predictive power of attributional style became nonsignificant. The amount of variance predicted daily hassles, self-efficacy, and locus of control was 32%, 17%, and 1%, respectively. Together, these three variables predicted 50% of the total variance in participants' emotional competence.

**Predictors of overall competence.** When the predictive power of number of negative life events, along with each of the possible protective factors was examined, participants' level of self-efficacy was the only factor that significantly predicted their current overall competence. The predictive ability of self-efficacy, though significant, was only moderate, explaining 28% of the variance in participants' overall competence.

Conversely, when daily hassles was the included life stress variable, two factors significantly predicted overall competence. The best predictor, in this case, was self-efficacy, followed by daily hassles. The amount of variance predicted by each of these two variables was 28% and 11%, respectively. Together, these variables predicted 39% of the variance in participants' overall competence. Locus of control and
attributional style did not contribute significantly to the prediction of overall competence.

**General Overview Regarding the Importance of Each Predictor**

When examining the importance of locus of control, attributional style, and self-efficacy, relative to the two life stress variables, results suggest that level of daily hassles was the most powerful predictor of participants’ current academic and emotional competence, although it was not a significant predictor of social competence. Self-efficacy, one of the possible protective factors, was the best predictor of social and overall competence, both in regressions with daily hassles and with number of negative life events. In contrast to daily hassles, number of negative life events only emerged as a significant predictor in one of the four regressions, where it was the second best predictor of emotional competence and added only 2% to the predictive power.

When comparing the relative predictive power of locus of control, attributional style, and self-efficacy with the present data, self-efficacy emerged as the most consistent predictor of current competence or adjustment. In fact, general self-efficacy was a significant predictor in all eight stepwise regressions examining the relative importance of locus of control, attributional style, self-efficacy, and life stress (and a better predictor than attributional style and locus of control in seven of those eight regressions). In contrast, attributional style was a significant predictor in three of the eight stepwise regressions and locus of control was a significant predictor in only one of the eight stepwise regressions. In stepwise regressions including number of negative life events, self-efficacy was the best predictor of competence in all four domains. When level of daily hassles was the included life stress variable, self-efficacy was the best predictor of
social and overall competence, the second best predictor of emotional competence (where
daily hassles was the best predictor), and the third best predictor of academic competence
(where daily hassles and attributional style were the first and second best predictors,
respectively).

The relative lack of predictive power of locus of control and attributional style
was surprising, given that past research has found significant associations between
current competence and locus of control (Caldwell et al., 1987; Lakey, 1988; Lefcourt et
al., 1981; Luthar, 1991; Springer & Gastfriend, 1995), as well as current competence and
attributional style (Metalsky et al., 1992; Metalsky et al., 1987). In contrast, the finding
that self-efficacy was a significant predictor of current competence was consistent with
past research (Hardin et al., 1994; Regehr, et al., 2000; Rutter, 1992; Spencer et al.,
1993).

The Role of Locus of Control, Attributional Style, and Self-Efficacy as
Moderators of Life Stress

In contexts where locus of control, attributional style, and self-efficacy were
found to be associated with current competence, the manner in which they were
associated was of interest. Examination of the types of protective functions demonstrated
by each of these three factors may help to clarify whether they act as protective factors as
originally defined (i.e., where the protective value is present only when stress level is
high; Cowan et al., 1996; Masten et al., 1988; Rutter, 1987) or if these factors
demonstrate “protective effects,” a term used by Luthar (1993) to describe factors that
can be equally beneficial for all who possess them, independent of stress level.
Locus of Control as a Protective Factor

Protective value in relation to negative life events. The ability of locus of control to moderate the relationship between number of negative life events and current competence was examined separately for academic, social, emotional, and overall competence.

