**Differential Stress Response Between Abused and Non-abused Women to a Stress
Challenge and the Influence of Moderating Factors**

**A thesis presented to the Faculty of Graduate Studies and Research of Carleton
University in partial fulfillment for the degree of Masters of Science in Psychology
with Neuroscience Specialization**

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Abstract

There is considerable evidence suggesting that neuroendocrine and affective alterations occur as a result of stress exposure. The present investigation examined the effects of partner abuse in dating relationships on emotional and neuroendocrine responses to stressor stimuli. Female participants from Carleton University were exposed to two brief films; one portraying a young woman describing her abusive relationship to a counsellor, and another portraying a young woman describing her academic difficulties to a counsellor. Cortisol responses to both abuse and academic films did not significantly differ between abused and non-abused women. However, interesting trends were found with respect to the abuse film in that abused women showed a smaller mean change in cortisol compared to non-abused women. Interestingly, physical abuse was associated with increased negative affect to the academic film. Psychological moderators, including alexithymia, and depressive and PTSD symptomatology significantly moderated the relationship between abuse and positive affect to the abuse film. In addition, emotional containment moderated the relationship between physical abuse and negative affective responses to the academic film. While these were the only significant findings, interesting trends were found for both negative and positive affect with respect to both films. Specifically, abuse was associated with heightened positive and negative affect to both academic and abuse films. Furthermore, among abused women, high levels on the moderating variables were associated with increased negative and increased positive affective reporting. While many of the conclusions derived in this report were highly speculative, owing largely to the small sample size, the clear trends that surfaced deserve recognition and further exploration.

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Differential Stress Response Between Abused and Non-abused Women to a Stress Challenge and the Influence of Moderating Factors

Among the numerous social stressors that exist, partner abuse is a particularly poignant one. Instances of partner abuse fall along a continuum, ranging from minor insults to severe physical and psychological abuse (Gelles & Straus, 1988; Walker, 1989). Women who are abused by their partner may undergo tremendous stress¹, resulting not only in physical injury, but also psychological illnesses, such as depression and anxiety (Cloitre, Scarvalone, & Difede, 1997; Dutton & Painter, 1993; Feehan, Nada-Raja, Martin, & Langley, 2001; Gleason, 1993; Houskamp & Foy, 1991; Marais, Villiers, Moller, & Stein, 1999; Weaver & Clum, 1995; West, Fernandez, Hillard, Schoof, & Parls, 1990). Indeed, clinical studies have indicated that physically abused women exhibit significant levels of depression coupled with suicidal ideation and suicide attempts (Bergman & Brismar, 1991; Pagelow, 1984). While most studies that assessed the consequences of abuse focused primarily on abuse in cohabiting individuals, there is reason to believe that abuse starts early and occurs in dating relationships. Indeed, it was reported that dating abuse occurs as frequently as 35-86.2% in women, although the actual value depends on the criteria used to define abuse (DeKeseredy & Kelly, 1993).

In addition to depression and anxiety, it has been consistently shown that abused women exhibit the same pathological symptoms commonly associated with post-traumatic stress disorder (PTSD). Kemp, Green, Hovanitz, and Rawlings (1995) found the prevalence of PTSD to be as high as 81% among battered women in shelters,

¹ Although men may experience abuse at the hand of their female partner, men's violence against women is more frequent and severe (Burge, 1997; Feehan, et al., 2001; Langley, Martin, & Nada-Raja, 1997).

counseling centers and the general community. The symptoms expressed included learned helplessness, re-experiencing of the traumatic event, intrusive recollections, generalized anxiety disorder, lowered self-esteem, social withdrawal, psychological numbing and hypervigilance (Douglas, 1987; Kemp et al, 1995; McCauley et al., 1995). In addition, women who met the criteria for PTSD reported more physical, sexual, and verbal abuse, a greater number of injuries, and a greater sense of threat than women who did not meet the criteria, thus implicating a dose-response effect of abuse on the severity of PTSD symptoms (Green, 1990; Houskamp & Foy, 1991).

In addition to psychological consequences, there is reason to believe that abuse may lead to physiological changes. While it is thought that the elevated neuroendocrine activity associated with a stressor is of adaptive significance, it has been argued that excessive wear and tear associated with a protracted stressor (allostatic load) may result in adverse psychological and physiological ramifications (Lupien et al., 1999; McEwen, 1995, 2000). The allostatic load resulting from chronic stressors leads to elevated glucocorticoid levels and is evidenced by the pernicious rise of hypothalamic corticotropin releasing hormone (CRH) levels (Chappell et al., 1986; Imaki, Nahan, Rivier, Sawchenko, & Vale, 1991; Nemeroff et al., 1984). It would not be unreasonable to expect that persistent and unremitting partner abuse may result in neuroendocrine alterations, which cause hippocampal feedback mechanisms to cease normal operation, thus resulting in allostatic load.

Specific psychoneuroendocrine alterations have been detected in stress-induced disorders, namely depression and PTSD, each of which have their own hormonal parameters (Kasckow, Baker, & Geraciotti, 2001; Mason, Kosten, & Southwick, 1990;

Yehuda, Giller, Southwick, Lowy, & Mason, 1991). Hypercortisolism and hypothalamic-pituitary-adrenal (HPA) axis dysregulation during depressive episodes have been reported as a result of over-active CRH production (for review see Kasckow et al, 2001; Michelson, Licineo, & Gold, 1995; Nemeroff, 1988; Nemeroff et al, 1984; Sheline, 2000). It has consistently been shown that the fast-feedback inhibition mechanism of the HPA axis is absent in depressed patients, resulting in high basal cortisol levels (Young, Haskett, Murohy-Weinberg, Watson, & Akil, 1991).

Dysregulation of the HPA axis has been reported in patients exhibiting PTSD (for review see Heim, Ehler, & Hellhammer, 2000; Kasckow et al., 2001; Yehuda, 1997; Yehuda, Giller, Southwick et al., 1991). Although stressors ordinarily elicit elevated HPA activity, the majority of studies demonstrated lower, rather than higher, 24-hour basal cortisol levels in various PTSD populations (Goenjian et al., 1996; Mason et al., 1990; Wang, 1997; Yehuda et al., 1990; Yehuda, Giller, & Mason, 1993; Yehuda, Teicher, Trestman, Levengood, & Siever, 1996). To a certain extent this finding is paradoxical, particularly as depression and anxiety, which are characterised by markedly high cortisol levels, frequently occur in tandem with PTSD (Mason, Giller, Kosten, Ostroff, & Podd, 1986; Mason et al., 1990; McEwen, 1995; Wang, 1997; Yehuda, Giller, & Mason, 1993). It was suggested that the hypocortisolism in this population was consequence of the sustained CRH hyperactivity (Goenjian et al., 1996; Yehuda, Giller, Southwick et al., 1991).

Although basal cortisol levels have not been directly assessed in abused women, it is conceivable that these women may exhibit the hormonal profiles of depressed or PTSD individuals, depending on which symptoms surface. However, the evaluation of stressor

effects on humans is complicated by various factors. Individual characteristics, such as coping processes (emotion-focused vs. problem-focused), personality factors (e.g. alexithymia), and social factors (i.e., social support), may influence how individuals respond to a potential stressor, which in turn may determine physiological and psychological outcomes (Martin & Pihl, 1985; Mason et al., 1990; Pilisuk & Minkler, 1985). It is well established that coping processes, including social support, influence how a stressor is managed, which further influences illness development. It has been shown that avoidant and repressive coping styles are related to hypocortisolism, which was found in both PTSD and non-PTSD individuals (Mason et al, 1990; Mason et al., 2001; Wolff, Friedman, Hofer, & Mason, 1964). Low basal cortisol levels have further been reported in individuals who exhibit alexithymia, a personality trait characterized by an inability to describe and understand self- and other-emotions (Henry et al., 1992; Lindholm, Lehtinen, Hyyppa, & Puukka, 1990). Although alexithymia has never been directly assessed in partner abuse, it may be a contributing factor to the continuation of aggressive behaviours against women, as it may impede the ability of abused women to recognise, and react adaptively to their abuse with proper coping responses.

In addition to the immediate effects, stressors may proactively influence physiological responses to subsequently encountered stressors (sensitization) (Charney, Deutch, Krystal, Southwick, & Davis, 1993; Liberzon, Krstov, & Young, 1997; Sorg & Kalivas, 1995). Sensitization of the neuroendocrine system may be characterized by an exaggerated physiological response to a reminder stimulus, which may further play a role in the provocation and development of stressor-related psychopathology (Post, 1992). The emergence of excessive reactions to subsequently encountered stressors, or reminder

stimuli, may be dependent on the meaningfulness and relevance of the stressor to the individual. Thus, in order to achieve a comprehensive understanding of the physiological stress response, it is essential to evaluate psychological and social correlates, and to assess stressors that are relevant to the individual's past experience.

Given that abuse may occur in dating relationships it was of interest in the present investigation to characterize some of the sequelae associated with abuse under such conditions, particularly with respect to the psychological and neuroendocrine correlates of this experience. The present investigation will examine emotional and neuroendocrine responses to a stimulus that is meaningful and relevant to previous and ongoing stressful events in the form of partner abuse. In this respect, particular attention will be devoted to the contribution of coping processes, mood factors (e.g., depression, anxiety), and the personality trait of alexithymia, in determining the neuroendocrine and emotional response to a reminder stimulus. To this end, participants in the present investigation will be exposed to a brief film, portraying a young woman describing an abusive relationship to a therapist. It is expected that this film will promote an increase of cortisol, coupled with increased signs of negative affect and decreased signs of positive affect. Cortisol effects, however, will be (a) particularly marked among women who have experienced an abusive dating relationship compared to women who have not, (b) more pronounced among abused women who display poor coping strategies (e.g., emotion-focused rather than problem-focused) and low social support coping, (c) greater in abused women with a background of depression (d) minimal in those abused women reporting PTSD symptoms, despite elevated emotional responses to the reminder film, and (f) will be minimal in abused women who exhibit alexithymic characteristics, which will coincide

with a diminished emotional response to the reminder stimulus. As any observed effects in abused women may reflect general increased reactivity, as a result of cross-sensitization, rather than being attributable to reminder stimuli per se, salivary cortisol levels and affective responses will be assessed in response to a second short film, regarding difficult experiences at University.

With regards to affective reporting in response to the films, it is predicted that, compared to non-abused women, abused women will display greater negative affect and lower positive affect to the abuse film. Since cross-sensitization has been documented in animal studies and may contribute to characteristic of PTSD (Yehuda, 1997), there is reason to believe that women who have experienced partner abuse may respond to a general stressor with increased reactivity, although to a lesser extent than in the case of the abuse film. Thus, it is predicted that abused women will display greater negative affect and lower positive affect to the academic film compared to non-abused women. Furthermore, it is predicted that negative affect reporting to both films will be augmented and that positive affect reporting will be diminished in women with a background of depression or anxiety. The moderating effects of depression and anxiety are further hypothesized to be more pronounced in abused women than non-abused women. Alexithymia, on the other hand, is predicted to blunt or neutralize all affective reporting in the abuse group. In this respect, positive and negative affect responses to the abuse and academic film will be similar to affect responses to the academic film and similar to non-abused women².

² This concludes the introduction to the present study. Readers who are interested in a more detailed literature review are invited to read the following section. If not, please proceed to page 27.

Stress and Pathology

A workable conceptualization of stress involves the perceived threat to homeostasis, evidenced by marked changes of autonomic and hormone activity, triggered by an aversive event or stimulus. It has consistently been shown that a relationship exists between stressor experiences and alterations of immune and neuroendocrine functioning, which may underlie several physical and psychological illnesses (Brown, Rush, & McEwen, 1999; Liberzon, et al., 1997; McEwen, 2000; Olf, 1999; Sapolsky, 1996; Yehuda et al., 1995).

Given the transactional nature of stress, and the individual-specific responses to stressors, research findings are inconclusive as to how the stress reaction is actually initiated and maintained. In order to determine how aversive events may impact physiological processes and affective states, it is important to consider the individual characteristics that might potentially influence the stress response. In this respect, it appears that individual dispositions, such as coping processes, social resources, personality factors, and stress sensitivity (based on genetic or experiential factors) may affect how one responds to a potential stressor, and hence the stress reaction that ensues (Derryberry & Tucker, 1992; Everly & Sobelman, 1987; Yehuda, Giller, Southwick et al., 1991; Yehuda et al., 1995).

In addition to the wide array of immediate effects elicited by stressors, it appears that stressor experiences may proactively influence the response to subsequently encountered challenges (sensitization) (Bruijnzeel, Stam, Compaan, & Wiegant, 2001; Coitre, et al, 1997; Heim, Newport, Bonsall, Miller, & Nemeroff, 2001; Levine, Madden, Conner, Moskal, & Anderson, 1973; Liberzon et al., 1997; Pynoos, Sorenson, &

Steinberg, 1993; Yehuda et al, 1995). Individuals who have undergone extraordinary life events, or even chronic daily hassles may exhibit maladaptive behavioural alterations and may show an augmented stress reaction, or lower threshold, to future stressors (Hammen, Henry, & Daley, 2000; Heim, Newport, et al., 2000; Heim et al., 2001; Sorg & Kalivas, 1995). In effect, the sensitization of neuroendocrine processes may favour the development of pathological outcomes (Coplan et al., 1996; Heim & Nemeroff, 1999; Heim, Ehler & Hellhammer, 2000). In addition to sensitization in homologous conditions, recent studies revealed cross-sensitization in heterologous stressor conditions (Tilders & Schmidt, 1999; Wiegant, Spieker, & Wijk, 1998). While the majority of research on cross-sensitization have been limited to animal studies, this enhanced sensitivity to irrelevant stressors has been documented in PTSD populations (Yehuda, 1997).

Partner Abuse

Herbert and Cohen (1993) indicated that greater immune alterations are related to stressors that are long lasting in nature. They further suggested that, compared to non-social events, interpersonal stressors may have a greater impact due to the inability of the individual to quickly meet resolution and thus increasing the duration of the aversive event. One particularly poignant example of an interpersonal stressor is that of partner abuse. Instances of partner abuse fall along a continuum, ranging from minor insults to severe physical harm. Furthermore, the abuse may be experienced once or may be endured for longer periods of time, thus exposing abused women to tremendous amounts of stress (Feehan et al., 2001; Walker, 1984; Walker, 1989; Weaver & Clum, 1995). The

impact of this stressor may be exceptionally severe since the source of the stress is derived from the very individual who may be counted upon for social support.

The majority of studies on woman abuse have restricted their analyses to the conjugal domain (i.e. "domestic violence"). It has been reported that domestic assault is the most prevalent cause of injury to women: one in every four women cared for in hospital emergency departments is there as a result of abuse afflicted by an intimate partner (Bergman & Brismar, 1991; Bintliff, 1994). In 1993, a survey conducted on Violence Against Women in Canada reported that 29% of women who had ever been married or had lived in a common law relationship, had been physically abused by their partner at some point in the relationship. Furthermore, it was reported that the prevalence of abuse was approximately 16% among Canadian women (Rodgers, 1994). What is absent from these statistics, however, is the violence perpetrated against women in dating relationships (DeKeseredy & Hinch, 1991). This is what has come to be known as "premarital" or "partner abuse".

In a study assessing the rates of abuse in dating relationships in Canadian universities and colleges (DeKeseredy & Kelly, 1993), 35% of the women reported experiencing physical abuse, and 86.2 % reported having been psychologically abused. These percentages were consistent with reports by male students, 17.8% of who reported using physical abuse and 74.1% of who admitted to using psychological abuse tactics. Of course, the definition of abuse in these studies will, to a considerable degree, determine the percentage of individuals reporting abuse.

Many specific characteristics underlie the definition of abuse. For example, the range of physical abuse which women can be subjected to is broad, ranging from pushing

to murder (DeKeseredy & MacLeod, 1997; Gelles & Straus, 1988). As well, psychological abuse includes insults, harmful remarks, withdrawing affection, or posing threats (DeKeseredy & MacLeod, 1997). It has been suggested that psychological abuse may be even more detrimental than physical abuse, not only because of its independent effects, but because it may worsen the impact of co-existing physical abuse (Follingstad, Rutledge, Berg, Hause, & Poleck, 1990; Sackett & Saunders, 1999; Street & Arias, 2001). While sexual assault has been kept conceptually separate from physical abuse, it can be considered an extreme form of physical abuse.

Apart from the physical injuries that result, chronic abuse also produces a range of psychological consequences (Bergman & Brismar, 1991; Bintliff, 1994; Follette, Polusny, Bechtle, & Naugle, 1996; Gelles & Harrop, 1989; Houskamp & Foy, 1991; McCauley et al., 1995; Winfield, George, Swartz, & Blazer 1990). More specifically, psychological illness, coupled with abnormal neuroendocrine activity, may develop from a maladaptive stress response to the abuse (Heim, Ehlert, Hanker, & Hellhammer, 1998; Heim, Ehlert, & Hellhammer, 2000). In the case of young women, partner abuse may lead to the development of sensitivity to stressful stimuli, thus exacerbating the stress response of the victim, thereby heightening their risk of developing illness upon subsequent stressor experiences (Kaufman et al., 1997; Yehuda, Resnick, Schmeidler, Yang, & Putman, 1998).

The present investigation will examine the emotional and neuroendocrine responses to stimuli that are relevant to previous and ongoing stressful events. In this respect, particular attention will be devoted to the contribution of coping processes, mood factors (e.g., depression, anxiety), and the inability to identify or describe emotion (i.e.

alexithymia), in determining the neuroendocrine and affective response to a reminder stimulus.

Psychological Health

Adverse health effects associated with stressful events, including depressive illness and anxiety disorders, have been documented in women who have undergone abuse by an intimate partner (Cloitre, et al., 1997; Dutton & Painter, 1993; Ullman & Siegel, 1993; West et al., 1990). In addition, as already alluded to, partner abuse may give rise to other stressor-related disorders, such as posttraumatic stress disorder (PTSD). These disorders may further play a role in subsequent responses to reminder stimuli, and possibly even general stressors.

Depression

Depression is a debilitating and common illness, affecting up to 17% of the population (Malberg, Eisch, Nestler, & Duman, 2000) and is more common among women than men (Malhi & Bartlett, 2000). Although it is a heterogeneous illness, the “syndrome” is generally characterized by loss of appetite and weight loss, low mood, lack of energy, insomnia, agitation, motor retardation, impaired concentration, and the inability to experience pleasure in activities that were once considered pleasurable (American Psychiatric Association, 1994).

Physically abused women have a heightened risk for depression (Gleason, 1993; Houskamp & Foy, 1991; Weaver & Clum 1995), and it is particularly more likely to affect younger (18-24 years of age) than older women (Walker, 1984). Clinical studies have revealed that physically abused women exhibit significant levels of depression paired with suicidal ideation and suicide attempts (Bergman & Brismar, 1991; Pagelow;

1984). Further, cognitive disturbances associated with depression may facilitate the maintenance of the abusive relationship (Walker, 1984,1989).

Post-Traumatic Stress Disorder

Post-traumatic stress disorder is an anxiety disorder that necessarily is precipitated by a traumatic event, which causes the individual to respond with intense fear, a sense of helplessness, or horror (American Psychiatric Association, 1994). Other symptoms of PTSD include re-experiencing symptoms (nightmare, intrusive thoughts and flashbacks to the traumatic event), avoidance (withdrawal, emotional numbing and detachment), and hyper-arousal (hypervigilance, irritability, exaggerated startle, problems sleeping) (American Psychiatric Association, 1994; Wang, 1997). These symptoms must persist for over one month and must cause significant impairment in daily life before the individual can be diagnosed with PTSD.

Rates of PTSD seem to depend on stressor type and tend to be more closely associated with events that are unexpected and are the product of human design (McNally, 1993), such as partner abuse. In a comprehensive review of the PTSD literature, Kilpatrick and Resnick (1993) reported that of individuals (both male and female) presenting with PTSD, 49% had a history of rape, 41% had a history of aggravated assault, and only 14% had a history other than crime. Based on these incidence rates, it appears that women are at a particularly high risk for developing PTSD. In fact, epidemiological studies have shown that lifetime prevalence of PTSD within the general population is 1.3%, with approximately two-thirds of sufferers being women (Davidson, Hughes, Blazer, & George, 1991).