When examined through simultaneous regression analyses, locus of control emerged as the only significant predictor of social, emotional, and overall competence. That is, more internal locus of control was associated with higher social, emotional, and overall competence. Locus of control did not emerge as a significant predictor of academic competence. The beneficial effects of internal locus of control were found to be independent of number of negative life events (i.e., no significant interaction was found between locus of control and number of negative life events in predicting competence). In fact, number of negative life events did not emerge as a significant predictor of competence an in any domain when examined simultaneously with locus of control. Although a significant predictor of social, emotional, and overall competence, locus of control explained only 4%, 7%, and 3% of the variance in social, emotional and overall competence, respectively.

Protective value in relation to daily hassles. When locus of control was examined as a moderator between daily hassles and current competence, results differed from those found with number of negative life events. When examined simultaneously with daily hassles, locus of control emerged as a significant predictor of participants’ emotional and overall competence, independent of level of daily hassles. Locus of control
also interacted with daily hassles in predicting participants’ current academic and social competence.

With respect to academic competence, daily hassles was found to be a significant predictor for those with a more internal locus of control (with higher stress being associated with lower academic competence), but was not a significant predictor for those with a more external locus of control. When level of daily hassles was low, academic competence was not related to locus of control, however, as level of daily hassles increased, the academic competence of those with a more internal locus of control decreased, while the academic competence of those with a more external locus of control did not change. The type of interaction that emerged between locus of control and daily hassles was referred to by Luthar (1993) as a “protective-stabilizing effect,” because the attribute prevented a decrease in competence at higher levels of stress (i.e., stabilized competence across stress levels; pp. 446-447). What is interesting, however, is that when examined in conjunction with daily hassles, it was external locus of control that served a protective-stabilizing function, rather than internal locus of control, the latter of which is usually found in the literature to be associated with higher competence or adjustment (Caldwell et al., 1987; Lakey, 1988; Leftcourt et al., 1981; Luthar, 1991; Springer & Gastfriend, 1995).

With respect to social competence, daily hassles was found to be a significant predictor for those with a more external locus of control (with higher stress being associated with lower social competence) but was not a significant predictor for those with a more internal locus of control. When level of daily hassles was low, social competence was not related to locus of control, however, as level of daily hassles
increased, the social competence of those with a more external locus of control decreased, while the social competence of those with a more internal locus of control did not change. The type of interaction that emerged was again a “protective-stabilizing effect,” because the attribute prevented a decrease in competence at higher levels of stress. In the case of social competence, however, it was internal locus of control that served as a protective factor, which is more consistent with past research.

**General protective value.** In simultaneous regressions with both number of negative life events and level of daily hassles, locus of control emerged as a significant predictor of social, emotional, and overall competence. In each of these three domains, internal locus of control was associated with higher competence. In contrast, locus of control did not emerge as a significant predictor of academic competence directly, in simultaneous regressions with either source of life stress. Locus of control did emerge as a significant predictor of academic competence, when levels of daily hassles were high, however, it was external locus of control that was associated with higher academic competence.

The associations that emerged between locus of control and current competence, through simultaneous regression analyses, were generally consistent with those found through correlational analysis. Locus of control was significantly correlated with social, emotional, and overall competence, with correlations of -.19, .27, and -.20, respectively. In each domain, it was internal locus of control that was associated with higher competence. No significant correlation emerged, with the present data, between locus of control and academic competence, which may explain, in part, why the findings were
inconsistent in this domain.

Given the discrepant findings across competence domains, a general statement cannot be made regarding the protective value of locus of control. With regard to emotional and overall competence, having a more internal locus of control was equally beneficial at high and low levels life stress, thus representing more general “protective effects.” With regard to social competence, internal locus of control was beneficial, independent of number of negative life events. The beneficial effect of internal locus of control was dependent, however, on level of daily hassles, with internal locus of control being protective at high, but not low levels of daily hassles. In this case, locus of control acted as a risk-activated protective factor, buffering the impact of daily hassles on current social competence. Lastly, with regard to academic competence, external locus of control acted as a risk-activated protective factor, buffering the impact of daily hassles on current academic competence. This last finding should be interpreted cautiously, however, given that it is inconsistent with past research and with the findings with the current data, in other competence domains.