The effects of women victimization are similar to those associated with PTSD, including such behaviours as learned helplessness, re-experiencing of the traumatic event, intrusive recollections, generalized anxiety disorder, lowered self-esteem, social withdrawal, psychological numbing and hypervigilance (Douglas, 1987; Kemp et al, 1995; McCauley et al., 1995; Roth, Newman, Pelcovitz, van der Kolk, & Mander, 1997). Kemp et al (1995), assessing the incidence of PTSD in a sample of battered women from shelters, counselling centres, and a community sample, indicated that 81% of victimized women met the criteria for PTSD. In addition, those women who met the criteria reported more physical, sexual, and verbal abuse, a greater number of injuries, and a greater sense of threat than women who did not meet the criteria. While physical and psychological abuse are both related to PTSD, Street and Arias (2001) found that only psychological abuse was a unique predictor of PTSD symptomatology. There is further evidence that development of PTSD is also related to the intensity and frequency of the impugned traumatic experiences (Green, 1990; Houskamp & Foy, 1991; Marais et al., 1999).

The Neuroendocrine Variations Associated with PTSD and Depression

Of the numerous physiological consequences of stressor experiences, the most widely investigated involves hypothalamic-pituitary-adrenal (HPA) axis functioning, a closed-loop stress-response system (Cullinan, Herman, Helmreich, & Watson, 1995; McEwen, 2000; Sapolsky, Zola-Morgan, & Squire, 1991). Under normal conditions, when an incoming stimulus is perceived as stressful, neurons in the hypothalamic paraventricular nucleus (PVN) are activated, leading to the synthesis and release of corticotropin-releasing hormone (CRH). This secretagogue, together with arginine vasopressin (AVP), is released from terminals at the external zone of the median

eminence and, through the portal blood system, stimulates the release of adrenocorticotrophic hormone (ACTH) from the pituitary (Kascow et al., 2001; Lupien et al. 1999; Michelson et al., 1995). The ACTH, in turn, stimulates the biosynthesis and release of glucocorticoids, including cortisol, from the adrenal glands. This hormone activates the metabolic and immune processes required for the adaptation to stressors (Meyerhoff, Oleshansky, & Mougey, 1988; Michelson et al., 1995; Sapolsky, Krey, & McEwen, 1984) and further stimulates the hippocampus and hypothalamus, resulting in the attenuation of CRH synthesis and release, and hence attenuating HPA activity (Sapolsky et al., 1984). Together, these neurochemical alterations may prepare the individual to deal with the stressor, blunt the impact of physical or psychological attributes of the stressor, and stimulate processes which preclude excessive physiological activation (McEwen, Brinton, & Chao, 1990; Munck, Guyre, & Holbrook, 1984).

Although neuroendocrine processes, in conjunction with cognitive and behavioural processes, prepare the individual to combat stressors, it is thought that when a stressor is chronic in nature and when the behavioural mechanisms of dealing with a stressor are unavailable, the endogenous neurochemical systems may become overly taxed and the diminution of resources may render the individual increasingly vulnerable to pathology (allostatic load) (McEwen, 1995, 2000). Allostatic load, resulting in the inability to contain glucocorticoid secretion, may induce a wide range of detrimental outcomes, including increased insulin levels which favour obesity and atherosclerosis, immune suppression, neuronal death and remodelling of dendrites, sympathetic overactivity, and behavioural abnormalities such as hypervigilance and depression (McEwen, 1995, 2000).

During conditions of chronic stress, alterations occur in the neuroendocrine system such that the feedback mechanism provided by the HPA axis does not function effectively (McEwen, 1995; Sapolsky et al., 1991). In particular, the homeostatic function of cortisol in attenuating HPA activity, once stressors have subsided, is no longer efficient, evidenced by the rise in hypothalamic CRH and CRH mRNA levels following chronic stressor exposure (Chappell et al., 1986; Imaki et al., 1991; Nemeroff et al., 1984). With the development of relatively sensitive neuroendocrine and neuropeptide assays, coupled with increased behavioral sophistication, it has become possible to distinguish, at least to some degree, between the hormonal parameters of different stressor-related pathologies, including depression and PTSD (Dunn & Berridge, 1990; Kasckow et al., 2001; Yehuda, Giller, Southwick et al., 1991; Yehuda, Giller, & Mason, 1993; Yehuda et al., 1996).

Depression and the Neuroendocrine System

Depressive illness, usually of high severity, has been characterized by hypercortisolism and HPA axis dysregulation, involving excessive CRH production (for review see Heim, Owens, Plotsky, & Nemeroff, 1997; Kasckow et al., 2001; Michelson et al., 1995; Nemeroff, 1988; Nemeroff et al., 1984; Sheline, 2000). It has been postulated that the fast-feedback inhibition mechanism of the HPA axis is dysfunctional in depressed patients, resulting in the continuance of CRF secretion and the maintenance of cortisol synthesis and release. This is evidenced by an increase of basal cortisol levels as well as a non-suppression of cortisol release following the dexamethasone challenge (Brown et al., 1999; Gruen, 1978; Young et al., 1991). In line with this, a significant decrease of CRH receptor number has been reported in depressed suicidal patients, a

finding that is consistent with chronic CRH hypersecretion (Nemeroff, 1988). It has been suggested that a break-down of HPA axis regulation results from repeated episodes of hypercortisolemia, thus promoting hippocampal neurotoxicity, diminished cortisol feedback control, and an exacerbation of depressive symptoms (Gold et al., 1998; Sapolsky, 2000; Sapolsky et al., 1984; Sheline, Sanghavi, Mintun, & Gado, 1999; Sheline, Want, Gado, & Csernansky, 1996).

PTSD and the Neuroendocrine System

While CRH over-activity has been associated with PTSD (Baker et al., 1999; Bremner et al., 1997; Heim, Ehler, & Hellhammer, 2000; Kasckow et al., 2001; Yehuda, 1997; Yehuda, Giller, Southwick et al., 1991), a number of studies have demonstrated lower, rather than higher, cortisol levels in various PTSD populations (Anisman, Griffiths, Matheson, Ravindran, & Zul, 2001; Goenjian et al., 1996; Liberzon, Abelson, Flagel, Raz, & Young, 1999; Mason et al., 1990; Wang, 1997; Yehuda et al., 1990; Yehuda et al., 1996; Yehuda, Giller, & Mason, 1993). Several propositions have been developed to explain this peculiar finding, one of which is that low cortisol levels stem from sustained hyperactivity of the HPA axis, which is consistent with PTSD symptoms of hyper-arousal (Yehuda, 1997). Thus, enhanced negative feedback involving hypothalamic or pituitary mechanisms may culminate in decreased cortisol synthesis and release (Yehuda, Giller, Southwick et al., 1991). This is surprising considering that psychiatric disorders such as depression and anxiety, which are characterized by markedly high cortisol levels, frequently occur in tandem with PTSD (Mason et al., 1986; Mason et al., 1990; Wang, 1997; Yehuda, Giller, & Mason, 1993).

In order to further elucidate neuroendocrine correlates of PTSD, Yehuda, Lowry, Southwick, Shaffer, & Giller (1991) measured glucocorticoid receptor (GR) binding in Vietnam veteran PTSD patients. Compared to healthy controls, PTSD patients demonstrated an increased number of lymphocyte GR, which is consistent with low 24-hour cortisol concentrations (Goenjian et al., 1996; Yehuda, 1997; Yehuda, Lowry, et al., 1991). Thus increased glucocorticoid receptor activity may mediate the strength of the negative feedback found in this population. To further support the hypothesis of HPA axis sensitivity to negative feedback inhibition, Yehuda, Giller, Boissoneau, et al. (1991) administered low doses of dexamethasone to healthy control subjects and to PTSD patients. Compared to the control group, PTSD patients showed exaggerated cortisol suppression (Yehuda, Giller, Boissoneau et al., 1991). This effect was also found in PTSD patients with a concurrent diagnostic depressive disorder (Goenjian et al., 1996; Yehuda, Southwick et al., 1993). Together, these findings have been taken to indicate hypocortisolism and increased feedback inhibition of the HPA axis, along with CRH hyperactivity (Goenjian et al., 1996).

Taken together, it appears that sustained stressors (including rumination associated with the stressor) are associated with HPA dysfunction, in the form of excessive CRH activation, resulting in elevated or reduced levels of cortisol secretion from the adrenal glands. In a study by Yehuda et al., (1998), it was found that women with a history of rape showed significantly lower cortisol levels compared to women with no history of rape. Although it has been documented that abused women may develop PTSD as a result of their victimization, it is not expected that this will be found in the present sample. It is expected that PTSD symptoms will be reported, however, in most

instances, the symptoms will not be sufficiently severe to meet DSM-IV diagnostic criteria.

Psychological Factors

A number of psychological factors influence the impact of stress on health and on neurochemical systems. Focus will now turn to examining the contribution of psychological moderating factors of the stress response, namely alexithymia, and coping processes.

Alexithymia

Alexithymia, meaning “absence of words”, is a multifaceted personality trait (Salminen, Saarijarvi, Aairela, & Tamminen, 1994) that was first introduced by Sifneos in the early 1970s (Sifneos, 1973). The main features of alexithymia include a disturbance in identifying and describing emotional experiences, a diminished capacity for dreaming, a constricted capacity for fantasy and imagination, and a preoccupation with the details of external events (for review see Hyer, Woods, Summers, Boudewyns, & Harrison, 1990; Nemiah, 1975; Sifneos, 1975; Taylor, 2000). Although alexithymics can, to some extent, describe emotional experiences, their descriptions tend to be very repetitious and stereotypical in nature, indicating that the basis for these expressions lie in exteroceptive cues rather than inner feelings (Lane, Ahern, Schwartz, & Kaszniak, 1997; Nemiah, 1975). Thus, an alexithymic may describe feelings, for example of anger, based upon what they have learned as constituting angry emotions, not based on actual subjective emotions.

Due to a lack of emotional expressiveness and an inability to understand emotions of self and others, alexithymics experience difficulties in interpersonal relationships

(Sifneos, 1975; Sifneos, Apfel-Savitz, & Frankel, 1977; Stanton, Kirk, Cameron, & Danoff-Burg, 2000). When relationship conflicts arise, instead of conveying how they feel about the situation at hand, alexithymics will describe situational details and psychosomatic symptoms, thus failing to obtain emotional aid or comfort from others (Sifneos, 1975; Taylor, 2000). Moreover, alexithymic individuals may encounter difficulties in recognizing emotional cues, such as facial emotional expressiveness in others (Parker, Taylor, & Bagby, 1993), which is crucial for proper social interactions.

Attempts have been made to draw links between alexithymia and stress-related disorders. Indeed, alexithymia has been associated with stress-induced illnesses, including somatoform disorder, hypertension, panic disorder, eating disorders, PTSD, and depression (Taylor, 2000). The stress-alexithymic hypothesis holds that individuals who exhibit alexithymic characteristics will respond to a stressor in a specific way, which will in turn promote illness (Martin & Pihl, 1985). A normal stress response is comprised of three components: the physiological component (arousal), the behavioural component (coping and emotional expressiveness) and the cognitive component (subjective awareness of emotions) (Martin & Pihl, 1985; Taylor, 2000). The successful regulation of affect involves the reciprocal interaction among these three system components. Due to their inability to identify subjective feelings and to communicate personal feelings, alexithymics are left with a deficit in the behavioural and cognitive emotional components of the normal stress response, which leads to a breakdown in the three-component stress-response system.

The manner in which the breakdown is conceived illustrates the reciprocity between each of the three components. Beginning with the cognitive level, alexithymics

experience emotional unawareness, which is linked to the behavioural component in the form of emotional expression deficits. With the combination of emotional unawareness and lack of expression, it is surmised that the individual is left without the tools needed to effectively modify the stressful event, resulting in maladaptive responses. Thus, as a result of both cognitive and behavioural deficits, there is a negative impact on the physiological component of the stress response: physiological responses to stress are exacerbated by the inability to recognise, express, and react to stressful emotions, leading to the development of pathology (Martin & Pihl, 1985; Sifneos et al., 1977). Although research does not directly support this hypothesis and equal or diminished physiological reactivity to a stress challenge has been observed (Martin & Pihl, 1986; Wehmer, Brejnak, Lumley, & Stettner, 1995), high-alexithymics have been found to manifest tonic sympathetic hyper-arousal and to show a dissociation between subjective and physiological stress responses (Friedlander, Lumley, Farchione, & Doak, 1997; Martin & Pihl, 1986). In addition, a relationship between neuroendocrine dysfunction and alexithymia has been observed (Henry et al., 1992; Lindholm et al., 1990).

Although alexithymia has been identified in a number of psychiatric populations (Henry et al., 1992; Yehuda et al., 1997), and has been assessed in rape victims (Zeitlin, McNally, & Cassiday, 1993), alexithymia has not been directly assessed in women who have undergone psychological or physical partner abuse. However, PTSD and depression have both been associated with alexithymia (Honkalampi, Hintikka, Laukkanen, Lehtonen, & Vinamaki, 2001; Luminet, Bagby, & Taylor, 2001; Yehuda et al., 1997). Furthermore, the neuroendocrine profile found in PTSD patients has been documented in highly alexithymic individuals without PTSD, which may reflect the emotional numbing

and avoidance behaviour common to both disorders or to reduced responsivity to environmental stimuli (Henry et al., 1992; Lindholm et al., 1990). Similarly, depressed patients labelled “apathetic” have been found to have a less pronounced elevation of cortisol levels compared to other depressive populations (Sachar, Hellman, Fukushima, & Gallagher, 1970), although this was not directly assessed with respect to levels of alexithymia. Given the prevalence of both depression and PTSD in abused women, it may well be the case that a similar association can be made between alexithymia and partner abuse. In particular, alexithymia may be a contributing factor to the continuation of aggressive behaviours against women, as it may impede the ability of abused women to recognise, and react adaptively to their abuse.

A 3-year-long research program by Walker (1984) on abused women revealed that women tended to experience more anger when living with an abusive partner, although they did not always express it. While 52% reported shouting or cursing, 26% of women reported not showing their anger, 73% reported sulking and not attempting to speak, and 35% directed their anger at objects. From these reports, it is conceivable that battered women exhibit some alexithymic characteristics.

Coping Mechanisms

Coping refers to a conscious and voluntary response, oriented towards regulating one’s cognitive, behavioural, emotional, or physiological response to a stressor (for review see Folkman & Lazarus, 1988; Gross & Levenson, 1997; Lazarus, 1977; Lazarus & Folkman, 1984; Parker & Endler, 1996). The option to tolerate, escape, avoid, or manipulate one’s attention to the environment plays an integral part in how one responds to a stressor emotionally and physiologically. It is primarily when coping is perceived as

futile and resources are perceived as limited that feelings of distress result in response to taxing situations (Lazarus & Folkman, 1984; Lazarus, 1999).

Coping is normally dichotomized into two broad categories, based on the function performed by the two modes of coping: *problem-focused coping*, which entails actively changing the source of the distress, and *emotion-focused coping*, which involves manipulating ones' emotional response, while not attempting to change the actual source of the distress (Lazarus, 1993, 1999). Examples of emotion-focused coping styles include, blame (self or other), cognitive reappraisal, rumination, denial, escape avoidance, and general activity. Folkman and Lazarus (1980) have suggested that stressors may elicit both coping processes. However, problem-focused coping tends to predominate when the situation is perceived as being controllable, whereas emotion-focused coping predominates when the situation is perceived as uncontrollable (Bijttebier, Vertommen, & Vander Steene, 2001).

In addition to these categories of coping, social support appears to be an essential method of dealing with stressors and constitutes a modest, yet important, factor in maintaining health and preventing disease (Billings & Moos, 1984; Blythe, 1983; Cobb, 1976; Glass, et al., 2000; Kemp et al., 1995; Pynoos et al., 1993; Roberts, Cox, Shannon, & Wells, 1994). Social support has been defined as information that allows a person to feel cared for, esteemed, valued, and perceived as a member of a common and mutually guiding emotional relationship (Cobb, 1976; Weiss, 1974). Supportive interactions serve many functions including emotional comfort, emotional expression, avoidance, or problem-solving. It has been suggested that support from others acts as a "stress-buffering" mechanism, enhancing coping and decreasing the adverse effects of stress

(Cassel, 1974; Cobb, 1976; Lepore, Allen, & Evans, 1993). Specifically, Pilisuk and Minkler (1985) reported that seeking social support strengthened other coping abilities and further influenced immunological and psychological defences. A cross-sectional study by Ellsberg, Winkvist, and Stenlund (2001) showed that the majority of abused women in their sample failed to seek social support from outside sources. Indeed, it has been suggested that hesitancy in seeking social support after experiencing partner abuse may be attributed to the fear of not being believed and even blamed for the violent act (Ullman & Siegel, 1993).

Much of the literature regarding stressor effects has represented emotion-focused coping as a maladaptive strategy (Kohn, 1996), associated with pessimistic tendencies, depression, and negative physical symptoms (Billings & Moos, 1984; Endler & Parker, 1990; Mitchell & Hodson, 1983; Ravindran, Griffiths, Waddell, & Anisman, 1995). Conversely, problem-focused coping has been perceived as being conducive to personal well-being (Bak et al., 2001; Lacey et al., 2000; Mitchell & Hodson, 1983). However, studies have shown that some emotion-focused strategies may actually be beneficial. In line with what is observed in the literature on alexithymia, emotional expression has been recognised as helpful in responding to stressful events in a way that decreases the amount of distress experienced (Lazarus & Folkman, 1984). Specifically, proper emotional expression has been found to be associated with psychological well-being, healthy physiological and immune functioning, and general positive social functioning (Gross & Levenson, 1997; Payne, 2001; Smyth, 1998; Wegner, Shortt, Blake, & Page, 1990). Thus, from this perspective, in order to determine whether emotion-focused coping is adaptive or not, it must first be determined whether a given emotion-focused coping

response is merely maladaptive rumination or whether it constitutes active intentional coping (Carver, Scheier, & Weintraub, 1989; Stanton, et al., 2000). For example, positive reappraisal or seeking social support may well be adaptive, whereas denial, suppression, or escape-avoidance is an example of a more maladaptive emotion-focused coping style (Afari, et al., 2000; Amir, Kaplan, Efroni, & Kotler, 1999; Gross, 1998; Hughes, Budd, & Greenaway, 1999; Hyer, McCranie, Boudewyns, & Sperr, 1996; Perrott, Morris, Martin, & Romans, 1998; Scheier, Weintraub, & Carver, 1986; Seiffge-Krenke, 2000; Welch & Austin, 2001), although once again, avoidance/denial may serve a function (e.g., in the case of a patient with an untreatable cancer) (Sklar & Anisman, 1981).

It should be underscored that it is too simplistic to pit one coping style against another. Indeed, the choice of coping strategy and its adaptive significance will depend on the context in which the stress is being produced, the type of stressor encountered, the individual (i.e. personality dispositions), the available resources to the individual, and the length of time in which the coping mechanisms is used (Bosworth, Feaganes, Vitaliano, Mark, & Siegler, 2001; Carver & Scheier, 1999; Cohen & Lazarus, 1973; Costa, Somerfield, & McCrae, 1996; Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986; Kemp et al, 1995; Lazarus, 1977; Lazarus, 1993; Lazarus, 1999; Levine, et al., 1987; McCrae & Costa, 1986; Mendolia & Kleck, 1993; Mitchell & Hodson, 1986; Parkes, 1986; Pines, Aronson, & Kafry, 1981; Shalev, 1996; Suls, David, & Harvey, 1996). Further, coping styles, like stressor perceptions, are not static but vary over time. Individuals will employ different coping strategies during the course of a stressor encounter, although it would be expected that certain coping styles would predominate (Tennen, Affleck, Armeli, & Carney, 2000). Furthermore, it appears that individuals use

multiple coping styles concurrently or sequentially, and hence it may be more appropriate to consider coping styles in a collective manner (Lazarus, 2000).

Given the interplay between stressors and coping strategies, it should not be surprising to find that coping styles may also influence the neuroendocrine response elicited by stressors. Indeed, several studies have indicated that passive coping, repression, and denial may be related to hypocortisolism (Mason et al., 1990; Mason, et al., 2001; Wolff et al., 1964). For instance in one particular study, Wolff et al (1964) focused on the parents of fatally ill children and their methods of coping with stress. Parents who denied the severity of their child's leukemia showed lower than normal 17-OHCS excretion rates, which is an indication of low cortisol levels.

While the relationship between coping strategies and endocrine functioning among abused women has not been investigated, there is reason to believe that the psychological impact of abuse is related to coping styles. It has been demonstrated that abused women tend to suppress their own feelings of anger, or use disengagement coping strategies in order to deal with their abuse (Claerhout, Elder, & Janes, 1982; Douglas, 1987; Finn, 1985; Launius & Jensen, 1987). Clements & Sawhney (2000) found that abused women who engaged in self-blame and avoidance coping were more likely to experience feelings of dysphoria than women who used problem-focused coping strategies. It was further reported that battered women who used disengagement coping strategies, although beneficial in the short run, were more likely to exhibit PTSD symptoms (Kemp et al., 1995). In addition, Kemp et al. (1995) found that perceived social support among these women was related to lower levels of PTSD.