*Attributional Style as a Protective Factor*

_Protective value in relation to negative life events._ The ability of attributional style to moderate the relationship between number of negative life events and current competence was examined separately for academic, social, emotional, and overall competence.

Attributional style, which was determined based on participants’ total score on the EASQ, was not found to be a significant predictor of either academic or overall
competence and, thus, did not serve a moderator or protective function in these areas. Attributional style did, however, emerge as a significant predictor of both social and emotional competence, with an optimistic attributional style (more external, situation-specific, and unstable attributions), being associated with higher competence in both domains. Attributional style served as the sole predictor of social and emotional competence (i.e., number of negative life events was not a significant predictor) and, thus, the beneficial effects of having a more optimistic attributional style were independent of number of negative life events experienced by participants.

**Protective value in relation to daily hassles.** When attributional style was examined as a moderator between daily hassles and current competence, results differed from those found with number of negative life events. Participants’ attributional style was related to their current academic, social, and emotional competence, independent of reported level of daily hassles (although the interaction with daily hassles approached significance in the prediction of academic competence). More specifically, a more optimistic attributional style was associated with higher social and emotional competence; however, a more pessimistic attributional style was associated with higher academic competence. This last finding is in contrast to past research, which has found more pessimistic attributions to be associated with poorer adjustment or competence (Metalsky et al., 1992; Metalsky et al., 1987). These past studies tended to focus more so on emotional competence, given that attributional style has often been studied in relation to learned helplessness.

In the prediction of overall competence, attributional style was not a significant
predictor directly, however, it interacted with level of daily hassles reported by participants, in predicting overall competence. Although overall competence decreased as level of daily hassles increased, it decreased more so when attributional style was more pessimistic. At low levels of daily hassles, attributional style was not a significant predictor of overall competence, however, at high levels of daily hassles (+ 2 SD), attributional style was a significant predictor, with a more optimistic attributional style being associated with higher overall competence (i.e., less of a decrease from low stress levels).

*General protective value.* The possible protective value of attributional style differed across the four competence domains. In simultaneous regressions with both number of negative life events and level of daily hassles, attributional style emerged as a significant predictor of social and emotional competence. In both of these domains, a more optimistic attributional style was associated with higher competence, independent of levels of life stress.

With respect to academic competence, attributional style was not a significant predictor in a simultaneous regression with number of negative life events; however, it was a significant predictor in a simultaneous regression with daily hassles, with a more pessimistic attributional style being associated with higher academic competence. A more pessimistic attributional style was also associated with higher academic competence in a stepwise regression with daily hassles. The finding that pessimistic attributional style was associated with higher academic competence is similar to the pattern of association that emerged between locus of control and academic competence, where external locus of
control was associated with higher academic competence. It may be that the mechanisms or pathways that determine academic competence are different from those determining social and emotional competence, however, it is difficult to speculate what these mechanisms might be.

In the prediction of overall competence, attributional style was not a significant predictor in a simultaneous regression with number of negative life events; however, it interacted with daily hassles in predicting overall competence. Given that attributional style only had predictive power at high levels of daily hassles, internal attributional style could be considered to be a risk-activated protective factor in this case. The type of interaction that emerged between attributional style and daily hassles was somewhat of a protective-stabilizing effect, given that more stability was seen across stress levels when attributional style was more optimistic.

The associations that emerged between attributional style and current competence, through simultaneous regression analyses, were somewhat consistent with those found through correlational analysis. Attributional style was significantly correlated with social and emotional competence, with correlations of -.16 and .21, respectively. Attributional style was not significantly correlated with academic or overall competence, which may help to explain the discrepant findings in these competence domains, in simultaneous regressions with number of negative life events and daily hassles.