Given the increasing evidence showing a relation between alexithymia and hypocortisolism in PTSD research (Henry et al., 1992) it is conceivable that abused women who use avoidant emotion-focused coping strategies, stemming from alexithymia, may exhibit particularly marked HPA disturbances.

Investigation Objective and Hypothesis

The present investigation will examine emotional responses and salivary cortisol levels in response to a brief film portraying a young woman describing an abusive relationship to a therapist. It is expected that this film will promote an increase of cortisol. This effect, however, will be (a) particularly marked among women who have experienced an abusive dating relationship, (b) more pronounced among abused women who display poor coping strategies (e.g., emotion-focused rather than problem-focused) and low social support coping, (c) greater in abused women with a background of depression (e) minimal in abused women reporting PTSD symptoms, despite elevated emotional responses to the reminder film, and (f) will be minimal in abused women who exhibit alexithymic characteristics, which will coincide with a diminished emotional response to the reminder stimulus. As any observed effects in abused women may reflect general increased reactivity, not attributable to reminder stimuli per se but to general stress sensitization (i.e., cross-sensitization), salivary cortisol levels and affective responses will be assessed in response to a second short film, regarding difficult experiences at University.

With regards to affective reporting in response to the films, it is predicted that, compared to non-abused women, abused women will display greater negative affect and lower positive affect to the abuse film. Since cross-sensitization may occur in PTSD and

in stressor situations in general, there is reason to believe that women who have experienced partner abuse may respond to a general stressor with increased reactivity, although to a lesser extent than in the case of the abuse film. Thus, it is predicted that abused women will display greater negative affect and lower positive affect to the academic film compared to non-abused women. Furthermore, it is predicted that negative affect reporting will be augmented and positive affect reporting will be diminished in women with a background of depression, anxiety, or emotion-focused coping. The moderating effect of alexithymia is predicted to blunt or neutralize all affective reporting in the abuse group. In this respect, positive and negative affect responses to the abuse and academic film will be reminiscent of that evident among non-abused women. It is further hypothesized that all moderating effects will be more pronounced in abused women than non-abused women.

Method

Participants

In the first session, participants included 85 female Carleton University students, aged 18 to 26 years old ($M = 19.3$, $SD = 1.4$). At this time, 8 (9.5%) participants were dating someone casually, 58 (69%) were in a serious relationship, three (3.6%) were engaged or married, five (6%) were living with their partner and 10 (11.9%) reported that they were single or had recently broken-up with their partner. Women who reported having recently broken up were included in the present study for several reasons: they had already responded to the Conflict Tactics Scale in a previous session which classified them as abused or non-abused, and further, the break up was relatively recent. As well, having experienced an abusive relationship, it was expected that they would react to the

film challenge much in the same way as those participants who were still in an abusive relationship. The time since they broke up with their partner ranged from one day to 12 weeks. On average, at this time point, women reported having been in their relationship for 21.49 (SD =12 .96) months. In the second session, of the 72 participants who remained in the study, nine (12.5%) were casually dating someone, 42 (58.3%) were in a serious relationship, four (5.5%) were engaged or married, six (8.3%) were living with their partner, and 12 (16.6%) reported either being single or having recently broken up. The time since they had broken up with their partner ranged from 25 days to eight weeks. On average, at this point in time, women reported having been in their relationship for 23.22 (SD = 13.62) months. When questioned about the level of satisfaction with the quality of their relationship, ranging from -3 (completely dissatisfied) to +3 (completely satisfied), the average response was 1.45 (SD=1.78) in the first session and 1.31 (SD=1.82) in the second session. Thus, on average, women were fairly satisfied with the quality of their relationship.

Of the 85 participants, 83 (97.65%) were Canadian citizens, one student was from England and another was from Guyana.

In the first session, 16 (18.82%) participants reported having received therapy at some point, but none were undergoing therapy at the time. By the second phase, 12 (16%) women reported having been to therapy and two (2.78%) were currently being treated. Of particular relevance to the cortisol data, 55 (64.71%) women in the first session reported taking birth control, four (4.71%) were taking anti-inflammatories, one (1.18%) was on antidepressant medication, one (1.18%) reported taking anxiolytic medication, and 16 (18.82%) reported taking "other medication", such as bladder

infection pills or tetracycline for acne. In the second session, 51 (70.83%) women were on birth control, two (2.78%) were taking anti-inflammatories, and 11 (15.2%) reported taking "other medication". No participants reported use of anti-depressant and anxiolytic medication at this time.

While the demographic information (e.g. relationship length) of participants varied, the sample size was too small to make comparisons, and thus women's responses were collapsed across these variables.

Procedure

Following the attainment of informed consent (Appendix A), students were asked to complete a battery of questionnaires in their first year seminar class. Included in the questionnaire package were measures that assessed background information, including relationship status (Appendix B), and the Coping Strategies Scale- Revised (COSTS-R: Beckham & Adams, 1984) (Appendix B).

Participants who reported currently being in a relationship were contacted by telephone and invited to take part in a study on intimate relationships. Since the study was a component of a larger investigation, participants were informed that the study would include three separate sessions, each lasting a half-hour to one-hour, over the course of the academic year; November/December, January/February, and March/April (Appendix C). The present study focused on data gathered during the two final sessions. However, various measures obtained from the pre-selection seminar course and in the November session were also considered for the purpose of this study.

In the November session, participants were asked to read and sign an informed consent form, requesting their participation in all three sessions (Appendix A). They were

then asked to complete a questionnaire package, which included measures that assessed the current status of their relationship and the Conflict Tactics Scale-Revised (CTS2: Strauss, 1979) (Appendix D).

During the January/February and March/April session, in addition to answering various questionnaires (described below), participants were asked to watch a 10-minute video. Participants were randomly assigned to one of two videos during each session. One video depicted a young woman describing her abusive relationship to a therapist (Appendix E). The events discussed were typical of an abusive relationship among this population. It was anticipated that the content of this film may cause discomfort in certain participants when viewing the film and thus all participants were forewarned and told that they may withdraw at any time during the screening of the film. The second video depicted a woman describing her academic troubles to a counsellor (Appendix E). The films were counterbalanced to control for carryover effects. Due to the additional request, a second consent form was provided during the second session, pertaining to viewing of the two films (Appendix A). Should participants have refused to watch the film, they were asked solely to complete the questionnaire portion of each session. The questionnaire package in the second and third session included measures assessing the status of their current relationship, the Impact of Events Scale-Revised (IES-R: Weiss & Marmar, 1995) (Appendix F), the 13-item Beck Depression Inventory (BDI: Beck & Beck, 1972) (Appendix F), the Twenty-item Toronto Alexithymia Scale (TAS-20: Bagby, Parker, & Taylor, 1994) (Appendix F), the Positive and Negative Affect Schedule (PANAS: Watson, Clark, & Tellegen, 1988) (Appendix F), and an open ended coping question (Appendix F). Questionnaires were completed before the film, however, the

PANAS and the open-ended question were completed after viewing the film, to assess their attitudes towards the events in the video.

During each session, participants were asked to provide salivary samples to determine circulating cortisol levels. These samples were collected by placing a piece of dental cotton in each participant's mouth for approximately 60 seconds, or until the cotton was thoroughly wet, after which it was inserted into a test tube. A saliva sample was collected at the beginning of every session and after completing the questionnaires. In the second and third session, a third sample was collected approximately 20 minutes after viewing the film. All samples were maintained at -80°C until subsequent cortisol determinations.

While contact numbers were provided at the end of each session, debriefing only occurred at the end of the third session in March/April (Appendix G).

Cortisol Determinations

Salivary cortisol levels were determined, in duplicate, by means of a solid phase radio-immuno assay using ^{125}I kits obtained from ICN Biomedicals Inc., CA. The intra- and extra-assay variability for this assay was less than 10%.

Measures

The Conflict Tactics Scale-Revised (CTS2). Physical violence was operationalized by the CTS2. The CTS2 (Straus, Hamby, Boney-McCoy, & Sugarman, 1996) is a 78-item self-report measure that assesses the various tactics employed by both intimate partners to resolve conflict. The CTS is commonly used as an index of physical assault and has been validated cross-culturally. The subscales of this measure include: negotiation ("suggested compromise to an argument"), psychological aggression

("insulted or swore at partner"), physical assault ("kicked, bit, or punched partner"), sexual coercion (used force to make partner have sex"), and injury ("partner went to doctor for injury"). Participants were asked to respond on a 5-point scale, from 0 (Never) to 4(6-10 times) to indicate the extent to which each item applied to them and to their partner. Straus et al. (1996) found this measure to have good inter-item reliability and construct and discriminant validity.

All five conflict tactics indices were individually scored by obtaining the average of each subscale and multiplying each respectively by the number of items on each subscale. This procedure was done in order to account for possible missing values.

Inter-item reliability analysis in the present study showed high reliability for psychological (7 items) and physical abuse (11 items) subscales (Cronbach's $\alpha = .85$ and $.91$ respectively). Injury (5 items), and sexual abuse (7 items) subscales, however, only showed moderate-low reliability (Cronbach's $\alpha = .75$ and $.55$ respectively). The low reliability of these two subscales was probably a reflection of the small degree of variance in the present sample, in that very few women experienced sexual abuse or injury.

Coping Strategies Scale-Revised (COSTS-R). A reduced version of Beckham and Adam's (1984) COSTS was used for the present study. This scale was chosen for its multidimensional assessment of coping strategies. For the purpose of the present investigation, the religiosity scale was excluded as a coping subtype. The remaining subcomponents used included blame ("blamed others for your problems"), emotional expression ("let one or more people know how irritated you are with them"), emotional containment ("hid your feelings from others"), social support seeking ("talked with

friends or relatives about your problems”), cognitive restructuring (“told yourself that other people dealt with problems such as yours”), general activity (“gone for a drive”), avoidance/denial (“tried to keep your mind off things that are upsetting to you”), problem-solving (“taken steps to overcome your problems”), and passivity (“worried about your problems a lot”). Participants were asked to respond (yes or no) to each item as to whether or not the items applied to them.

The COSTS-R was divided into three composite indices, including support seeking and emotional expression, emotional containment, and cognitive problem-solving. In order to account for possible missing values, each index was calculated by adding the respective items, obtaining an average for each index and then multiplying the averaged scores to obtain a total score. Support seeking and emotional expression (18 items) generated moderate internal consistency (Cronbach's $\alpha = .75$). Emotional containment, which included items assessing blame, emotional containment, denial, and passivity (26 items), showed high inter-item reliability (Cronbach's $\alpha = .85$). Cognitive problem-solving, which included items assessing cognitive restructuring, activity, and problem solving (32 items), generated high internal reliability (Cronbach's $\alpha = .87$).

Coping Strategy Open-Ended Question. In order to assess coping strategies used in a specific context (i.e. partner abuse and academic failure), an open-ended questionnaire was administered after viewing of the films. The question read: After having watched the film... how would you cope in this situation? (i.e., what would you do in this situation and how would you personally feel?). Content analysis was performed on the open-ended coping question to determine which coping strategies were used specific to the scenario in the video. Beckham and Adam's (1984) dimensions of coping

formed the basis of the classification used. For the inter-rater reliability of classifications, a second coder coded 12 randomly selected participants. Of the 32 statements that were coded by the primary coder, there was only 1 (3%) disagreement. In addition, the primary coder identified two (9%) additional references to a coping strategy. Final agreements were made regarding the differences in coding: rumination, and not emotional expression, was decided to represent statements of worry without proper resolution strategies; the statement “I feel betrayed by him” was decided to represent blaming-others; and the statement “nothing (i.e., I wouldn’t do anything)” was decided to represent passivity. Overall, of the 12 participants that were coded, 9 (75%) were perfectly agreed upon.

The Toronto Alexithymia Scale (TAS-20). A 20-item version of the self-report Toronto Alexithymia Scale was used to assess alexithymic characteristics in our sample. This version is superior to earlier ones, in that it has been demonstrated to possess good internal reliability, test-retest reliability and convergent validity (Bagby, Parker, & Taylor, 1994; Bagby, Taylor, & Parker, 1994; Parker, Bagby, Taylor, Endler, & Schmitz, 1993). The TAS-20 consists of three subscales that measure difficulty identifying feelings (7 items), difficulty describing feelings (5 items), and external-oriented thinking (8 items). Participants were asked to respond to each question on a 5-point scale, from 1 (Strongly Agree) to 5 (Strongly Disagree).

Scale reliability analyses showed moderate to high inter-item reliability for the TAS-20 subscales (Cronbach's α : identifying feelings = .85; describing feelings = .86; external-oriented thinking = .71). Consistent with past findings, the three subscales were low to moderately correlated ($r = .35$ to $.71$, $p < .01$), reflecting their three-factor structure

(Bagby, Parker, & Taylor, 1994). Although correlations between the external-oriented thinking subscale and the other two subscales were low, total scores were used. While this may call into question the validity of present findings, it should be emphasized that all past research using the TAS have used total scores to define alexithymia. Thus, it was considered important to use total scores in this study, so as to remain consistent with past research. Total scores were averaged and multiplied by 20 in order to account for possible missing values. Internal reliability of the total scale was .83.

Impact of Event Scale-Revised (IES-R). A revised version of the IES, developed by Weiss and Marmar (1995), was utilized to assess post-traumatic stress disorder (PTSD) symptomatology. The 22-item scale is comprised of seven items that assess hyper-arousal symptoms, eight items that assess avoidance symptoms, and seven items that assess intrusion symptoms. Each item subset has been found to have internal consistency and reliability. Participants were asked to indicate on a 5-point scale, ranging from 0 (Not at all) to 4 (Extremely), how distressing each item was within a one-week time frame.

Internal reliability analyses showed high inter-item reliability of the intrusion (Cronbach's $\alpha = .88$), avoidance (Cronbach's $\alpha = .86$), and hyper-arousal subscales (Cronbach's $\alpha = .88$). Due to the moderate to high correlations between the three subscales ($r = .69-.84$, $p < .01$), total scores were used. Scores were summed, averaged, and multiplied by the number of items on the scale to account for missing values. Internal reliability of the total scale was .95.

Beck Depression Inventory (BDI). The 13-item BDI (Beck & Beck, 1972) was used in the present study to assess the degree to which participants were experiencing

depressive symptoms. Each item describes a depressive behaviour and participants were asked to indicate the severity of each item from 0 = I do not feel... (e.g. sad) to 3 = I am so sad or unhappy that I can't stand it.

Total scores on the BDI were summed, averaged, and multiplied by the number of items on the scale to account for missing values. Scale reliability analyses showed high interitem reliability (Cronbach's $\alpha = .88$).

Positive and Negative Affect Schedule (PANAS). The PANAS, developed by Watson, Clark, and Tellegan (1988) was utilized to measure negative and positive affect. This measure is comprised of two 10-item mood scales (positive affect and negative affect). Both scales have been found to be highly internally consistent, uncorrelated, and stable across a two-month period. The positive and negative affect subscales further show discriminant and convergent validity. Each subscale consisted of 10 adjectives (10 positive and 10 negative) of which participants were asked to respond on a 5-point scale ranging from 1 (very slightly) to 5 (extremely). For the purpose of the present study, the time instructions used were: "Indicate to what extent you feel this way after having watched the film".

Scores on positive and negative affect were calculated by adding positive and then negative adjectives, respectfully. To account for possible missing values, total scores on positive and negative affect were then individually averaged and multiplied by the number of items in the subscale, thus resulting in a total positive affect score and a total negative affect score.

Scale reliability analyses showed high internal reliability for both positive and negative affect items (Cronbach's $\alpha = .87$ and $.88$ respectively).

Results

Data Reduction and Formation of Indices

Physical abuse, measured by the revised Conflict Tactics Scale, comprised mean scores from the physical abuse, injury, and sexual abuse subscales. These three subscales were grouped due to the small sample size and skewness of the distribution of responses, which reflected the low number of participants who reported high levels of physical abuse, injury, and sexual abuse (see Table 1). In this respect, any score above zero constituted the presence of physical abuse. Participants were categorized into those who had been “physically abused” or “non-physically abused”. Of the 84 women who participated in the study, 23 were categorized as physically abused.

Psychological abuse was also measured using the revised Conflict Tactics Scales. Consistent with the other Conflict Tactics subscales, the distribution on the psychological abuse subscale was skewed, with few participants reporting high levels of psychological abuse (see Table 1). Thus, for the purpose of categorizing women into “psychologically abused” and “non-psychologically abused”, the sample was divided at the 85th percentile of the distribution, which reflected a score of five or greater. This dividing point was chosen to balance sample size, with a score that would represent a level of abuse that might significantly impact women’s psychological well-being. In this respect, of the 84 participants in the first session, 13 women were categorized as psychologically abused.

Physical and psychological abuse were moderately correlated ($r = .37, p < .05$), indicating that some of the women who experienced one form of abuse also experienced the other. Specifically, of the 23 participants who were categorized as having experienced physical abuse, 9 of these women were also categorized as having experienced

Table 1

Mean Reporting on the Conflict Tactics Scale-Revised

CTS-R subscale	<i>N</i>	Range	Mean	<i>SD</i>
Physical abuse	84	0-17	.56	2.28
Injury	84	0-3	.14	.54
Sexual abuse	84	0-8	.49	1.50
Psychological abuse	84	0-22	2.30	4.12

psychological abuse.

Moderating factors, including depressive symptoms (BDI), PTSD symptoms (IES-R), and alexithymic characteristics (TAS-20) were each averaged, respectively, and multiplied by the number of items on each scale to get a total sum. Multiplying each average score by the sum of items was performed in order to adjust for possible missing values. Following this, BDI, IES-R, and TAS-20 total scores from the first and second session were averaged to create the participant's true score. This procedure was possible because the scores on each measure did not statistically differ from one session to the next (BDI: $t(72) = .47, ns$; IES-R: $t(68) = -1.84, ns$; TAS-20: $t(72) = -.97, ns$). For the purpose of exploring potential 3-way interactions between abuse, the relevant psychological moderating variable, and film type, on outcome variables, a median split was used for scores on the BDI, IES-R, TAS-20 and coping indices.

The outcome variables, positive and negative affect, which were measured by the PANAS, comprised a positive-summed and a negative-summed score for each respective film. Positive and negative affective responses to the films were not significantly correlated.

Cortisol change resulting from the film manipulation was determined as a proportion of the cortisol levels seen after versus before the film was viewed. Ratio scores were used to express the change in cortisol response to the films, as appreciable variability exists with respect to basal levels of the hormone, and also to control for the possible effects of medication (e.g. hormone medication, thyroid pills) on resting cortisol levels.

Descriptive Statistics

Drop-outs. As a first step to determine the nature of the sample that participated in the present study, independent sample t-tests (using separate estimates of variance given the unequal sample sizes) were conducted to compare participants who remained in the study relative to those who dropped out. As seen in Table 2, these analyses showed that those who continued did not differ from those who did not on depressive symptoms or alexithymic characteristics. However, symptoms of PTSD were higher among women who remained in the study than women who dropped out, $t(25) = -3.10, p < .05$. With respect to physical and psychological abuse scores, no mean differences were found between women who remained in the study and those who dropped out.

Participants' mean responses to the coping indices were approximately at the midpoint for all three coping dimensions. No significant differences were found between participants who remained in the study and those who dropped out.

Of the 13 women who were categorized as psychologically abused, only one participant dropped out, and likewise, of the 23 women who were categorized as physically abused, only one participant dropped out. Taking into consideration the difference in size of the groups, these drop-out rates were somewhat lower than those found in the non-abused groups. Of the 71 women categorized as non-psychologically abused, 10 dropped out and of the 61 women categorized as non-physically abused, 10 dropped out. Therefore, it is unlikely that participants dropped out of the study due to any distress or difficulties associated with the presence of psychological or physical abuse.