*Self-Efficacy as a Protective Factor*

*Protective value in relation to negative life events.* When self-efficacy was examined as a moderator between number of negative life events and current
competence, participants' level of self-efficacy was a significant predictor of current competence across all domains, including academic, social, emotional, and overall competence. That is, higher reported self-efficacy was associated with higher academic, social, emotional, and overall competence. Self-efficacy emerged as the only significant predictor of academic, social, and overall competence, predicting 6%, 15%, and 31% of the variance, respectively. Number of negative life events also emerged as a significant predictor of emotional competence, with these two predictors explaining 31% of the variance.

None of the interactions between self-efficacy and number of negative life events were significant, although in the prediction of overall competence, the interaction approached significance ($p = .06$). Thus, given the lack of any significant interaction with number of negative life events, the protective value of high self-efficacy was independent of number of negative life events reported.

**Protective value in relation to daily hassles.** When self-efficacy was examined as a moderator between level of daily hassles and current competence, participants' level of self-efficacy was related to their current academic, social, emotional, and overall competence. In all domains, higher reported self-efficacy was associated with higher levels of competence reported by participants. Given that none of the interactions between self-efficacy and daily hassles were significant, self-efficacy was equally beneficial at high and low levels of stress.

**General protective value.** The consistency of the association of high self-efficacy
with higher current competence, which was found through both stepwise and simultaneous regression analyses, further supports the protective value of high self-efficacy. No significant interactions were found between self-efficacy and life stress, as measured by either negative life events or daily hassles, therefore, self-efficacy would be considered to exhibit more general "protective effects," which were described by Luthar (1993). Given that the protective value of high self-efficacy was not found to be stronger or present only at high levels of stress (i.e., the protective value was not risk-activated), self-efficacy would not be considered to be a true "protective factor" by those who believe that an interaction with stress or risk must be present (Cowan et al., 1996; Masten et al., 1988; Rutter, 1987).

**General Implications**

One of the central purposes of the present study was to examine the relationship between life stress and current competence, in order to assess the degree to which the experience of chronic and acute life stressors is associated with poorer current functioning. Kanner et al. (1981) suggested that major life events are often considered to represent risk factors because of the "essential reasonableness of the assumption that the accumulation of life events should be relevant to health status" (p. 2). An examination of whether internal locus of control, optimistic attributional style, or high self-efficacy serve as protective factors (i.e., buffering the negative impact of risk factors on current adjustment), presupposes that acute and chronic life stressors actually constitute risk factors for maladjustment.
Thus, perhaps the most central finding of the present study was that number of
negative life events did not emerge as a significant predictor of current academic, social,
or overall competence (i.e., did not emerge as a significant risk factor for maladjustment
in these domains) and was only a weak predictor of emotional competence. This finding
can call into question the popular belief that the experience of major acute stressors will
lead to maladjustment, in the majority of affected individuals. Based on the present data,
one cannot determine conclusively whether acute stressors place individuals at an
increased risk for maladjustment; however, the present findings do support the conclusion
of individuals such as Masten (2001) who believe that it is resilience or successful
adaptation that should be the expected outcome, “unless important adaptive systems, such
as cognition and parenting, are compromised prior to or as a result of the adversity” (p.
232). This more optimistic view regarding individuals’ ability to successfully adapt to
major acute stressors seems justified, based on the present results.

As with more acute stressors, it seems “reasonable” to assume that daily hassles,
such as financial difficulties, interpersonal difficulties, and other minor annoyances could
interfere with one’s ability to function academically, socially, and emotionally. In fact,
these daily annoyances can have a more direct and ongoing impact on adjustment than
past acute stressors and, as was pointed out by Kanner (1981), it is often the
accumulation of more minor annoyances that, on a bad day, can hinder our ability to
function.

In the present study, daily hassles emerged as a significant predictor of
participants’ academic, emotional, and overall competence, but interestingly, daily
hassles did not emerge as a significant predictor of social competence, except where it
interacted with locus of control in the prediction of social competence. Further research is thus needed, in order to examine the effects of daily hassles on specific domains of competence. The present results do, however, provide further support for the validity of daily hassles as a risk factor in resilience research and suggests that the influence of daily hassles is likely greater than that of past life events. Thus, it may be more important to search for factors that promote resilience in the face of more minor, ongoing stressors.