Table 2

Mean Score on Psychological Measures Among Participants Who Remained and Dropped Out of the Study

Measure	Attrition					
	Remained			Dropped out		
	<i>N</i>	Mean	<i>SD</i>	<i>N</i>	Mean	<i>SD</i>
BDI	73	5.07	4.13	11	4.00	3.82
TAS-20	73	46.45	13.64	11	47.73	13.92
IES-R	72	16.75*	17.10	10	7.20	7.54
Physical Abuse	72	.43	1.21	11	.24	.80
Psychological Abuse	73	2.47	4.35	11	1.18	1.60
Emotional Containment	73	.49	.21	11	.52	.26
Cognitive Problem-Solving	73	.60	.22	11	.66	.23
Social Support Seeking	73	.51	.19	11	.57	.19

*Note: * $p < 0.05$*

Differences as a function of abuse. Consistent with expectations (see Table 3), compared to non-psychologically abused women, psychologically abused women reported greater symptoms of depression, $t(16) = -2.46, p < .05$, more PTSD symptoms, $t(15) = -2.59, p < .05$, and a significantly higher frequency of alexithymic characteristics, $t(17) = -3.32, p < .05$. However, reports on the three coping indices were similar.

Paralleling the pattern of results found with psychologically abused women (see Table 4), compared to non-physically abused women, physically abused women reported more depressive symptoms, $t(33) = -3.28, p < .05$, greater PTSD symptoms, $t(30) = -2.16, p < .05$, and more alexithymic characteristics, $t(35) = -3.46, p < .05$. Furthermore, compared to non-physically abused women, the physically abused group had a higher mean score on emotional containment, $t(38) = -2.27, p < .05$, while the difference on other coping indices were not statistically significant (see Table 4).

Specific coping activities to film. The open-ended coping questionnaire was administered after participants viewed the abuse and academic film in order to assess whether abused and non-abused women utilized the same or different number and types of coping strategies specific to the context at hand. Chi-square tests of association showed that of the 12 coping strategies that were coded, there were significant relationships between physical abuse and social support seeking in relation to the

Table 3

Mean Scores on Psychological Measures by Psychologically Abused vs. Non-Psychologically Abused Women

Measure	Abuse Category					
	Psychologically Abused			Non-psychologically Abused		
	<i>N</i>	Mean	<i>SD</i>	<i>N</i>	Mean	<i>SD</i>
BDI	13	7.54*	4.16	71	4.48	3.89
TAS-20	13	57.15*	12.38	71	44.66	12.98
IES	13	28.08*	19.84	69	13.07	14.91
Emotional Containment	12	.54	.24	71	.48	.21
Cognitive Problem-Solving	12	.60	.24	71	.60	.22
Social Support Seeking	12	.43	.20	71	.53	.19

*Note: * $p < 0.05$*

Table 4

*Mean Score on Psychological Measures by Physically Abused vs. Non-Physically Abused**Women*

Measure	Abuse Category					
	Physically Abused			Non-physically Abused		
	<i>N</i>	Mean	<i>SD</i>	<i>N</i>	Mean	<i>SD</i>
BDI	23	7.39*	4.40	61	4.03	3.55
TAS-20	23	54.87*	13.90	61	43.48	12.20
IES	23	22.70*	20.64	59	12.63	13.92
Emotional Containment	22	.58*	.21	61	.45	.21
Cognitive Problem-Solving	22	.56	.20	61	.62	.23
Social Support Seeking	22	.51	.20	61	.52	.19

*Note: *p* < 0.05

academic film, $\chi^2(1, N = 75) = 7.86, p < .05$, and between physical abuse and self-blame in relation to the academic film, $\chi^2(1, N = 75) = 7.87, p < .05$ (see Table 5). Specifically, an association was indicated between the presence of physical abuse and the use of social support seeking and self-blame as coping strategies in response to an academic stressor.

To compare the total number of coping activities reported by abused and non-abused women to film exposure, one-way analyses of variance (ANOVAs) were conducted. With respect to the academic film, no significant differences were found between psychologically abused women and non-psychologically abused women ($M=2.41, SD=1.24$ vs. $M=3.35, SD=1.74$; $F(1,73)=3.12, ns$) or physically abused women and non-physically abused women ($M=3.54, SD=2.13$ vs. $M=3.06, SD=1.49$; $F(1, 73)=1.29, ns$). Likewise, in the case of the abuse film, no significant differences were found between psychologically abused and non-psychologically abused women ($M=2.31, SD=1.32$ vs. $M=2.51, SD=1.49$; $F(1, 80)=.21, ns$), or between physically abused and non-physically abused women ($M=2.39, SD=1.34$ vs. $M=2.51, SD=1.51$; $F(1, 80)=.11, ns$).

Table 5

Frequency of Coping Strategies Used in Physically Abused and Non-Abused Women to the Academic Film

Coping Strategy	Reported frequency	Abused (%)	Non-abused (%)
Social support	0	12 (54.5%)	45 (84.9%)
	1-2	10 (45.5%)	8 (15.1%)
Self-blame	0	14 (63.6%)	48 (90.6%)
	1-2	8 (36.4%)	5 (9.4%)

Main Analysis

The present study examined the effects of physical and psychological abuse on neuroendocrine and affective responses to a reminder stimulus of abuse and to determine the moderating effects of PTSD, depression, alexithymia and coping on these responses.

In order to determine whether reactivity was specific to issues of abuse, and not to stressor exposure in general, a second film was presented involving an academic stressor. Initial analyses explored the effects of abuse alone on the outcome measures of cortisol and self-reported affect by conducting a 2 x 2 mixed factorial analyses. Though redundant with the subsequent analyses assessing moderating effects, these initial analyses allowed for a focus on the effects of key interest. Following this, the 3-way interaction effects between each type of abuse, a moderating factor, and the film that participants were exposed to (within groups) on measures of cortisol and self-reported affect were examined. This was accomplished by conducting a 2 x 2 x 2 mixed factorial analysis of variance (ANOVA) design, with one within- (film type) and two between-subjects (abuse and moderator) variables. Moderating variables, namely scores on the IES-R, BDI, TAS-20, and the three coping indices, were all dichotomized using a median split and their effects were analyzed separately. However, the conduct of all simple effects analyses employed these moderating factors as continuous variables. This was done in order to maintain richness of the continuous data, once the role of a moderator had been indicated. Thus, to determine whether responses were specific to the abuse or academic film, hierarchal regression analyses were conducted for each film in which the outcome variable was regressed first onto abuse, followed by the psychological moderator, with the interaction entered on the final step. When the 2-way interaction was

significant, the relations between the outcome variable and psychological moderator were assessed for abused and non-abused women. A test-wise alpha level of .05 was used for all statistical tests; while this results in an inflation of family-wise error, given the restricted sample size, this more liberal approach was adopted. Consistency across variables was taken into consideration to determine the robustness of effects.

The effects of abuse on cortisol change to film exposure. In assessing the effects of abuse on cortisol change in response to the films a 2 x 2 mixed ANOVA was conducted, first with psychological abuse and then for physical abuse. In assessing the effects of psychological abuse on cortisol change, no interaction between Film and Psychological Abuse was found to be significant ($F(1,53) = 1.06$, ns , $\eta^2 = .02$), nor were any main effects of Psychological Abuse on cortisol change significant ($F(1, 53) = 1.19$, ns , $\eta^2 = .02$) (see Table 6).

Likewise, in assessing the effects of physical abuse on cortisol change to films, neither the main effect of Physical Abuse ($F_s < 1$), nor the interactions involving this variable were significant ($F(1,53) = 1.00$, ns , $\eta^2 = .02$) (see Table 6).

Individual 2 x 2 x 2 ANOVAs were conducted for each psychological variable that was expected to moderate the relationship between abuse and cortisol change. No moderating effects were found regarding the relationship between psychological abuse and cortisol change, nor were any moderating effects found regarding the relationship between physical abuse and cortisol change to the two films.

While it was predicted that abused women would show a pronounced cortisol response to the abuse film compared to the non-abused groups, this was not found to be significant for either physical or psychological abuse. Furthermore, moderating variables

Table 6

*Mean Change of Cortisol to Film Exposure Expressed as the Proportion of Cortisol
(After vs. Before Film Exposure) in Abused and Non-Abused Groups*

Film Type	Abuse Category	Abuse Type					
		Physical			Psychological		
		<i>N</i>	Mean	<i>SD</i>	<i>N</i>	Mean	<i>SD</i>
Academic	Abuse	15	.82	.15	7	.84	.23
	No abuse	40	.83	.22	48	.83	.20
Abuse	Abuse	15	.87	.25	7	.94	.36
	No abuse	40	.78	.33	48	.78	.31

did not determine differential cortisol responses to the films. It should be underscored that the effects of the treatment in modifying cortisol levels were, in fact, relatively modest. Although uncertain, the possibility exists that the use of alternative test parameters (e.g., assessment during the afternoon when HPA reactivity was greater) might have permitted detection of cortisol changes attributable to the treatments.

The effects of abuse on affective responses to film exposure. In assessing the effects of abuse on positive and negative affective responses to the abuse and academic film, a 2 x 2 mixed multivariate analysis of variance (MANOVA) was conducted, first with psychological abuse and then with physical abuse. In testing the effects of psychological abuse on affective responses to film exposure, multivariate tests showed that neither the main effect of Psychological Abuse ($Pillais = .02, F < 1$), nor the interaction involving Psychological Abuse and Film Type ($Pillais = .04, F < 1$), reached statistical significance (see Table 7). In the case of physical abuse, the multivariate tests indicated a significant main effect for Physical Abuse ($Pillais = .14, F(2, 69) = 5.89, p < .05$), which was qualified by Film Type ($Pillais = .11, F(2, 69) = 4.19, p < .05$).

Univariate interaction effects showed that this relationship was only significant for negative affect ($F(1, 70) = 4.52, p < .05, \eta^2 = .06$), and though non-significant, a similar trend was found for positive affect ($F(1, 70) = 3.04, p = .085, \eta^2 = .04$). Simple effects analysis showed a significant main effect of Physical Abuse on negative affect to the academic film ($F(1, 73) = 12.41, p < .05, \eta^2_{\text{change}} = .15$). Specifically, abused women reported higher levels of negative affect to the academic film than did non-abused women. Although abused women reported greater negative affect to the abuse film, this

Table 7

Mean Positive (PA) and Negative (NA) Affective Responses to Films by Abused vs. Non-Abused Groups

Affect/Film	Abuse Category	Abuse Type					
		Physical Abuse			Psychological Abuse		
		<i>N</i>	Mean	<i>SD</i>	<i>N</i>	Mean	<i>SD</i>
PA/Abuse	Abuse	22	18.84	5.98	12	21.83	7.71
	No abuse	50	18.70	6.52	59	18.10	5.89
PA/Academic	Abuse	22	21.36	6.91	12	21.00	6.97
	No Abuse	50	19.22	6.27	59	19.75	6.45
NA/ Abuse	Abuse	22	17.91	5.50	12	17.92	4.25
	No Abuse	50	15.90	4.55	59	16.20	5.05
NA/Academic	Abuse	22	20.73	11.44	12	18.33	11.24
	No Abuse	50	14.34	4.81	59	15.93	7.25

difference was not statistically significant ($F_s < 1, \eta^2 = .02$) (See Table 7).

These findings did not support the present hypothesis in that abused women did not report higher negative affect and lower positive affect to the abuse film. However, non-physically abused women exhibited a significant decrease in negative affect to the academic film compared to physically abused women.

Moderating effect of PTSD symptoms. In order to determine the moderating effects of PTSD symptomatology on the relationship between abuse and affective responses to film exposure, a $2 \times 2 \times 2$ MANOVA was conducted for psychological abuse and then for physical abuse. Due to the small cell size ($n=1$) involving psychologically abused women who were low on the IES, multivariate analyses could not be conducted. This cell size was found for all Psychological Abuse x Low-moderator cells and therefore moderating effects of psychological variables on the relationship between psychological abuse and affective responses to film exposure were not analyzed.

In assessing the relationship between physical abuse and PTSD symptomatology on affective responses to each of the two films, there was a significant 3-way interaction between Physical Abuse, IES-R scores, and Film Type ($Pillais = .17, F(2,65) = 6.49, p < .05$). Univariate analyses showed that this interaction was significant in relation to both positive ($F(1,66) = 8.47, p < .05, \eta^2 = .11$), and negative ($F(1,66) = 5.06, p < .05, \eta^2 = .07$) affective responses (see Table 8). Follow-up simple effects analyses indicated that the interaction between Physical Abuse and IES-R scores on positive affect was specific to the abuse film ($F(1,75) = 5.6, p < .05, R^2 = .07$) and not to the academic film ($F < 1$). With respect to the interaction between Physical Abuse and IES-R scores on negative

Table 8

Mean Positive (PA) and Negative (NA) Affective Responses to Films by Abused and Non-Abused Women Who are High-Low on the IES

Affect/Film	Hi-Low IES	Physical Abuse					
		Abuse			No Abuse		
		<i>N</i>	Mean	<i>SD</i>	<i>N</i>	Mean	<i>SD</i>
PA/Academic	High	15	21.47	6.81	28	20.25	6.16
	Low	7	21.14	7.67	20	17.50	5.93
PA/ Abuse	High	15	20.33	5.67	28	18.50	6.57
	Low	7	13.71	3.90	20	18.90	5.99
NA/ Academic	High	15	24.07	12.45	28	14.57	4.90
	Low	7	13.57	3.05	20	14.25	4.98
NA/ Abuse	High	15	18.67	5.41	28	16.78	4.54
	Low	7	16.29	5.77	20	14.85	4.44

*Note*³: The effects of all moderator variables were analyzed using continuous variables, however, for the purpose of presenting the data in relation to the type of film and abuse, psychological variables were dichotomized into high-low using a median split.

³ This applies to all proceeding tables illustrating mean interactions between moderator, abuse and film type.

affect, simple effects analyses indicated that this relationship was specific to the academic film ($F(1,69) = 13.78, p < .05, R^2 = .17$) and not to the abuse film ($F < 1$). To further explore the relationship between IES-R scores and affect responses for abused and non-abused groups, simple-simple effects analysis showed that IES-R scores significantly moderated positive affective responses to the abuse film in physically abused women ($F(1,75) = 5.56, p < .05, \beta = .48$), but not in non-physically abused women ($F(1, 75) = .66, ns, \beta = -.11$). Similarly, IES-R scores significantly moderated negative affective responses to the academic film in physically abused women ($F(1,69) = 32.98, p < .05, \beta = .67$) but not in non-physically abused women ($F(1, 69) = 1.97, ns, \beta = .25$). Specifically, low IES-R scores were associated with decreased positive affect to the abuse film and high IES-R scores were associated with increased negative affect to the academic film, in physically abused women.

It will be recalled that PTSD symptomatology was expected to be associated with augmented negative and diminished positive affect to the abuse film. It was also thought that this moderating effect would be pronounced in abused women. Although a relationship was found between physical abuse and PTSD symptomatology on affective outcome, contrary to predictions, abused women low on IES-R reported lower levels of positive affect to the abuse film. Further, this relationship was not found for negative affect. However, it should be noted that a pattern was found for physically abused women to report higher negative affect to the abuse film.

Although the moderating effect of PTSD was expected with regards to the academic film, it was expected that the result would be less pronounced than that for the abuse film. In line with predictions, it was found that high IES-R scores were related to

more extreme negative affect reporting in physically abused women than low IES-R scores. However, no effect was found for positive affect.

Moderating effects of depressive symptoms. In order to determine the moderating effects of depressive symptomatology on the relationship between abuse and affective responses to film exposure, a 2 x 2 x 2 MANOVA was conducted for physical abuse.

Multivariate tests did not attain significance levels for the omnibus 3-way interaction between Physical abuse, BDI scores and Film Type ($Pillais = .08$, $F(2,66)=2.82$, $p = .06$). However, univariate interaction effects indicated a significant Physical Abuse x BDI score x Film Type interaction for positive affective response to film exposure ($F(1,67) = 5.81$, $p < .05$, $\eta^2 = .08$) (see Table 9). Due to the significant univariate analysis, follow-up simple effects analyses were conducted to determine the source for the Physical Abuse x BDI scores interaction on positive affect, although it is recognized that these results must be interpreted with caution. Simple effects analysis indicated a significant interaction between physical abuse and BDI scores on positive affect to the abuse film ($F(1,77) = 5.20$, $p < .05$, $R^2 = .06$) but not to the academic film ($F < 1$, $R^2 = 0$). Simple-simple effects analysis further indicated that the effects of BDI scores on positive affect to the abuse film was specific to the physically abused group ($F(1,77) = 5.66$, $p < .05$, $\beta = .50$) but not the non-physically abused group ($F < 1$, $\beta = -.09$). Specifically, physically abused women low on the BDI reported diminished positive affect to the abuse film compared to abused women who were high on the BDI.

As previously found with PTSD symptomatology, low BDI scores were associated with decreased levels of positive affect reporting to the abuse film in

Table 9

Mean Positive (PA) and Negative (NA) Affective Responses to Films by Abused and Non-abused Women Who are High-Low on the BDI

		Physical Abuse					
		Abuse			No Abuse		
		<i>N</i>	Mean	<i>SD</i>	<i>N</i>	Mean	<i>SD</i>
Affect/Film	Hi-Low BDI						
PA/Academic	High	18	21.33	6.99	25	19.40	6.08
	Low	4	21.50	7.55	24	19.25	6.63
PA/ Abuse	High	18	19.61	5.73	25	18.40	5.82
	Low	4	12.00	.82	24	19.54	7.28
NA/Academic	High	18	22.11	12.17	25	16.28	5.29
	Low	4	14.50	3.79	24	12.37	3.46
NA/ Abuse	High	18	18.67	5.43	25	16.96	4.73
	Low	4	14.50	5.07	24	14.71	4.23

physically abused women. Although response patterns were found, similar to PTSD, the moderating effect of BDI was not significant for negative affective reporting to the abuse film.

Moderating effects of alexithymia. In order to determine the moderating effects of alexithymic characteristics on the relationship between abuse and affective responses to film exposure, a 2 x 2 x 2 MANOVA was conducted for physical abuse.

Multivariate analysis showed a significant 3-way interaction between Physical Abuse, TAS-20 levels, and Film Type on affective responses to film exposure ($Pillais = .19$, $F(2,66) = 7.64$, $p < .05$) (see Table 10). Univariate interaction effects analyses showed this interaction to be significant for positive affect ($F(1, 67) = 15.47$, $p < .05$, $\eta^2 = .19$) but not for negative affect ($F < 1$, $\eta^2 = 0$). Follow-up simple effects analyses indicated a significant interaction between Physical Abuse and TAS-20 levels on positive affect to the abuse film ($F(1, 77) = 5.55$, $p < .05$, $R^2 = .07$) but not to the academic film ($F < 1$, $\eta^2 = 0$). Additional simple-simple effects analysis did not indicate whether the moderating effect of alexithymia on positive affect was specific to physically abused or non-abused women. However, trends indicated that the relationship may have been specific to the physically abused group ($F(1,77) = 3.26$, $\beta = .38$) and less so to the non-abused group ($F(1,77) = 2.56$, $\beta = -.21$).

While the exact nature of the moderating influence of alexithymia was not determined, the pattern of results were similar to that found in the preceding analyses concerning both PTSD and depressive symptomatology. It is also interesting that positive affective reporting to the abuse film, in non-abused high-alexithymic participants, was in

Table 10

Mean Positive (PA) and Negative (NA) Affective Responses to Films by Abused and Non-abused Women Who are High-Low on the TAS-20

Affect/Film	Hi-Low TAS-20	Physical Abuse					
		Abuse			No Abuse		
		<i>N</i>	Mean	<i>SD</i>	<i>N</i>	Mean	<i>SD</i>
PA/Academic	High	18	20.28	7.04	26	19.50	5.89
	Low	4	26.25	3.77	23	19.13	6.84
PA/Abuse	High	18	19.05	6.06	26	17.54	5.12
	Low	4	14.50	4.36	23	20.57	7.63
NA/ Academic	High	18	22.00	12.26	26	15.69	4.50
	Low	4	15.00	3.46	23	12.87	4.91
NA/ Abuse	High	18	18.50	5.30	26	16.08	4.17
	Low	4	15.25	6.40	23	15.61	5.11

the reverse direction of that found in the abused group. Furthermore, this reversal is in line with the hypothesis that high alexithymia is associated with low levels of positive affective reporting.