The second purpose of the present study was to examine the ability of locus of control, attributional style, and self-efficacy to moderate the relationship between life stress (number of negative life events and daily hassles) and current competence (academic, social, emotional, and overall). Given that no relationship was found between number of negative life events and current competence, the ability of locus of control, attributional style, or self-efficacy to moderate the relationship between number of negative life events and current competence could not be definitively established. Although number of negative life events was a significant predictor of emotional competence in some analyses, this relationship was relatively weak and inconsistent and, thus, lessened the likelihood that any significant interaction would be identified. When examined in relation to negative life events, it was the direct influence of locus of control, attributional style, and self-efficacy that was revealed. In contrast, the relationship between daily hassles and current competence was significant, so the ability of locus of control, attributional style, and self-efficacy to interact with daily hassles in the prediction of competence could be more fully examined.

Based on the present data, none of the possible moderator variables (i.e., locus of control, attributional style, or self-efficacy) consistently interacted with daily hassles in
the prediction of current competence across all domains. Based on this finding, statements about the protective value of locus of control, attributional style, and self-efficacy could only be made in relation to each specific competence domain.

In general, self-efficacy consistently emerged as a more powerful and consistent predictor of current competence than attributional style and locus of control, with higher self-efficacy being associated with higher competence in all domains. Self-efficacy exhibited beneficial effects, independent of amount of life stress, as it did not interact with life stress in the prediction of competence in any domain.

In contrast to the consistent beneficial effects of high self-efficacy, observed with the present data, the type of protective function observed in relation to locus of control and attributional style varied across competence domains. Both external locus of control and pessimistic attributional style were found to be associated with higher levels of academic competence in simultaneous regressions with daily hassles (although external locus of control was only beneficial at high levels of daily hassles). These findings were not consistent with the protective functions exhibited by locus of control and attributional style in other competence domains (i.e., where internal locus of control and optimistic attributional style were associated with higher competence) and neither of these factors was associated with academic competence in simultaneous regressions with number of negative life events. Locus of control also emerged as a significant predictor of social, emotional, and overall competence (although only at high levels of daily hassles for social competence), with internal locus of control being associated with higher competence in these domains. The predictive power of locus of control was highest in the emotional competence domain. Lastly, attributional style was also found to be a
significant predictor of social and emotional competence, and interacted with daily 
hassles in predicting overall competence (being a significant predictor only at high levels 
of daily hassles). In each domain, optimistic attributional style was associated with higher 
competence. In general, locus of control, attributional style, and self-efficacy, were all 
shown to be associated with current competence within certain domains, however, the 
relevant domains differed for each of the three possible protective factors. Although these 
three factors did not consistently emerge as risk-activated protective factors, their 
influence within certain competence domains should not be overlooked.

Future Directions

The results of the present study have generated some important questions, which 
should be examined more closely through future research.

The finding that number of negative life events was not associated with current 
adjustment in most domains provides grounds to be optimistic that individuals can (and 
often do) successfully adapt to such circumstances. Further research should be conducted, 
however, in order to further explore the conclusions drawn based on the present data and 
to hopefully find further support for these findings. One of the challenges with resilience 
research is that it can be difficult to accurately assess life stress. Resilience research tends 
to rely heavily on observational methods and often requires participants to provide 
retrospective reports with regard to past life stressors. Underreporting of past stressors 
(i.e., failure to report past events that have occurred) can lead to an underestimation of the 
strength of the relationship between past stressors and current competence (Zimmerman,
1983), perhaps even more so within a non-clinical sample, where participants are volunteering such information, without the expectation that this information will be used for their own benefit.

With respect to these challenges, the field of resilience research would benefit from the development of a more reliable method of assessing past acute stressors, that is not confounded with measures of current adjustment. This confound was minimized in the present study, by examining only those negative life events that were judged to be relatively uncontrollable and, thus, were not likely to be caused or impacted by current adjustment. This decision, however, may sometimes lead to a more conservative estimate of past number of negative life events, due to the exclusion of stressors that may have been somewhat controllable (e.g., divorce or loss of job). The desire to minimize confounds also necessitated the development of a scale of uncontrollable, negative life events, given that previously developed scales had not excluded controllable events. After a more reliable method of assessing past stressors is established, more firm conclusions be drawn with regard to the impact of these stressors on current functioning.

It would be important, as a future extension of this research, to examine the predictive power of number of negative life events in a non-university sample. It is likely that with a community sample, a greater amount of variability would be found in current competence levels and perhaps as well, in the number of life events experienced. It could be that individuals whose competence is adversely impacted by the experience of negative life events may not attain as high a level of education, especially if academic competence was impacted. Intelligence has been shown to moderate the relationship between negative life events and some types of competence (Masten et al., 1988), thus,
replication of these findings using participants with a wider range of intellectual functioning is recommended, in order to examine the generalizability of the present results.

Future research examining the role of daily hassles in the prediction of current competence would also be important, as would further research into the factors that impact people’s coping with such day to day annoyances. It may be the case that level of daily hassles can influence participants’ judgement and reporting of current competence in various domains, given that these hassles may not be consistent from day to day. Individuals who have had a fairly “bad day”, with many minor annoyances, may thus report being less emotionally competent (i.e., report more emotional distress) than if these reports were made on a day where less of these hassles occurred. Future research could thus examine the consistency with which the level and type of daily hassles experienced is associated with reports of current competence and the impact of daily hassles on future competence.

The present findings have provided important insight into the relationship between life stressors (both chronic and acute) and current academic, social, emotional, and overall competence. The data have also enabled further insight to be gained with respect to the role of locus of control, attributional style, and self-efficacy in adjustment to life stressors and promotion of resilience. The exploratory nature of the present research has hopefully served to generate some important questions and hypotheses that should be further explored through future research.
REFERENCES


Development and Psychopathology, 5, 703-717.


Appendix A

Negative Life Events Questionnaire

For the following questions, please indicate those events that have occurred to you, by placing a checkmark under the column indicating the time period during which it occurred (i.e., 0-6 months, 7-12 months, or more than 1 year). Then, indicate the impact that you feel the event had on your life.

<table>
<thead>
<tr>
<th>Type of event</th>
<th>Time of occurrence</th>
<th>Impact of event on your life</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 to 6 mo. ago</td>
<td>7 mo. to 1 yr. ago</td>
</tr>
<tr>
<td>1. Death of a close family member: (a) mother</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>(b) father</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>(c) brother</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>(d) sister</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>(e) grandmother</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>(f) grandfather</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>(g) spouse</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>(h) child</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>(i) other (specify)</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>2. Death of a close friend</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>3. Death of a pet</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>4. Major personal illness or injury</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>5. Serious injury or illness of a close friend</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>Event Description</td>
<td>Code 1</td>
<td>Code 2</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------</td>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td>6. Serious illness or injury of close family member:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) father</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>(b) mother</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>(c) sister</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>(d) brother</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>(e) grandfather</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>(f) grandmother</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>(g) spouse</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>(h) other (specify)</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>7. Marital separation of parents</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>8. Divorce of parents</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>9. Marriage of parent to step-parent</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>10. Parent getting into trouble with the law</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>11. Parent going to jail</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>12. Discovery of being an adopted child</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>13. Loss of job by a parent</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>14. Worsening of parents’ financial status</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>15. Having a visible congenital deformity</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>16. Acquiring a visible deformity</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>17. Reared in a single-parent household</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>18. Alcoholism of parent (or guardian)</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>19. Domestic violence between parents (or guardians)</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>20. Victim of a sexual assault</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>21. Victim of a robbery</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>22. Victim of a natural disaster</td>
<td>-3</td>
<td>-2</td>
</tr>
<tr>
<td>23. Victim of child abuse</td>
<td>-3</td>
<td>-2</td>
</tr>
</tbody>
</table>
Appendix B

Demographic Questionnaire

Directions: Please answer the following questions regarding background/academic information.