Moderating effects of coping. To explore the moderating effects of coping on the relationship between abuse and affective responses to film exposure, $2 \times 2 \times 2$ MANOVAs were conducted with each individual coping index and physical abuse. In assessing the moderating effects of emotional containment on the relationship between physical abuse and affective responses to film exposure, Film Type $\times$ Emotional Containment and Film Type $\times$ Physical Abuse interactions were found to be significant ($Pillais = .09$, $F(2, 64) = 3.21$, $p < .05$, and $Pillais = .11$, $F(2, 64) = 3.87$, $p < .05$, respectfully). These interactions were further qualified by a significant multivariate 3-way interaction ($Pillais = .19$, $F(2, 64) = 7.38$, $p < .05$) (see Table 11), which was then shown to be specific to negative affect ($F(1, 65) = 13.97$, $p < .05$, $\eta^2 = .18$). Follow-up simple effects analyses showed a significant interaction between physical abuse and emotional containment on negative affect towards the academic film ($F(1, 69) = 17.71$, $p < .05$, $R^2 = .20$) and not the abuse film ($F(1, 69) = 1.00$, ns , $R^2 = .02$). Simple-simple effects analyses indicated that emotional containment coping significantly affected negative affect reported in response to the academic film in physically abused women ($F(1, 69) = 35.40$, $p < .05$, $\beta = .69$) and not in non-physically abused women ($F(1, 69) = 2.37$, ns , $\beta = .27$). According to the means in Table 11, high emotional containment, with respect to abuse, was associated with greater negative affect in abused women to the academic film. Although non-significant, this trend was also found in abused women with respect to positive and negative affect to the abuse film, and positive affect to the

Table 11

Mean Positive (PA) and Negative (NA) Affective Responses to Films by Physically Abused and Non-abused Women Who are High-Low on Emotional Containmentment

Affect/Film	High-Low Emotional Containment	Abuse					
		Abuse			No Abuse		
		<i>N</i>	Mean	<i>SD</i>	<i>N</i>	Mean	<i>SD</i>
PA/Academic	High	12	22.25	6.34	22	19.68	6.71
	Low	9	20.44	8.20	26	19.35	5.93
PA/ Abuse	High	12	19.75	6.34	22	18.27	6.54
	Low	9	15.67	4.42	26	19.88	6.45
NA/Academic	High	12	27.75	11.42	22	15.18	4.38
	Low	9	12.22	1.30	26	13.85	5.25
NA/ Abuse	High	12	19.42	6.20	22	17.95	4.91
	Low	9	16.33	4.30	26	14.27	3.56

academic film. While significance levels were reached for negative affect specific to the academic film, the suggestive response patterns were similar to that previously found with mood disorders and alexithymia, in that high emotional containment was associated with heightened affect reporting.

In assessing the moderating effects of cognitive problem-solving on the relationship between physical abuse and affective responses to film exposure, no significant 3-way interactions were found to suggest the presence of a moderating effect. However, in addition to the Physical Abuse x Film Type interaction ($Pillais = .10$, $F(2, 63) = 3.59$, $p < .05$), there was a significant 2-way interaction between Cognitive Problem-solving and Film Type ($Pillais = .12$, $F(2, 63) = 4.38$, $p < .05$). Univariate interaction effects showed that the relationship between Cognitive Problem-solving and Film Type was specific to negative affect ($F(1, 64) = 8.85$, $p < .05$, $\eta^2 = .12$) (see Table 12). Follow-up simple effects found that the effect of cognitive problem-solving on negative affect was specific to the academic film ($F(1, 69) = 11.29$, $p < .05$, $R^2 = .12$), and not to the abuse film ($F_s < 1$).

While cognitive problem-solving did not moderate the relationship between physical abused and affective responses to film exposure, high levels of cognitive problem-solving were associated with decreased negative affective reporting to the academic film. It is noteworthy that the trend for the abuse film was in the opposite direction in that high problem solving was associated with higher negative affect.

In assessing the moderating effects of social support seeking in the relationship between physical or psychological abuse and affective response to film exposure, no significant effects were found.

Table 12

*Mean Negative Affective Response to Films by High-Low Cognitive Problem-solvers**Collapsed Across Abuse*

	Film Type					
	Academic Film			Abuse Film		
	<i>N</i>	Mean	<i>SD</i>	<i>N</i>	Mean	<i>SD</i>
Problem-solving						
High	32	14.44	6.40	32	17.31	5.54
Low	36	18.28	9.17	36	15.89	4.39

Discussion

The present investigation examined the effects of abuse on neuroendocrine and affective responses to stressful stimuli. In addition, the moderating effects of depression, anxiety, alexithymia, and coping strategies on these responses were assessed. In order to determine whether or not abused women were sensitized specifically to the reminder stimulus (i.e. issues of abuse), or were exhibiting an overall stress reactivity, a general stressor stimulus was also presented. In this respect, a film relating to an academic stressor was thought to be a stimulus that all first year students could identify with. From this, it could be determined whether elevated stressor reactivity among abused women was situation-specific (i.e., film-specific) or general in nature.

Initial Descriptive Analyses

In the present investigation, a low number of women reported physical and psychological abuse. With an operational definition of physical abuse being “one or more on the combined Conflict Tactics subscales”, 27.38% of the participants in dating relationships were considered to have experienced physical abuse. While this percentage is considerably lower than that reported by Dekeseredy & Kelly (1993), it is consistent with other studies, which have indicated a range from 12% to 86.2% (DeKeseredy & Hinch, 1991; DeKeseredy, Kelly, & Baklid, 1992; Langley et al., 1997). This variation in percentages is likely a product of how the definition of physical abuse is operationalized. Indeed, had a more stringent definition been used in this study (e.g. two or more items on the combined Conflict Tactics subscales), a lower percentage for physical abuse would have been evident. In fact, lower percentages were found for psychological abuse, which was operationally defined as “five or more items on the Conflict Tactics psychological

aggression subscale". With this definition, 15.48% of the women in this study were considered to have experienced psychological abuse. Once again, this percentage was low compared to that found by DeKeseredy & Kelly, but remains within the range documented elsewhere.

In addition to the relatively low percentages of women who have experienced some form of abuse, it should be noted that the distribution of these scores was highly skewed, indicating low levels of abuse severity. Due to the small sample size and low variance, it is important to consider the possible weakened effect that this may have had on some of the proposed relations that were the focus of the present investigation.

Consistent with previous findings (Kemp et al., 1995; Street & Arias, 2001; Weaver & Clum, 1995; West et al., 1990), both physical and psychological abuse were associated with greater depressive and PTSD symptomatology. It should also be emphasized that this heightened psychological distress was found despite the low severity of abuse in the present sample. These same findings have been previously documented (McCauley, Kern, Kolodner, Dergatis, & Bass, 1998), thus highlighting the importance of continuing research in the area of partner abuse in dating relationships, regardless of abuse severity.

It was also found that abuse in dating relationships was associated with higher levels of alexithymic characteristics. However, whether or not abused women are in fact more alexithymic than non-abused women is uncertain, since alexithymia is highly correlated with depression and PTSD symptomatology, both of which were heightened among psychologically and physically abused women. Thus, while this is a first

indication of alexithymia among young abused women, further analyses are necessary in order to determine whether this was a stable individual difference.

Of the three coping indices that were measured, using the revised Coping Strategies Scale, only emotional containment was found to significantly differ between physically abused and non-physically abused women. No differences were found between psychologically abused and non-psychologically abused women. However, this analysis was restricted to only three indices of coping, namely emotional containment, cognitive problem-solving, and social support seeking. In fact, a more detailed analysis of the coping profiles adopted by abused and non-abused women, using the same data set, indicated that abused women who exhibited high IES scores could be readily distinguished from abused women with low IES scores and from non-abused women (Matheson & Anisman, 2001). In particular, those abused women with high IES scores endorsed high levels of rumination, self-blame, and cognitive restructuring. In effect, these women were attributing their situation to their own shortcomings, and diminishing the contribution of their abuser.

Because it has been argued that omnibus coping checklists may not provide enough information regarding coping styles (Coyne & Racioppo, 2000), an open-ended coping question was administered to allow for a more in-depth analysis of individual intentions in the context of partner abuse. It has been stated that the efficacy and adaptive significance of coping strategies depends on the person and the type of threat encountered (Lazarus, 1999). In this respect, non-significant trends were found suggesting that abused women used slightly fewer coping activities than non-abused women. This decreased number in coping activities may represent a lack of flexibility in coping, which has been

suggested to be an important factor in adaptive coping (Carver et al., 1989). Thus, it may be postulated that well-being is associated with the number of, and hence flexibility in, coping strategies, and not with the specific type of coping strategy used. Indeed, abused women reported greater depressive and PTSD symptomatology, which may be a reflection of the rigid nature of their coping profile in the context of relationship conflict.

It must be underscored that coping changes over time and across situations (Tennen et al., 2000). Thus, assessing coping in a single index or a single point in time does not provide information regarding the long-term repercussions of coping with abuse. Furthermore, coping may change as a function of time outside of the situation. Hence, a woman who has escaped her abuser may begin to engage in different coping styles. For example, abused women who were found to engage in self-blame and cognitive-restructuring while in their relationship may switch to other-blame coping once out of the relationship.

The Effects of Abuse on Neuroendocrine Responses to Film Exposure

Prolonged stressor exposure has been found to cause sensitization of the neuroendocrine system, which in turn results in an exaggerated physiological response to ensuing stressors (Post, 1992; Sorg & Kalivas, 1995). Furthermore, it has been postulated that inflated reactions to subsequently encountered stressors may depend on the meaningfulness and relevance of the stressor to the individual. Thus, a reminder stimulus may serve as an especially poignant one. In this respect, it was hypothesized that abused women would exhibit a heightened cortisol response to the abuse film, as compared to non-abused women. In addition to the altered vulnerability to a particular stressor (i.e. abuse), there was reason to believe that cross-sensitization might also be observed in

using a general stressor unrelated to abuse. In this respect, it was hypothesized that abused women would exhibit a heightened cortisol response to the academic film, as compared to non-abused women. However, it was predicted that this increased responsivity would be greater in regard to the abuse film than the academic film. These predictions, however, were not statistically met.

Non-significant results could have been attributed to a number of factors. First, cortisol samples were taken in the morning, which, in hindsight, made the detection of stressor effects difficult. The secretion of cortisol follows a circadian rhythm: basal cortisol levels peak at 8:00 AM and then decline, reaching relatively low levels in the evening and early morning hours (Pruessner et al., 1997). When cortisol levels are on the decline (i.e., after 8:00 AM), it may be difficult for stressors to instigate marked increases of hormone secretion. In contrast, during the afternoon, when cortisol levels are relatively low, stressor-induced cortisol release may be provoked more readily. This proposition is highly speculative. However, it has been shown that cortisol release is pulsatile and the effectiveness of stressors in promoting further release is dependent upon whether cortisol is in a reactive or refractory phase (Lightman, et al., 2000). Indeed, in studies where stressors were found to provoke elevations of salivary cortisol, the procedures were typically undertaken in the afternoon (Pruessner, Hellhammer, & Kirschbaum, 1999; Pruessner et al., 1997). Thus, it is conceivable that had the experiment been conducted during the afternoon, cortisol would have already declined to base levels and HPA reactivity would have been greater. Along the same lines, a second argument for the lack of significant findings is that participants may have needed a longer relaxation period, before basal levels were taken. In any study, participants normally enter the experimental

session apprehensively, exhibiting high cortisol levels, which decline as the experimental session progresses. It may be that in the present study, women's cortisol levels prior to the film were taken during the point at which cortisol just started to decline and thus a stress response would not necessarily have resembled an increase in cortisol but rather a constant level of cortisol. Once again, because cortisol levels would have been declining, the stressor manipulation would have been less likely to effectively induce increases of glucocorticoid secretion.

A third argument for non-significant findings is in regard to the measurement that was taken. When measuring changes in cortisol levels in response to an experimental manipulation, enough time must elapse from the initial reading before a second sample can be taken. Debates have arisen concerning the duration of time that must elapse before a proper measurement can be obtained (Clark, Iversen, & Goodwin, 2001; Herbert & Cohen, 1993). In the present study, between 15 and 20 minutes had elapsed before the second cortisol reading was taken. It could be argued that this was not enough time for a true change in cortisol to take place, thus accounting for a weaker estimate of cortisol change. Indeed, it would have been preferable to assess cortisol levels at several time points following stressor exposure. After all, the treatment may not have affected the magnitude of the cortisol response but rather the time of the peak cortisol response (occurring sooner in abused women exposed to the reminder stimuli) or may have affected the rate at which cortisol normalization occurred.

Finally, a fourth reason for non-significant findings may be that the stimulus was not a strong enough stressor to induce a full stress reaction. However, as this was done intentionally, for ethical purposes, there exists little room for adjustment in this respect.

Specifically, it was thought that the issue of abuse in itself may be very stressful and that a mild tone would be more consistent with the best interests of participants who have experienced abuse in the past. In addition, the presentation of the film on a relatively small 19-inch screen may have diminished the effectiveness of the film's content. Indeed, research has shown that perception, attentiveness, and evaluation of a stimulus is determined by how that stimulus is delivered and displayed, regardless of stimulus content itself (Detenber & Reeves, 1996; Lombard, 1995; Simons, Detenber, Roedema, & Reiss, 1999).

Despite the fact that exposure to the film did not result in a statistically greater cortisol response in abused women compared to non-abused women, there was a modest trend in this direction following exposure to the abuse film. It is likely that the small sample size, and therefore low statistical power, contributed to the lack of significance of these trends. Regarding the academic film, all groups responded in a similar manner, with cortisol ratios ranging from .82 to .84. There was, however, a slight difference in the cortisol response to the abuse film. Abused women exhibited less of a change in cortisol (.87 and .94) to the abuse film than non-abused women (.78). In effect, abused women maintained the same level of cortisol throughout the experiment and did not display a decrease of cortisol levels as in the case of control individuals. In a study by McCann et al. (1993), it was found that while cortisol diminished over the course of the experiment in the control group, this decrease in cortisol was less pronounced among participants who were exposed to a psychological stress challenge. Thus, contrary to the expected augmented cortisol reaction to a stressor, there was a constant level of the stress hormone throughout the experimental session, which took place in the morning. As mentioned

before, this may be an indication of a stress response (i.e. increase in cortisol) during the time when cortisol is on a decline to base levels, thus constituting a break from the normal circadian variation. Also, it is important to note that trends did not support the cross-sensitization hypothesis.

The Effects of Abuse on Affective Responses to Stress Exposure

Sensitization of the neuroendocrine system has been documented in various populations, including those suffering from PTSD, which is characterized by an exaggerated physiological response to a reminder stimulus. It was hypothesized that this sensitization would be extended to negative affective responses to a reminder stimulus, as well as to nonspecific stressful stimuli. It was thus predicted that women who had undergone some form of abuse would be sensitized to issues of abuse and, thus, would react to a reminder stimulus with highly negative and low positive affect. In addition, it was predicted that altered responsivity in abused women would be associated with increased negative and decreased positive affect reporting to the academic film. Thus, in general, it was thought that the experience of abuse would cause hyper-responsivity in abused women to stressful stimuli.

Consistent with the cross-sensitization hypothesis, a pattern was found for women who have experienced physical abuse to exhibit generalized stress reactivity to both the academic and abuse film. This general responsiveness is consistent with the hyper-arousal characteristic of PTSD (American Psychiatric Association, 1994). Regarding the academic film, a significant relationship was found between physical abuse and high negative affect reporting. This pattern was also found for psychologically abused women, but the difference in affect was not statistically significant. With regard to positive affect

reporting to the academic film, differences were not statistically significant. However, abused women reported slightly more positive affect than did non-abused women.

In respect to the abuse film, no significant differences were found. However, examination of the means were suggestive of a relationship between the abuse film and trauma history. Both physically and psychologically abused women reported higher levels of negative affect to the abuse film. With respect to positive affective reporting, trends were found for abused women to report higher levels of positive affect than non-abused women. It should be noted that these patterns were similar to that found with respect to the academic film. Thus, taken together, it appears that abused women experienced heightened levels of emotion, regardless of the type of stressor and type of affect expressed.

It is of interest that the mean difference in negative affect between abused and non-abused women was greater for the academic film than for the abuse film. It may be that women who have experienced partner abuse did not appraise the abuse film as being extraordinary due to slight habituation from repeated exposure (Ohman, Hamm, & Hugdahl, 2000). Indeed, appraisal is an important component in determining whether or not a situation is stressful, which further determines how one will respond emotionally and cope in that situation. In a study investigating children's emotional responses to a simulated argument between two adults, El-Sheikh (1994) found that children from high-conflict homes perceived inter-adult anger as less negative in affect than children who were from low-conflict homes. Similarly, it was found that boys from physically aggressive homes reported simulated marital conflicts as being less negative than boys from verbally aggressive homes (O'Brien, Margolin, John, & Krueger, 1991). It may be

that the abuse film in the present investigation was not a potent enough stimulus to create a strong affective reaction in abused women, who may have experienced worse encounters themselves or who perceived the interactions that took place in the film to be a cultural norm. Another explanation is that abused women subconsciously blunted their negative affect to the abuse film, while honestly responding to the academic film, in order to mask their personal experiences and feelings. This explanation seems more plausible considering the observed trends in cortisol change to the abuse film.

While augmented negative affect was expected from abused women, the increased positive affect, although statistically non-significant, was surprising. Not only was positive affect not expected to follow after viewing unpleasant issues, but positive and negative affect are usually conceptualized as opposite poles on a continuum (Diener & Emmons, 1984; Russell & Carroll, 1999). However, the independence of positive and negative affect has been reported elsewhere (Cacioppo & Bernston, 1994; Larsen, McGraw, & Cacioppo, 2001; Potter, Zautra, & Reich, 2001; Rossi et al., 2000). By conceptualizing affect within a bivariate space, the presence of positive and negative affect may be regarded as co-activated, thus resulting in parallel changes to both positive and negative systems (Cacioppo & Bernston, 1994). In addition, it has been reported that positive and negative affect are governed by two distinct neural processes, allowing for the experience of mixed feelings (Lane, Reiman, Ahern, Schwartz, & Davidson, 1997; Larsen et al., 2001). Although the bipolar view is maintained in terms of stability over time, the co-activation of polar emotions has been documented in settings that are emotionally complex and short lived, such as affective responses after viewing a film (Larsen et al., 2001). However, even though it is possible that both positive and negative

affect can coexist in a single rating, it is difficult to explain why women would report high levels of positive affect to issues of abuse, or even issues of academic failure.

Since this was a novel approach in exploring affective parameters in response to stressful reminder stimuli, it is not possible to compare these results to past findings. However, based on research in related areas, various interpretations may be drawn. In particular, while abused women experienced more negative affect to stressful situations, they may have compensated for this negativity by reporting high positive affect. Thus, the issue of overt versus covert emotional expression needs to be considered. It may be argued that women who have experienced partner abuse at some time overtly report high positive emotion in order to socially minimize or suppress their negative affect. It has been found that emotions can be controlled to some extent (Gross & Levenson, 1997) and thus it may be that these abused women were controlling their positive affect to the abuse film.

Mood state is a fundamental issue that warrants consideration in assessing the relationship between perceived stress and affective outcome. The high negative and positive affect reporting in abused women may be a reflection of the higher frequency of depressive and PTSD symptomatology in this sample. Illnesses high in emotional reactivity include disorders such as atypical depression, seasonal affective disorder, bulimia, and PTSD (Nierenberg, Alpert, Pava, Rosenbaum, & Fava, 1998; Quitkin et al., 1984; Rossi et al., 2000). Thus, in the present study, high BDI scores may have represented a form of non-clinical atypical depression, which is characterized by rejection sensitivity and reactive mood (Nierenberg et al., 1998). Similarly, high IES-R scores may have represented hyper-arousal symptoms, which are characteristic of PTSD. Moreover,

it is well established that PTSD may be associated with comorbid depression (Blanchard, Buckley, Hickling & Taylor, 1998; Bleich, Koslowsky, Dolev & Lerer, 1997; Brady, Killeen, Brewerton & Lucerini, 2000; Constans, Lenhoff & McCarthy, 1997; McFarlane & Papay, 1992; Yehuda, Kahana, Southwick & Giller, 1994). Indeed, the development of PTSD symptoms may be related to the presence of depression or a previous history of depression (Freedman, Brandes, Peri, & Shalev, 1999; Fullerton et al., 2000; North, Smith & Spitznagel, 1997; O'Toole, Marshall, Schureck & Dobson, 1998; Resnick, Kilpatrick, Best, & Kramer, 1992; Shalev, Peri, Canetti & Schreiber, 1996). Thus, the increased positive affect regarding the abuse and academic film may, in part, be related to emotional reactivity given by the higher mood-state scores.

Another explanation for the affective outcome is that the heightened negative and positive affect represented an alexithymic reaction. In this respect, abused women did not know how to react to the films and thus reported high affect levels, regardless of the type of affect being expressed. Indeed, abused women reported higher levels of alexithymic characteristics than did non-abused women. Since alexithymic individuals have difficulties in understanding and expressing emotion, perhaps the emotional content of the film manipulation was not understood and thus their emotional reaction could not honestly and accurately be reported. However, for reasons that are mentioned below, it is not certain whether the alexithymia measure accurately identified alexithymic women in the present study.