1. What is your current age?

2. Gender
   1) __ male
   2) __ female

3. Marital Status
   1) __ single/never married
   2) __ divorced
   3) __ married
   4) __ widowed
   5) __ separated
   6) __ living together

4. What is your year and program of study?

5. What is your current, cumulative, university grade point average? ______(If this is your first term at the university and do not yet have a grade point average, what was your OAC average? ________).
Appendix C

CONSENT FORM

I, __________________________ (please print name) hereby understand and consent to the following:

The study I am participating in is investigating how one’s interpretation of events and experiences impacts the effects of negative life events on current functioning. This study is a Master’s thesis being conducted by Mandy Sands, a graduate student in the Department of Psychology at the University of Windsor. This study is being supervised by Dr. Stewart Page. In this study, I will be completing a series of questionnaires asking personal questions of me regarding negative life events that I may have experienced, the way in which I interpret events and experiences, and my current functioning.

I am aware that my participation is completely voluntary. I have the right to withdraw from participation at any time without explanation or penalty, and I may refrain from answering any questions. I may ask questions at any time during my participation, and Mandy Sands, the principal investigator, will be available after I am finished for any further questions, comments, or discussion. Confidentiality regarding my responses will be protected by not having my name or any identifying information appear on any of the questionnaires. The data obtained through my participation may, in the future, be used for publication purposes.

The questionnaire should take approximately one hour to complete and I will receive one bonus point to be applied toward my final course grade as compensation for my participation in this study.

This procedure and consent form have been reviewed and cleared by the University of Windsor’s Department of Psychology Ethics Committee. Concerns may be directed to Dr. S. Page, Chair, Psychology Ethics Committee (253-3000 x2243). I have received a copy of this form and, although participation is not intended to aid directly in resolving issues around any negative life events that I may have experienced, a list of on-campus and community resources will be provided to me, for this purpose.

______________________________
signature

______________________________
date

For information contact:
Mandy Sands, graduate student
Department of Psychology
University of Windsor
Windsor, Ontario, N9B 3P4
sands2@uwindsor.ca
Appendix D

DEBRIEFING FORM

The purpose of this research was to look at the negative life events I have experienced and how attributional style (the explanations I tend to make about the causes of events in my life), locus of control (the amount of control that I tend to feel I have over events in life), and self-efficacy (my expectations of success in future endeavours) effect my current competence or adjustment in different areas. By conducting research into the factors that help people remain well-adjusted and competent in the face of life adversities, we can better understand how to help those individuals who do not adjust well and prevent future maladjustment.

Though your participation in this research is greatly appreciated, we understand that it is often difficult to remember such negative life events. As we have asked you to give us information regarding issues that could possibly be quite sensitive, we are providing you with the names and numbers of various people you can contact, should you need to talk to someone.

On-Campus Resources
Psychological Services Centre ........................................... 253-3000 ext. 7012
........................................................................... 973-7012

Student Counselling Centre ........................................... 253-3000 ext. 4616
(crisis intervention and brief counselling)

Assumption University-Counselling Services .................. 253-3000 ext. 3398

Medical and Health Services ........................................... 253-3000 ext. 7002

Community Services

Windsor Distress Center .................................................. 256-5000
(all crises)
VITA AUCTORIS

Mandy Gunby was born in 1977, in Pembroke, Ontario. She graduated from McMaster University in 1999, where she obtained a Bachelor of Science in Honours Psychology. She is currently a candidate for a Master’s degree in Clinical Psychology at the University of Windsor and plans to continue working toward her Ph.D.