A final possible explanation for the heightened positive affect reporting to the films is that these women were engaging in a form of coping, namely that of cognitive restructuring. While no significant differences in cognitive problem-solving (which

included cognitive restructuring) were found between abused and non-abused women, this does not mean that coping processes were not at work while watching the film. Indeed, coping and affect are inextricably linked, particularly in that coping arises during stressful encounters to transform initial appraisals and emotions (Folkman & Lazarus, 1988). Furthermore, because some forms of coping are associated with increases in positive affect and other forms of coping are associated with increases in negative affect, people may simultaneously experience a number of conflicting emotions (Folkman & Lazarus, 1988; Folkman & Moskowitz, 2000; Terwogt, Schene, & Harris, 1985). In addition, according to cognitive dissonance theory, in order for harmony to exist between an individual's emotions, behaviours, and cognitions, modifications must occur in one or more of the three domains, even if that implies a sacrifice of rationality (Festinger, 1957). Thus, a women who is undergoing abuse will reappraise the violent events, telling herself that "it's not that bad, it could be a lot worse", in order to cope with the violence. In this respect, after watching the abuse film, abused women may have told themselves that their situation is (or was) not as bad as that illustrated in the film and therefore felt better about their situation, as indicated by the high positive affective response (Aldwin, 1994). Hence, the film may have had less of an effect because abused women were restructuring the events portrayed in the film. In addition, the abused women may have been extending their cognitive restructuring coping to other stressors, including the academic stressor. Overall, these women were telling themselves; "the situation in the film is a lot worse than what I've gone through. I'm not that bad off and therefore feel pretty good".

The Moderating Effects of Psychological Factors on the Relationship Between Affective Reporting and Stress Exposure

It was hypothesized that high depressive and PTSD symptomatology and emotion-focused (e.g. emotional containment) coping styles would heighten negative affect and lower positive affect to film exposure. Also, it was predicted that high alexithymic women would show a blunted emotional response to stress exposure, given that the disorder is characterized by an inability to understand and express emotion. While the present investigation was concerned with the responses of abused women to the abuse film in particular, it was also thought that the same moderating effects would be found in non-abused women, and would similarly be observed with respect to the academic film, although to a lesser extent.

In line with predictions, non-abused women's affective responses were not greatly moderated by psychological factors. Significant effects were generally found for women who had experienced physical abuse. Though effects were expected for psychological abuse, there was not enough power, due to small sample size, to generate proper statistical analyses, let alone to find any significant results.

Depression and PTSD. With respect to PTSD and depressive symptomatology, physically abused women who scored low on the psychological moderators reported lower positive affect to the abuse film compared to those who scored high on the two moderating variables. Further, while non-significant, physically abused women who scored high on the psychological moderators also reported higher negative affect to the abuse film. In addition, specific to PTSD, abused women high on the IES reported significantly higher negative affect to the academic film. This pattern in responses, to some degree, was also found for positive affect in abused women regarding the academic film. Thus, patterns show that the high positive and negative affective responses in

abused women were heightened, at least to some extent, by the presence of PTSD and depressive symptomatology. While these conclusions are highly provisional given the non-significant findings, the trends that did surface should be considered further. While increased negative affect reporting was expected, it is curious that this relationship was also found for reports of positive affect.

As mentioned previously, mood disorders, such as PTSD and atypical depression, are characterized by generally heightened emotional reactions (American Psychiatric Association, 1994). PTSD is characterized by increased sensitivity to many types of stressors long after the trauma has subsided (Charney et al., 1993). Apart from autonomic hyper-reactivity, increased arousal in individuals with PTSD include behaviors such as hypervigilance, exaggerated startle response, and increased vulnerability to psychosocial stressors (Charney et al., 1993; Breslau & Davis, 1992). In the present study, abused women with high IES scores may have exhibited sensitization in affective reporting to both the abuse film and the academic film. However, as already indicated, instead of an increase in negative affect only, which was expected, the resulting arousal was general in nature, influencing both positive and negative affective responses. Similarly, atypical depression, typically characterized by emotional reactivity, may have caused similar augmented negative and positive affective responses.

Another possibility is that high positive affect reporting, especially among women who were high on depressive and PTSD symptomatology, was utilized as a buffer to prevent clinical levels of psychological illness. Gross and Munoz (1995) have reported that without compensatory experiences, chronic stressors may overtax regulatory functions of emotion and in turn result in clinical depression. Thus positive affect is

necessary to prevent the insidious rise in rumination, enhance emotional well-being, and build psychological resilience to clinical depression (Fredrickson & Joiner, 2002).

However, in considering these findings, it must be underscored that the women in the present study with high scores on the BDI and IES were not clinically depressed or suffering from PTSD.

Alexithymia. Alexithymia is a personality trait that is characterized by the inability to interpret and express emotion. It was expected that alexithymia would moderate affective responses to film exposure by blunting reported affect. This effect, however, was not found. While the exact nature of the moderating effects of alexithymia on physical abuse and affective reporting was not determined, the pattern of findings were nonetheless similar to that found for both depressive and PTSD symptomatology.

Contrary to the predicted blunting effect of alexithymia on emotional responses, the psychological moderator significantly increased positive affect to the abuse film in physically abused women. This pattern in positive affect to the abuse film was reversed for non-abused women, in which a non-significant blunting effect was found in high-alexithymic women. However, both abused and non-abused women who were high-alexithymic showed an increase in negative affect reporting to the abuse film. Once again, the mean difference between high and low alexithymics was seemingly greater between physically abused women compared to non-abused women. Similar patterns were found for the academic film, though a blunting effect was indicated for physically abused women in their positive affect.

One explanation for the overall heightened negative and positive affective response is that the present sample did not possess the characteristics to a sufficient

degree in order to be labeled alexithymic. It would be expected that a true alexithymic would either show a blunted affective response, or, since alexithymics are capable of responding in a stereotypical manner, would respond with very high negative affect and very low positive affect (i.e., describing affect that they “should” be feeling) (Lane et al., 1997). Another explanation regards the alexithymia construct itself. Questions have arisen regarding the distinctiveness of the alexithymia construct from psychological illnesses including depression and anxiety. Specifically, measures of alexithymia and depression are both distinct and overlapping owing to the high association between the two (Hintikka, Honkalampi, Lehtonen, & Viinamaki, 2001). Honkalampi et al. (2001) found that depressive scores increased and decreased proportionately with changes in the Twenty-item Toronto Alexithymia Scale in both control and major depressive outpatients. They further reported that almost all patients who had recovered from depression had also recovered from alexithymia, thus suggesting that alexithymia is a secondary phenomenon rather than a stable personality trait. Indeed, close examination of the Toronto Alexithymia Scale items leads one to consider that the test items are not completely distinct from test items that assess feelings of depression. For example, statements including “I often don’t know why I am angry”, “I have feelings that I can’t quite identify”, and “when I am upset, I don’t know if I am sad, frightened, or angry” may indicate an overwhelming sensation of depression which, although experienced by the individual, cannot be properly verbalized. In addition, statements such as “I am often confused about what emotions I am feeling”, “I have physical sensations that even doctors don’t understand”, and “I am often puzzled by sensations in my body” may be indicative of an anxiety disorder, including PTSD. Thus it may be that the alexithymia

measure tapped depressive- and anxiety-related responses and not necessarily alexithymia, which would explain the over-reactive affective nature of high-alexithymic women. Further, the strength of the Toronto Alexithymia Scale may have been less than dependable due to the low to moderate correlations among the three subscales, which has previously been documented and found to reflect the three-factor model of the personality construct (Bagby, Parker, & Taylor, 1994). Using total scores instead of subscores may have compromised the ability to properly detect alexithymic individuals. However, it was considered important to use total scores in the present investigation in order to remain consistent with past research. Indeed, the majority of research that have detected alexithymia in their study samples used total scores despite the relative independence of the three subscales (Friedlander et al., 1997; Henry et al., 1992; Parker et al., 1993).

Coping. When faced with a stressful situation, individuals engage in situational appraisal, implement a course of action, and regulate the resulting emotional response. The underlying mechanism behind this process is coping. Of the three coping indices that were evaluated in the present investigation, only emotional containment significantly moderated the relationship between abuse and affective responses to a stressor. It should be noted that this was the same coping index that was found to significantly differ between physically abused and non-physically abused women. Specifically, high emotional containment coping was related to high negative affect reporting in relation to the academic film in physically abused women. While non-significant, this pattern was also found for the abuse film. The relationship between emotional containment and negativity has been documented elsewhere (Gross & Levenson, 1997; Smyth, 1998; Stanton et al., 2000). It is also of interest to note that the same pattern of results were

found in regard to positive affect to both academic and abuse films. Thus, as found with depression and PTSD, suppressing one's emotions may heighten emotional reactivity to stressful events.

Although cognitive problem-solving was not found to moderate the relationship between abuse and affective reporting, this coping style did have a significant main effect on negative affective reporting to the academic film. Regardless of abuse, women high on cognitive problem-solving reported less negative affect to the academic film than those low on cognitive problem-solving. This is consistent with past findings (Clements & Sawhaney, 2000; Folkman & Lazarus, 1988). Problem-solving is regarded as an adaptive coping strategy that is associated with well-being and which is normally employed under conditions that are controllable and changeable (Lazarus & Folkman, 1984). Indeed, women who use problem-solving skills in an academic setting will work harder towards a defined goal, which will decrease stress and negativity, and lead to better performance. While non-significant, this pattern was reversed with respect to the abuse film, for which high cognitive problem-solvers reported more negative affect than low cognitive problem-solvers. This is interesting because an abusive relationship may at first be considered to be uncontrollable and unchangeable, leading to the belief that the use of problem-solving coping skills might be considered inappropriate at that time. Perhaps the use of problem-solving contradicts the woman's sense of low-self esteem, resulting in the attitude of "sure, I could do all these things, if I were only strong enough", which in turn may lead to increased negativity.

Of particular surprise was the lack of significant findings in regard to social support coping. Seeking social support is documented as a coping strategy that serves as

a buffer from illness (Lepore et al., 1993). However, social support seeking is a complex coping strategy in that it may be used as a way to vent existing feelings and feel loved by others (i.e. emotion-focused), and it may also be used as a means to obtain information regarding how to deal with the situation at hand (i.e. problem-focused) (Arias, Lyons, & Street, 1997). From this perspective, social support seeking may serve as both an emotion-focused and as a problem-focused coping strategy. Contrary to the buffer hypothesis, studies have found that social support may not always prove beneficial to an individual undergoing a stressful encounter (Feehan et al., 2001; Muller & Lemieux, 2000). This may relate to the two dichotomous functions that social support is comprised of. While social support as a problem-solving tool may elicit positive results in stressful situations, social support as an emotional catharsis may hinder positive outcomes. Due to the general way in which social support seeking was formulated in the present study, both social support as a problem-solving tool and social support as emotional expression was included to form a single index of social support seeking, and may thus have yielded confounded results.

From a theoretical point of view, social support may not be utilized as a coping strategy with respect to issues of abuse and issues of academic difficulties. Indeed, it has been documented that people seek less social support when the situation involves the individual's self-esteem, or embarrassment (Folkman et al., 1986). Both abuse and academic difficulties are issues that may create a sense of low self-esteem and, to some extent, shame. In a study by Ullman & Siegel (1993), it was found that women who were violated by an intimate were less likely to disclose the incident out of fear of being blamed or doubted (Ullman & Siegel, 1993; Rose, Campbell, & Kub, 2000). Thus, in the

context of partner abuse, it may similarly be more difficult to find effects for social support seeking.

Overall, the moderating effects of coping were difficult to establish for a number of reasons. First, the generalized indices did not allow for a pure measure of coping. Second, the revised Coping Strategies Scale was administered only once, before the two sessions that involved viewing the film. For future reference, the standardized coping measure should be administered after each manipulation in order to obtain an index of coping in response to the film. Although an open-ended question was administered to this effect, results were less efficient and subject to interpretation, which may have influenced the outcomes. However, even if standardized measures are properly administered, coping remains difficult to assess due to the nature of coping itself. In this respect, women who were no longer in their abusive relationship while watching the film may have responded to the film in a different manner, and used different coping strategies, than women who were still in their abusive relationship.

Limitations

The lack of significant findings may seem to have called into question the initial goals of the present investigation. However, it is believed that the clear trends that did surface deserve some recognition and further examination. There were a number of limitations to the present study that may have precluded more robust findings. First, there is no question that the small size of the present sample had a detrimental affect on the analyses of the data. Had a greater number of participants been used, there would likely have been more clear-cut and significant results. This is especially the case for cortisol analyses, in which cortisol samples were not properly obtained from some of the

participants, thus resulting in an even smaller sample for analysis. Second, the sample of abused women, although they had suffered abuse, were not severely abused, and thus any results based on their reporting may not be pertinent to women experiencing more severe partner abuse. Third, sensitization in abused women may be partly attributed to other stressors that they have undergone and not solely attributed to abuse in itself. Similarly, some non-abused women may have encountered other traumatic events that might have sensitized neuroendocrine and affective responses. Indeed, Matheson and Anisman (unpublished report) observed that about 56% of student participants had experienced an event that lead to feelings of shock or horror, and Breslau, Chilcoat, Kessler, and Davis (1999) reported that 61.4% in a community sample reported such events. Fourth, with respect to the film, affect ratings should have been taken before and after the film in order to properly assess affect endorsed specifically in response to the film. Further, a neutral stimulus should have been included for control purposes. Finally, future studies attempting to examine changes in cortisol should do so in the afternoon, when HPA reactivity may be greater.

Conclusion

The past two decades have seen important advances in our recognition, understanding, and awareness of partner abuse. The present exploratory study makes it clear that partner abuse of a physical or a psychological nature is associated with depression and anxiety, and in some individuals may favor the development of PTSD-like characteristics. The present findings also indicated that abused women show some enigmatic responses to reminder stimuli. While the processes governing such responses are not at all clear, it is apparent that these responses were entirely unexpected and might

responses were entirely unexpected and might relate to the existence of emotional pathology. To be sure, many of the conclusions derived in this report are highly speculative, owing largely to the small number of participants that agreed to participate. Thus, while many effects did not reach an acceptable level of significance, these trends should not be overlooked. Indeed, future studies are encouraged, especially in the area of stress hormones, in order to better understand the ramifications of perceived stressful stimuli. Stress hormones, such as cortisol, play an important role in mediating human stress responses and thus should be examined in various populations, including abused women, particularly in the context of PTSD and depressive mood states associated with abuse. Finally, the present investigation was also limited in terms of the temporal scope examined. Ultimately, it will be necessary to evaluate the more protracted effects of abusive relationships to determine recurrence of events, as well as the development of more severe pathologies.

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Appendices**APPENDIX A**

Informed Consent (September)

The purpose of an informed consent is to ensure that you understand the purpose of the study and the nature of your involvement. The informed consent has to provide sufficient information such that you have the opportunity to determine whether you wish to participate in the study.

Study Title: Predictors of Success Among First-Year Students: Influence of Psychological and Social Variables on Quality of Life and Academic Performance

Study Personnel: Dr. Hymie Anisman (Faculty Investigator, 520-2600 ext. 2699)
 Dr. Kim Matheson (Faculty Investigator, 520-2648)
 Dr. Zul Merali (Faculty Investigator, 562-5800 ext. 4848)
 Dr. Arun Ravindran (Faculty Investigator, 722-6521 ext. 6943)
 Dr. Beth Tannenbaum (PostDoctoral Investigator, 520-2600 ext. 2700)

If you have any ethical concerns about how this study please contact Dr. M. Sénéchal, Chair of Dept. of Psychology Ethics Committee, 520-2600, X1155

Purpose and Task Requirements: The purpose of this study is to assess how your individual personality characteristics along with your social environment and personal resources affect your quality of life and academic performance. We are asking you to fill out a number of questionnaires regarding your personal characteristics (such as how you feel about yourself, how you cope with things in your life), as well as about some of the things you might be stressed about (such as finances, leaving home). We will eventually be looking at how these factors relate to your success in your first year at Carleton. The questionnaire should take less than one hour to complete.

Potential Risk and Discomfort: There are no physical risks in this study. There may be some mild discomfort when thinking about various stressors in your life.

Anonymity/Confidentiality: The data collected in this study will be kept confidential. Because we will want to keep track of your answers in this questionnaire in relation to how you do in your first year, we will have to be able identify who you are on your questionnaire. However, we take special precautions to make sure that no-one else will be able to identify you and what your responses were. We will be doing this by putting a code on your questionnaire and on the final page you'll complete that asks your name and how we can contact you. This last page, as well as your informed consent form, will be separated from your questionnaire and kept in a separate and secured file by one of the research investigators who will keep this information confidential.

Right to Withdraw: Your participation in this study is entirely voluntary. At any point during the study you have the right to not complete certain questions or to withdraw with no penalty whatsoever.

I have read the above description of the study concerning how psychological and social factors may influence my quality of life and my academic performance. The data collected will be used in research publications and/or for teaching purposes. My signature indicates that I agree to participate in the study, and this in no way constitutes a waiver of my rights.

Full Name (please print): _____

Participant Signature: _____

Date: _____

Researcher Signature: _____

INFORMED CONSENT (November)

The purpose of an informed consent is to ensure that you understand the purpose of the study and the nature of your involvement. The informed consent has to provide sufficient information such that you have the opportunity to determine whether you wish to participate in the study.

Study Title: Women's relationships and quality of life

Study Personnel: Alla Skomorovsky (Researcher, 520-2600 ext 2683)
 Irina Goldenberg (Researcher, 520-2600 ext 2683)
 Alia Offinan (Researcher, 520-2600 ext.2683)
 Dr. Kim Matheson (Faculty Investigator, 520-2648)
 Dr. Hymie Anisman (Faculty Investigator, 520-2699)

If you have any ethical concerns about how this study please contact Dr. M. Sénéchal, Chair of Dept. of Psychology Ethics Committee, 520-2600, X1155

Purpose and Task Requirements: The purpose of this study is to assess how your relationship with your present partner impacts on your physical and psychological health, quality of life, and academic performance. We are asking you to fill out a number of questionnaires regarding your personal characteristics (such as how you feel about yourself, what you're like), as well as more detailed information about your relationship with your partner and other people. In addition, we will be measuring several hormones that are present in your saliva, which may also give us clues about your stress levels and general health. This study will involve 3 sessions, including today's. We will be collecting similar similar information in each session, although the first session asks for more detailed information and hence is longer (about 1 hour) than the 2nd (January) and 3rd (April) sessions (about 30 minutes each). All sessions will be arranged at a time that is mutually convenient for you and the researcher, and will be conducted on campus.

Potential Risk and Discomfort: There are no physical risks in this study. There may be some discomfort when thinking about your relationship and the effects on you.

Anonymity/Confidentiality: The data collected in this study will be kept confidential. Your informed consent form will be separated from your questionnaire and kept in a separate and secured file by one of the research investigators who will keep this information confidential. It will be associated with a code, and only this code will identify your questionnaire so that we can match up your responses in each of the four sessions.

Right to Withdraw: Your participation in this study is entirely voluntary. At any point during the study you have the right not to complete certain questions or to withdraw with no penalty whatsoever.

I have read the above description of the study concerning my intimate relationship and how it may influence my well-being. The data collected will be used in research publications and/or for teaching purposes. My signature indicates that I agree to participate in the study, and this in no way constitutes a waiver of my rights.

Full Name (please print): _____

Participant Signature: _____

Date: _____

Researcher Signature: _____

Date: _____

INFORMED CONSENT (January)

The purpose of an informed consent is to ensure that you understand the purpose of the study and the nature of your involvement. The informed consent has to provide sufficient information such that you have the opportunity to determine whether you wish to participate in the study.

Study Title: Neuroendocrine changes and opinions upon viewing stressful situations

Study Personnel: Alexandra Fiocco (Researcher, 520-2600 ext.2700)
 Alla Skomorovsky (Researcher, 520-2600 ext 2683)
 Irina Goldenberg (Researcher, 520-2600 ext 2683)
 Alia Offman (Researcher, 520-2600 ext.2683)
 Dr. Kim Matheson (Faculty Investigator, 520-2648)
 Dr. Hymie Anisman (Faculty Investigator, 520-2699)

If you have any ethical concerns about how this study please contact Dr. M. Sénéchal, Chair of Dept. of Psychology Ethics Committee, 520-2600, X1155

Purpose and Task Requirements: The purpose of this study is to assess how your relationship with your present partner impacts on your physical and psychological health, quality of life, and academic performance. In addition to the questionnaires that you have already agreed to complete, we are asking you to complete one additional questionnaire regarding your feelings about general issues. We will also ask you to view a brief film about stressful events experienced by a women (academic problems, relationship problems) following which we will ask you to respond to questions concerning your attitudes about the events in the film. In addition we will be measuring several hormones that are present in your saliva, which may also give us clues about your stress levels and general health. This portion of the study will involve 2 sessions, including today's. We will be collecting similar information in both session; this session and the 2nd (March) sessions will last about 1 hr each. All sessions will be arranged at a time that is mutually convenient for you and the researchers and will be conducted on campus.

Potential Risk and Discomfort: There are no physical risks in this study. There may be some discomfort when viewing the film and when thinking about your relationship and it's effects on you.

Anonymity/Confidentiality: The data collected in this study will be kept confidential. Your informed consent form will be separated from your questionnaire and kept in a separate and secured file by one of the research investigators who will keep this information confidential. It will be associated with a code, and only this code will identify your questionnaire so that we can match up your responses in each of the four sessions.

Right to Withdraw: Your participation in this study is entirely voluntary. At any point during the study you have the right not to complete certain questions or to withdraw with no penalty whatsoever.

I have read the above description of the study concerning my intimate relationship and how it may influence my well-being. The data collected will be used in research publications and/or for teaching purposes. My signature indicates that I agree to participate in the study, and this in no way constitutes a waiver of my rights.

Full Name (please print): _____

Participant Signature: _____

Date: _____

Researcher Signature: _____

Date: _____

APPENDIX B

Code number _____

Background Information

Sex: Female / Male (please circle one)

Age: _____

ACADEMIC EXPERIENCES AND SUPPORT

Are you a full-time _____ or part-time _____ student? (please check one)

How many courses are you taking this term? _____

What is your academic major (or most likely major if undecided)? _____

What was your average mark in your last grade of high school? _____

What was your best subject in your last grade of high school? _____ Your mark was? _____

What was your worst subject in your last grade of high school? _____ Your mark was? _____

What average do you think you will realistically achieve in your first year at Carleton? _____

What mark do you expect to get in your best course? _____

What mark do you expect to get in your worst course? _____

Are you involved in any student organizations, clubs or teams at Carleton University?

No _____ Yes _____ Planning on getting involved _____

Which, if any, student organizations, clubs, or teams do you belong to, or you plan to join?

Are you involved in any off-campus organizations or clubs?

No _____ Yes _____

If yes, please specify

Where do you currently live? (please check one)

- _____ Carleton University residence
- _____ Off campus housing shared with other student(s) from Carleton University
- _____ Off campus housing shared with other(s) who do not attend Carleton University
- _____ Off campus housing by myself
- _____ Off campus housing with a spouse
- _____ Off campus with family members (parents)
- _____ Other (please describe) _____

How long have you been living in Ottawa? _____ yrs _____ mths

What city and country does your parental family live in? _____

If your family is not in Ottawa, how often do you hope to visit with them over the academic year? (please check one)

- _____ every week
 _____ every month
 _____ on any long weekend or holiday period
 _____ at the end of each term
 _____ at the end of the school year (in April)
 _____ not at all

Since the beginning of the school year, how often have you been in contact with at least one of your family members (parent or sibling)?

In person (check one):

_____ Daily; _____ Every few days; _____ Once each week; _____ 1-2 times in total; _____ Not at all

On the phone (check one):

_____ Daily; _____ Every few days; _____ Once each week; _____ 1-2 times in total; _____ Not at all

On e-mail (check one):

_____ Daily; _____ Every few days; _____ Once each week; _____ 1-2 times in total; _____ Not at all

Wrote them a letter (check one):

_____ Daily; _____ Every few days; _____ Once each week; _____ 1-2 times in total; _____ Not at all

In general, how satisfied or dissatisfied are you with the amount of interaction you have had with your most supportive parent, in the past month?

-3	-2	-1	0	1	2	3
Completely	Moderately	Mildly	Neutral	Mildly	Moderately	Strongly
Dissatisfied	Dissatisfied	Dissatisfied		Satisfied	Satisfied	Satisfied

In general, how satisfied or dissatisfied are you with the quality of your relationship with this parent in the past month?

-3	-2	-1	0	1	2	3
Completely	Moderately	Mildly	Neutral	Mildly	Moderately	Strongly
Dissatisfied	Dissatisfied	Dissatisfied		Satisfied	Satisfied	Satisfied

Do you have any other family members who are attending Carleton University? No _____ Yes _____

What is your citizenship status?

_____ Canadian citizen

_____ Landed immigrant Since what year? _____ Country of origin _____

_____ Student visa Since what year? _____ Country of origin _____

What is your first language? _____

What is your ethnic/racial background? _____

What is your religion, if any? _____

Do you have any visible physical disability?

No _____ Yes _____ If so, please specify _____

Do you have any learning disability?

No _____ Yes _____ If so, please specify _____

What is your sexual orientation? (please check one)

_____ Prefer same-sex partners

_____ Prefer opposite-sex partners

_____ Have no preference for same or opposite sex partner

_____ Not sure what my orientation is

What is your relationship status? (please check the one that applies best to you)

_____ Single, and not seeing anyone

_____ Am going out with someone

_____ Am living with an intimate other

_____ Have recently broke up Please specify how weeks ago you broke up _____

How long have you been in your current relationship? _____ years OR _____ months

If you are currently involved with someone,

Does the person live in Ottawa?

No _____ Yes _____ If no, where does s/he live? _____

Does s/he attend Carleton University? No _____ Yes _____

Has this person ever been physically aggressive toward you?

0	1	2	3	4
Never	Only once	A few times	Several times	Frequently

Has this person ever ridiculed, insulted or humiliated you without reason?

0	1	2	3	4
Never	Only once	A few times	Several times	Frequently

Have you ever felt afraid of this person?

0	1	2	3	4
Never	Only once	A few times	Several times	Frequently

How satisfied or dissatisfied are you with the amount of interaction you have had with this person, in the past month?

-3	-2	-1	0	1	2	3
Completely	Moderately	Mildly	Neutral	Mildly	Moderately	Strongly
Dissatisfied	Dissatisfied	Dissatisfied		Satisfied	Satisfied	Satisfied

How satisfied or dissatisfied are you with the quality of your relationship with this person in the past month?

-3	-2	-1	0	1	2	3
Completely	Moderately	Mildly	Neutral	Mildly	Moderately	Strongly
Dissatisfied	Dissatisfied	Dissatisfied		Satisfied	Satisfied	Satisfied

Do you have children? No _____ Yes _____ If yes, how many? _____

Do you have any close friends who are attending Carleton University? No _____ Yes _____

Since the beginning of the school year, how often have you been in contact with the person you consider your closest friend?

In person (check one):

_____ Daily; _____ Every few days; _____ Once each week; _____ 1-2 times in total; _____ Not at all

On the phone (check one):

_____ Daily; _____ Every few days; _____ Once each week; _____ 1-2 times in total; _____ Not at all

On e-mail (check one):

_____ Daily; _____ Every few days; _____ Once each week; _____ 1-2 times in total; _____ Not at all

Wrote them a letter (check one):

_____ Daily; _____ Every few days; _____ Once each week; _____ 1-2 times in total; _____ Not at all

In general, how satisfied or dissatisfied are you with the amount of interaction you have had with this friend, in the past month?

-3	-2	-1	0	1	2	3
Completely	Moderately	Mildly	Neutral	Mildly	Moderately	Strongly
Dissatisfied	Dissatisfied	Dissatisfied		Satisfied	Satisfied	Satisfied

In general, how satisfied or dissatisfied are you with the quality of your relationship with this friend in the past month?

-3	-2	-1	0	1	2	3
Completely	Moderately	Mildly	Neutral	Mildly	Moderately	Strongly
Dissatisfied	Dissatisfied	Dissatisfied		Satisfied	Satisfied	Satisfied

EMPLOYMENT

Are you currently employed full-time _____ part-time _____ not at all _____

Are you currently employed at Carleton University? No _____ Yes _____

In order to pay for your education (tuition and living expenses), do you receive (please check all that apply)

_____ Scholarship money
 _____ Government grants
 _____ Student loan
 _____ Money from parents/spouse
 _____ nothing – I pay for my own expenses in full

HEALTH

Do you currently smoke? No _____ Yes _____ If so, how many/day? _____

Do you drink alcohol? No _____ Yes _____

If yes,

How much alcohol do you drink on average? _____ drinks per day

OR _____ drinks per week

Do you feel you are a normal drinker (by normal we mean drink less than or as much as most other people)? No _____ Yes _____

Do friends or relatives think you are a normal drinker? No _____ Yes _____

Have you ever lost friends because of your drinking? No _____ Yes _____

Do you drink before noon fairly often? No _____ Yes _____

Do you take or use any drugs? No _____ Yes _____

If yes, which drugs have you used in the past month? (check as many as apply)

_____ Marijuana/hash; How many times in the past month? _____

_____ Ecstasy; How many times in the past month? _____

_____ Cocaine; How many times in the past month? _____

_____ Heroin; How many times in the past month? _____

_____ Other; Please specify _____; How many times in the past month? _____

Are you currently being treated for any physical condition?

No _____ Yes _____ If yes, please specify _____

Are you on any of the following medications (please check all that apply):

_____ Birth control pill
_____ Anti-inflammatories (please specify) _____
_____ Anti-depressives (please specify) _____
_____ Anti-anxieties (please specify) _____
_____ Other Prescription drugs (please specify) _____

Have you ever been in therapy? (please check the one that best applies)

_____ No, I have never been in therapy
_____ Yes, but I am no longer
_____ Yes, and still am

If yes, how long ago were you in, or have you been in therapy?

Began _____ month/year and continued until _____ month/year

COPING STRATEGIES SCALE

The purpose of this questionnaire is to find out how people deal with their problems or the stresses in their lives. On the following pages are activities that you may have done. After each activity, please indicate whether you ordinarily use this way of dealing with problems or stresses in recent months.

Ordinarily, in recent months have you:

	YES	NO
1. talk with friends or relatives about the problem?	()	()
2. hid your feelings from others?	()	()
3. been very emotional compared to your usual self?	()	()
4. hated someone for causing your current problems?	()	()
5. taken steps to overcome the problem?	()	()
6. let one or more people know how irritated you are with them?	()	()
7. tried to get away from the things that remind you of your problems?	()	()
8. tried to do things which I typically enjoy?	()	()
9. expressed anger at your spouse or someone close to you?	()	()
10. drunk alcohol or used drugs to help reduce your feelings of tension or depression?	()	()
11. sought out information that would help you resolve your problems?	()	()
12. blamed others for the problem?	()	()
13. followed the advice of others to resolve you're your problems?	()	()
14. blamed yourself for your problems?	()	()

	YES	NO
15. decided not to let others see how you are feeling?	()	()
16. exercised?	()	()
17. gone for a drive?	()	()
18. found yourself often asking others for help?	()	()
19. gone over your problems in your mind over and over again?	()	()
20. asked others for help?	()	()
21. thought about the problem a lot?	()	()
22. become involved in recreational or pleasure activity?	()	()
23. read self-help books?	()	()
24. bought some new things for your self	()	()
25. decided that your problems have been caused by other people?	()	()
26. talked to a friend about your problems?	()	()
27. Worried about the problem a lot?	()	()
28. Tried to keep your mind off things that are upsetting you?	()	()
29. tried to distract yourself from your troubles?	()	()
30. avoid thinking about the problem?	()	()
31. complained to friends or relatives about your problem?	()	()
32. made plans to overcome your problems?	()	()
33. done something creative or artistic?	()	()

34. thought about ways to overcome your problems?	()	()
	YES	NO
35. remind yourself that that you have dealt with unpleasant situations before?	()	()
36. expressed anger that others were not making efforts to help you?	()	()
37. carefully weighed the pros and cons of different alternatives to solving your problem?	()	()
38. told others that your were depressed or emotionally upset?	()	()
39. thought a lot about who is responsible for the problem (besides myself)?	()	()
40. told yourself that other people have dealt with problems such as yours?	()	()
41. thought a lot about how you have brought your problems on yourself?	()	()
42. decided to wait and see how things turn out rather than making an effort to change them?	()	()
43. tried to look at your situation philosophically?	()	()
44. gone to movies?	()	()
45. decided that the current problems are a punishment for past actions?	()	()
46. masked your true feelings when with others?	()	()
47. sought sympathy from others?	()	()

48. gone shopping?	()	()
49. felt angry but held it in?	()	()
50. tried to focus on the good things on your life?	()	()
	YES	NO
51. asserted yourself and taken positive action on problems that are getting you down?	()	()
52. sought reassurance and moral support from others?	()	()
53. talked with people who have had problems similar to yours?	()	()
54. told jokes about your situation?	()	()
55. thought about your accomplishments, your strengths, and/or your abilities?	()	()
56. told yourself that some good can come out of your misfortune?	()	()
57. Taken steps to improve the situation?	()	()
58. resigned yourself to your problem?	()	()
59. thought about how your problems have been caused by other people?	()	()
60. let others tell you how to get better?	()	()
61. become more active than usual?	()	()
62. decided that there is a purpose behind your adversity?	()	()
63. avoided people that remind you of your problems?	()	()
64. read humorous articles, stories etc. to cheer yourself up?	()	()

65. decided that I can grow and learn through your suffering?	()	()
66. made humorous comments or wise cracks?	()	()
67. told yourself that other people have problems like your own?	()	()
68. looked for how I can learn something
out of your bad situation?	()	()
	YES	NO
69. avoided unpleasant situations?	()	()
70. let others see how bad you feel?	()	()
71. kept your feelings bottled up inside?	()	()
72. told yourself that it is normal to feel depressed
or anxious sometimes?	()	()
73. eaten more than usual?	()	()
74. tried to act as if you were not upset?	()	()
75. cried in the presence of someone else?	()	()
76. tried to figure out why you feel depressed?	()	()
77. tried to keep busy with things to do?	()	()
78. cried when by yourself?	()	()
79. decided to wait and see if your problem will resolve itself?	()	()
80. done something constructive?	()	()
81. gone out?	()	()
82. engaged in active recreation (tennis, skiing, etc)?	()	()

83. held in your feelings? () ()

84. told yourself that your problems will pass? () ()

85. immersed yourself in your work? () ()

86. tried to act as if you weren't
feeling bad? () ()

87. told yourself that your problems are only a small part of your life? () ()

APPENDIX C

TELEPHONE RECRUITMENT SCRIPT (November)
(INCLUDED IN STUDY #00-021)

Hi, my name is _____. I'm with a team of researchers at Carleton University. In your first year seminar, you completed a questionnaire for a study on students' first year experiences. We would like to ask you to take part in the next phase of this study that concerns the role of having an intimate relationship and the quality of that relationship and its effects on who you are, how you feel and do, and your quality of life. If you take part in this part of the study, you'll be eligible for a lottery to win your second year's tuition. Would you like to find you more about this?

If no, Thanks and good-bye.

If yes,

This part of the study will involves three session. On each of these occasions, you'll be asked to come in to complete several measures related to your relationships with other people, as well as characteristics about yourself and your circumstances. These sessions will take place now, in early January and in early April. The session we're trying to book now is the longest, and may take up to an hour. The remaining two sessions are short, taking about ½ hour. Your participation in this study makes you eligible for a lottery for your tuition for your second year at Carleton University. We will make every effort to arrange times for you to come in that fit with your schedule. Do you think you would be able to do this?

If no, thanks and good-bye.

If yes,

Arrange time.

TELEPHONE RECRUITMENT SCRIPT (January)

Hi, my name is _____. I'm with a team of researchers at Carleton University. Last fall, around November, you participated in an ongoing study on women's intimate relationships and how these relationships affect various aspects of women's lives (such as stress, academic performance, and coping styles). You may recall that we asked if you would be willing to complete two further sessions, in January and in March. At this point we would like to find out whether you might also be willing to participate in an extension of the January and March studies, which would be conducted at the same time.

This part of the study will involve you completing several measures related to your relationships with other people, as well as characteristics about yourself and your circumstances – just as you did in the last session. This next session differs from the first, however, in that when you come in we will be asking you to watch a video that describes a woman's experiences, and to provide us with your reaction to it. The session is relatively brief and will involve an additional half hour at each of the two sessions.

Recall, that if you participate in this session, you will be eligible for a lottery for your next year's tuition. As well, you'll be eligible for experimental credit for Psychology 102. In addition, to compensate for your time, your name will be put in a lottery for 100\$. However, unlike the tuition lottery, this lottery will have a much smaller pool of participants and there will be a new winner each week.

If yes,
Arrange time.

APPENDIX D

Conflict Tactics Scale.

The following statements describe how partners sometimes behave. For each statement, please indicate how often your partner has behaved this way by writing a number in the space to the right of each statement using the following rating scale:

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

1. I showed my partner I cared even though we disagreed. _____
2. My partner showed care for me even though we disagreed. _____
3. I explained my side of a disagreement to my partner. _____
4. My partner explained his or her side of a disagreement to me. _____
5. I insulted or swore at my partner. _____
6. My partner did this to me. _____
7. I threw something at my partner that could hurt. _____
8. My partner did this to me. _____
9. I twisted my partner's arm or hair. _____
10. My partner did this to me. _____
11. I had a sprain, bruise, or small cut because of a fight with my partner. _____
12. My partner had a sprain, bruise, or small cut because of a fight with me. _____
13. I showed respect for my partner's feelings about an issue. _____
14. My partner showed respect for my feelings about an issue. _____
15. I made my partner my partner have sex without a condom. _____
16. My partner did this to me. _____
17. I pushed or shoved my partner. _____
18. My partner did this to me. _____
19. I used force (like hitting, holding down, or using a weapon)
to make my partner have oral or anal sex. _____
20. My partner did this to me. _____
21. I used a knife or gun on my partner. _____

22. My partner did this to me. _____
23. I passed out from being hit on the head by my partner in a fight. _____
24. My partner passed out from being hit on the head in a fight with me. _____
25. I called my partner fat or ugly. _____
26. My partner called me fat or ugly. _____
27. I punched or hit my partner. _____
28. My partner did this to me. _____
29. I destroyed something belonging to my partner. _____
30. My partner did this to me. _____
31. I went to a doctor because of a fight with my partner. _____
32. My partner went to a doctor because of fight with me. _____
33. I choked my partner. _____
34. My partner did this to me. _____
35. I shouted or yelled at my partner. _____
36. My partner did this to me. _____
37. I slammed my partner against a wall. _____
38. My partner did this to me. _____
39. I said I was sure we could work out a problem. _____
40. My partner was sure we could work it out. _____
41. I needed to see a doctor because of a fight with my partner, but I didn't. _____
42. My partner needed to see a doctor because of a fight with me, but I didn't. _____
43. I beat up my partner. _____
44. My partner did this to me. _____
45. I grabbed my partner. _____
46. My partner did this to me. _____

47. I used force (like hitting, holding down, or using a weapon) to make my partner have sex. _____
48. My partner did this to me. _____
49. I stomped out of the room, house, or yard during the disagreement. _____
50. My partner did this to me. _____
51. I insisted on sex when my partner didn't want to (but didn't use physical force). _____
52. My partner did this to me. _____
53. I slapped my partner. _____
54. My partner did this to me. _____
55. I had a broken bone from a fight with my partner. _____
56. My partner had a broken bone from a fight with me. _____
57. I used threats to make my partner have oral or anal sex. _____
58. My partner did this to me. _____
59. I suggested a compromise to a disagreement. _____
60. My partner did this to me. _____
61. I burned or scalded my partner on purpose. _____
62. My partner did this to me. _____
63. I insisted my partner have oral or anal sex (but didn't use physical force). _____
64. My partner did this to me. _____
65. I accused my partner of being a lousy lover. _____
66. My partner accused me of this. _____
67. I did something to spite my partner. _____
68. My partner did this to me. _____
69. I threatened to hit or throw something at my partner. _____
70. My partner did this to me. _____
71. I felt physical pain that still hurt the next day because of a fight with my partner. _____

72. My partner still felt physical pain the next day because of a fight with me. _____
73. I kicked my partner. _____
74. My partner did this to me. _____
75. I used threats to make my partner have sex. _____
76. My partner did this to me. _____
77. I agreed to try a solution to a disagreement my partner suggested. _____
78. My partner agreed to try a solution I suggested. _____

APPENDIX E

RELATIONSHIP SCRIPT

Post-Script: The short film you are about to watch has been taken from a real life transcript between a young woman and a counsellor. For the purpose of confidentiality, the names of the two characters have been changed. The role of the young woman and the role of the counsellor are being played by actors.

D= counsellor

P= student

D: Hello Ms. Smith, my name is Dr. Andrews.

P: Hi, how are you?

D: Fine thanks, and how are you?

P: Oh...alright I suppose.

D: So what's on your mind...what do you want to talk about today?

P: Well...I've been having some worries about my relationship with my boyfriend lately.

D: What kind of worries?

P: Well...I worry that I'm too dependent on him...that I might be staying with him for the wrong reasons because I'm too scared of what it would be like without him...I really don't want to be alone.

D: What's he like?

P: He goes to school, like me, he works too.... He works a lot, actually.

D: where does he work?

P: He helps out with his dad's contracting company. He's kind of taking over there...his father is close to retirement, you know. He's not even sure if he's going to keep going to school. He's in industrial relations now, but he doesn't really see the point of staying if he's got a business to take over already.

D: What is he like with you?

P: He's alright, I suppose.

D: What is it that makes you worry...what is it that makes you think you're with him for the wrong reasons?

P: Well...I've been with him for so long...you know. I haven't really been with anyone else...I don't really know what else is out there. We've been together since high-school for God's sake.

D: How long is that?

P: Four years. (with smile) We met in the advance math class at St. Pat High....

D: Tell me about how it was when you met.

P: (looking to ground) He was so cute back then... He used to do real nice things for me... we used to go out a lot...go out to movies and to dinner.... everything was good then... But I don't know if I'm with him for the right reasons now.

D: What is it that makes you think you're with him for the wrong reasons? I mean...what are your reasons for not wanting to be with him?

P: Well...we just don't get along like we used to.

D: Can you give me any examples?

P: Yeah...like...well...he comes home so late these days that we really don't get to do much anymore. I know it's 'cause he has to work...but the work and the school is really making him impatient these days.

D: Impatient how?

P: I don't know...he's just testy. It's like everything I do pisses (excuse me) him off in some way. Everything has to be just the way he likes it or he gets angry... I have to stop studying when he wants to do stuff, I have to bring him things when he wants them....I don't even know how to tell him "no" anymore.

D: Have you tried lately?

P: No...I'm a little too scared to.

D: Scared? What makes you scared?

P: His temper. He really gets carried away some times.

D: Carried away, how? Is he verbally abusive towards you?

P: Yeah

D: What kinds of things does he say?

P: Well...when I don't do things the way he wants, or I don't keep the fridge stocked or something, he tells me he doesn't know how I'll ever be a descent mother if I can't do better than that. He calls me stupid sometimes when I ask him questions or ask him to do something I can't do. Like, just the other day, I wanted to tape a show but I couldn't figure out how to work the machine. First he laughed at me, then he started getting mad. It wasn't my fault, I just didn't know how to do it...but he started telling me that I was stupid and stuff and that I should be grateful he's around, 'cause I'd never make it without him.

D: I take it you guys live together.

P: Yeah...It's been about a year and a half now...He even embarrassed me at the movie theatre once 'cause he told me that I was getting fat and that I shouldn't have any popcorn. He said it real loud while we were standing in line. People around heard...and the worst part is that they looked at me just as funny as they looked at him. Like I was some idiot.

D: And you haven't tried telling him stop?

P: No...not any more.

D: But you used to?

P: Yeah...at first he used to listen...but later on he would just start arguing with me and would start getting angry with me. I just started shutting up 'cause I couldn't deal with it anymore. I have too much to deal with, you know...with school and work...I work at a video store weekends and some nights...I just can't handle the fighting anymore.

D: what made you decide to come to see me then if you thought that that was the best way to deal with it?

P: Well...I didn't really think that was the best way...It just worked.. for a while...but I didn't like it. I guess I just need someone to talk to. I don't want to tell my friends or talk to my mom or dad about it. I don't want them to look at me like... like those people in line at the theatre did. I just don't think they'll understand why I deal with it. Especially lately....'cause he's been getting worse lately.

D: Worse how?

P: He's been getting a little rough lately.

D: Physical?

P: Yeah [starts crying]

D: And that's what you can't tell your friends or your family?

P: Yes...I'm so embarrassed...I don't want them to think bad about me...I know their not going to understand...they don't know how hard it is to get out.

D: What do you think makes it hard.

P: He scares me...He always flies off the handle over little things...I can't imaging what he would do if I told him I was leaving for good.

D: Has he ever said that he would do anything if you did.

P: Sort of... well just that he would make me regret it. He didn't get...you know...specific, but he said it in a mean enough way to make me worry. But' that's not even all of it...But, you know, it's also hard 'cause... well, sometimes I'm just so scared of not having anyone...I mean...what if he's right...what if I'm just annoying to be with. Maybe he can't help it. Maybe it's my fault.

D: I don't think that's it. Many abused women feel that it their fault... You should never feel that it's your fault.

P: But he's always sorry after it happens. He's always so nice after. He just tells me that sometimes he can't help it 'cause I do things that make him so mad.

D: How bad does it get?

P: Well...it's never so bad that I have to see a doctor or go to the hospital or something. Just bruises and scrapes. Usually he just grabs me and shakes me or pushes me around [cries a little harder]...A couple of times he's hit me in the face. He slaps me...he doesn't punch me...but he slaps me pretty hard sometimes.

D: When did this part of it start...the physical aspect I mean.

P: I remember the first time was on my birthday, which was eight months ago. I wanted to go to my parent's house for dinner, but he doesn't like them...they don't really get along...and he didn't want to go. I wanted to go without him, but he never wants me to do things without him. He said that if I went, they were just going to make me talk about him and say bad things and tell me that he's not good enough and stuff...That was the night that he...you know...did more than yell.

D: I'm trying to get an idea of what really goes on between the two of you when he gets that way. Do you think you could tell me more about what happened next...if it's not too hard for you?

P: Well...first I tried to tell him that I was going anyway...he told me I wasn't and started pushing me back into the house. I should have shut up at that point, I should have known I was just gonna make it worse. I tried pushing him away from me and that's when he lost it. First he slapped me a couple of times...then he pushed me so hard I fell over. I told him I was going and he just kept saying "Oh no your not, oh no your not!" and started kicking me in the back and whacking the top of my head. Then he stormed off to the TV room and just left me there, crying on the floor. I could still hear him yelling at me while he watched TV. I cried so long. I eventually just picked myself off the floor and went to the bedroom. I cried myself to sleep that night. I hadn't even put my night-gown on, I just fell asleep with my close on. The next morning he went out and bought me fresh muffins for breakfast and told me that he was so sorry and that he would never do it again.

D: Did you believe him?

P: At first yeah, but he did it a couple more times and kept saying the same thing. Then he stopped saying it altogether. All he tells me now is that I shouldn't get him so mad...that he's under too much pressure...that all my folks and friends want to do is take me away from him...that he does it for my own good.

D: When was the last time he did it?

P: About three days ago. I still have some marks from it [shows him some marks].

D: Did you show this to anyone... a doctor perhaps?

P: No.. you're the first to see it... it doesn't look that bad now and it doesn't hurt so much anymore.

D: What started that?

P: I came home late. He got pissed and said that I was spending all my time with friends instead of him and that I didn't care about him anymore. I told him I was at the library, which is where I was, but he didn't believe me. Then we started yelling at each other...him calling me a liar...me calling him paranoid...then he started grabbing me and slapping me... (crying..)

D: You do realize that this is abuse and that he can be charged. Do you want to press charges Ms Smith?

P: I can't... he'll kill me if I do.... Help me please!

ACADEMIC SCRIPT

Post-Script: The short film you are about to watch has been taken from a real life transcript between a young woman and a counsellor. For the purpose of confidentiality, the names of the two characters have been changed. The role of the young woman and the role of the counsellor are being played by actors.

D= Dr. Andrew, counsellor

P= student

D: Hello Ms Smith, my name is Dr. Andrews.

P: Hi, how are you?

D: Fine, thanks, and you?

P: Oh...alright, I guess.

D: So, what's on your mind... what do you want to talk about today?

P: Well, I've been having some worries about my future...well, mostly about school.

D: Well, what's university life like?

P: Well, coming to university wasn't what I had expected I guess. I mean, I knew that it would take a lot of work, everyone knows that, but things just got a little too hard.

D: Is the material too difficult for you?

P: No...I don't know, but it isn't just the difficulty of the school work, it's my schedule, my classes... I mean, some of my classes are really demanding

D: Tell me about your classes.

P: Well, I'm taking five courses. I'm taking an ITV course that I have to tape every week. I've been so busy with my other courses that I've fallen behind in watching the tapes... I have about 4 tapes that I still have to watch, just to catch up. It's going to take forever to watch them all...

D: So, do you like your classes?

P: They're okay I guess. Well, I don't like my seminar course. I was forced to take it, it was the only one that wasn't full when I registered. It's so boring and there is so much work to do for it. The professor expects us to write a short paper, like every two weeks. On top of that we, we have a group project to do AND a final exam.

D: Well, it must be refreshing to be able to do a group project. That way you can spread the work among yourselves.

P: Well, to tell you the truth, I'm having problems with some of the group members. They just don't understand what's going on in my life, so they assume that I'm this big slacker. Laurie, one of the girls in the group told me that she would report me to the professor if I keep missing our group meetings. I'm going to get into so much trouble (worried expression)...it's because of what happened.

D: What happened?

P: Last week we were supposed to hand in a short summary of what had been done so far during the term. I forgot all about it. Since I didn't go to the meeting the night before and wasn't home most of the night, I didn't get to talk to the group until the next day. So I showed up to class with no summary. The whole group got penalized for my screw up... I feel horrible. (Pause) I was fine in the beginning of the semester, but then I started falling behind on the lectures... and those videos I was telling you about. That's one of

the main reasons why I had to stop going to my group meetings, I would go watch the videos in the audio-visual room instead. I thought that it would be more important to watch the tapes than to sit at those stupid meetings. But now that I messed up, they all hate me... (sigh) like I don't have enough problems.

D: What problems do you have?

P: I'm doing horrible in school... (getting upset) I'm failing... or just barely passing.

D: Tell me about it.

P: I failed one of my midterms and just passed the other four. I find these multiple-choice tests to be really vague. After the exam, I'm never sure whether I did bad or not... usually not. But others seem to do well, so I guess it's just me. I haven't been doing very well on my assignments and papers either, but at least I'm not failing them. There just doesn't seem to be enough hours in the day to get everything done. I mean just last week alone, I had two papers to write and a short quiz ...I totally bombed it. Don't get me wrong, I do my work and I always find the time to sit down and study, but I guess it just isn't enough.

D: Do you ever see your professors about your problems, or go to tutorials?

P: Two of my classes have tutorials, and the other three have office hours. The tutorials are never given at times that I can attend. They are always given during my class time, or work time. There are some tutorials on Fridays, but I work some Fridays at the cafeteria. I went to a couple of them though...

D: And, did they help?

P: No. I only got more confused. The way these tutorials work is that you go in with any questions you have about the material that was taught that week. I never have

questions... I never know what the right questions are. Besides, I'm afraid to ask questions, I'll just look dumb in front of everyone.

D: Well, you can always profit from listening to other student's questions, don't you think?

P: No. I thought that at first also, but you should have heard some of the questions that were being asked. They went way over my head and I only felt worse after the hour was over. I went about three times and each time was a pretty bad experience.

D: How was it such a bad experience?

P: (lump in throat) When you are the only person in a room who doesn't have a clue about what is going on, it doesn't feel very good. Actually, I found the whole thing exhausting. You just don't want to do anything for hours after coming out of one of those tutorials...I feel so stupid...

D: There is no reason to feel stupid. You are in university now. Not everyone gets this far.

P: Yeah, but I don't know how much longer I can do this for. I'm just so sick and tired of it all. Nothing is going right. I quit my job to focus on studying. So now, I have no job and I'm still not getting better. My family and I are fighting because I never have time to do my work there, so I end up with them yelling at me... and for what? I just keep getting crummy grades.

D: Hmmmmmm....

P: I try, I really do.... But there is just so much work to do. I have all this work I have to catch up on, not to mention that finals are in about two and a half weeks.

D: Perhaps you should create a study schedule that will plan out everything that you have to study. I can help you. You can allocate the time needed to each subject and start from there.

P: You make it sound so easy Dr. Andrew, but it's not that easy (choking sound in her throat). How do you expect me to sit down and write up this great study plan when I have no idea where to even begin... also, I can't just sit down and waist time writing up a schedule, I have so much reading to do! I've already screwed up half of the semester. At the end, it all adds up... it all adds up! (Begins to cry) How am I gonna get through this semester? There's no way that there is enough time to get everything done.

D: It's okay, let it out. Get it off your chest. Maybe you have too much on your plate. Can you drop any of the courses you are currently in? I know that the drop period was over a week ago, but is there anything that maybe you can hold off?

P: I can drop the course I had a quiz in.... (under her breath) and failed. It's a one year course, so I have until March to drop it.

D: Well, maybe that would be the best option for now. You can always take summer courses to catch up.

P: But, I'll just get behind. Also, that means that I'll waist my summer and have to pay extra to do another course. My parents are going to be so mad at me.... They'll never agree to pay for it.

D: Have you spoken to your parents about it?

P: No, I can't talk to them, they'll be so upset. I wouldn't be surprised if my dad tells me to quit and start working. He already complains about my tuition. If he finds out I'm failing, he'll be so angry.

D: Are you scared to tell them?

P: I'm ashamed to tell them (crying). I'm ashamed because I'm messing up my future. I wanted to go to grad school, like my older brother (under breath; they're so proud of him). But what grad school is even going to consider a person like me after they see my marks.... I don't know what to do. I feel so stupid!!!

D: You are under a lot of stress right now and probably are not getting enough sleep which is affecting your thoughts and maybe making it harder for you to concentrate on school.

P: How can I get enough sleep with all this work. (Bursts out again) I can't even get to sleep, even if I wanted to.

D: Why not?

P: I just get these thoughts running through my head and can't get to sleep. I tried sleeping pills, but those just made me groggy the next day – I had to miss my morning classes because of it. Sometimes I have nightmares about school and how I'm messing up my future and disappointing everyone... I'm sick and tired of it all. I just want it to end. All I do is study and I...I never have time for myself, you know? I 'm glad you're here to listen, but honestly, this situation is hopeless. Nobody can help me

APPENDIX F

Impact of Event Scale.

The following statements describe how people sometimes feel after a stressful life event. For each statement, please indicate how distressed or bothered you were by writing a number in the space to the right of each statement using the following rating scale:

Not at all	A little bit	Moderately	Quite a bit	Extremely
1	2	3	4	5

1. Any reminder brought back feelings about it. _____
2. I had troubles staying asleep. _____
3. Other things kept making me think about it. _____
4. I felt irritable and angry. _____
5. I avoided letting myself get upset when I thought about it or was reminded of it. _____
6. I thought about it when I didn't mean to. _____
7. I felt as it hadn't happened or wasn't real. _____
8. I stayed away from reminders about it. _____
9. Pictures about it popped into my mind. _____
10. I was jumpy and easily startled. _____
11. I tried not to think about it. _____
12. I was aware that I still had a lot of feelings about it, but I didn't deal with them. _____
13. My feelings about it were kind of numb. _____
14. I found myself acting or feeling like I was back at that time. _____
15. I had trouble falling asleep. _____
16. I had waves of strong feelings about it. _____
17. I tried to remove it from my memory. _____
18. I had trouble concentrating. _____
19. Reminders of it caused me to have physical reactions, such as sweating, trouble breathing, nausea, or a pounding heart. _____
20. I had dreams about it. _____
21. I felt watchful and on guard. _____
22. I tried not to talk about it. _____

BECK INVENTORY

On this questionnaire are groups of statements. Please read the entire group of statements of each category. Then pick out ONE statement in that group which best describes the way you feel. Check off the number beside the statement you have chosen.

1. ☐ 0 = I do not feel sad
☐ 1 = I feel sad or blue
☐ 2 = I am blue or sad all of the time and I can't snap out of it
☐ 3 = I am so sad or unhappy that I can't stand it
2. ☐ 0 = I am not particularly pessimistic or discouraged about the future
☐ 1 = I feel discouraged about the future
☐ 2 = I feel I have nothing to look forward to
☐ 3 = I feel that the future is hopeless and things cannot improve
3. ☐ 0 = I do not feel like a failure
☐ 1 = I feel I have failed more than the average person
☐ 2 = As I look back on my life, all I can see is a lot of failures
☐ 3 = I feel I am a complete failure as a person
4. ☐ 0 = I am not particularly dissatisfied
☐ 1 = I don't enjoy things the way I used to
☐ 2 = I don't get satisfaction out of anything anymore
☐ 3 = I feel as though I am very bad or worthless
5. ☐ 0 = I don't feel particularly guilty
☐ 1 = I feel bad or unworthy a good part of the time
☐ 2 = I feel quite guilty
☐ 3 = I feel as though I am very bad or worthless
6. ☐ 0 = I don't feel disappointed in myself
☐ 1 = I am disappointed in myself
☐ 2 = I am disgusted with myself
☐ 3 = I hate myself
7. ☐ 0 = I don't have thoughts of harming myself
☐ 1 = I feel I would be better off dead
☐ 2 = I have definite plans about committing suicide
☐ 3 = I would kill myself if I had the chance
8. ☐ 0 = I have not lost interest in other people
☐ 1 = I am less interested in other people than I used to be
☐ 2 = I have lost most of my interest in other people and I have little feeling for them

- ___ 3 = I have lost all my interest in other people and don't care about them at all
9. ___ 0 = I make decisions about as well as ever
___ 1 = I try to put off making decisions
___ 2 = I have great difficulty in making decisions
___ 3 = I can't make decisions at all anymore
10. ___ 0 = I don't feel I look any worse than I used to
___ 1 = I am worried that I am looking old or unattractive
___ 2 = I feel that there permanent changes in my appearance and they make me look unattractive
___ 3 = I feel that I am ugly or repulsive looking
11. ___ 0 = I can work about as well as before
___ 1 = It takes extra effort to get started at doing something
___ 2 = I have to push myself very hard to so anything
___ 3 = I can't so any work at all
12. ___ 0 = I don't get anymore tired than usual
___ 1 = I get tired more easily than I used to
___ 2 = I get tired from doing anything
___ 3 = I get too tired to do anything
13. ___ 0 = My appetite is no worse than usual
___ 1 = My appetite is not as good as it used to be
___ 2 = My appetite is much worse now
___ 3 = I have no appetite at all any more

TORONTO ALEXITHYMIA SCALE

Using the scale provided as a guide, indicate **HOW MUCH** you agree or disagree with each of the following statements by **CIRCLING THE CORRESPONDING NUMBER**. Give only **ONE** answer for each statement.

you need to line things up below

	Strongly Disagree 1	Moderately Disagree 2	Neither Disagree nor Agree 3	Moderately Agree 4	Strongly Agree 5
1. I am often confused about what emotion I am feeling.	1	2	3	4	5
2. It is difficult for me to find the right words for my feelings	1	2	3	4	5
3. I have physical sensations that even doctors don't understand.	1	2	3	4	5
4. I am able to describe my feelings easily.	1	2	3	4	5
5. I prefer to analyze problems rather than just describe them.	1	2	3	4	5
6. When I am upset, I don't know if I am sad, frightened, or angry.	1	2	3	4	5
7. I am often puzzled by sensations in my body.	1	2	3	4	5
8. I prefer to just let things happen rather than to understand why they turned out that way.	1	2	3	4	5
9. I have feelings that I can't quite identify.	1	2	3	4	5
10. Being in touch with emotions is essential.	1	2	3	4	5
11. I find it hard to describe how I feel about people.	1	2	3	4	5
12. People tell me to describe my feelings more.	1	2	3	4	5

	Strongly Disagree 1	Moderately Disagree 2	Neither Disagree nor Agree 3	Moderately Agree 4	Strongly Agree 5
13. I don't know what's going on inside me.	1	2	3	4	5
14. I often don't know why I am angry.	1	2	3	4	5
15. I prefer talking to people about their daily activities rather than their feelings.	1	2	3	4	5
16. I prefer to watch "light" entertainment shows rather than psychological dramas.	1	2	3	4	5
17. It is difficult for me to reveal my innermost feelings, even to close friends.	1	2	3	4	5
18. I can feel close to someone, even in moments of silence.	1	2	3	4	5
19. I find examination of my feelings useful in solving personal problems.	1	2	3	4	5
20. Looking for hidden meaning in movies or plays distracts me from their enjoyment.	1	2	3	4	5

PANAS

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate number in the space next to that word. Indicate to what extent you feel this way after having watched the film.

1	2	3	4	5
Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
_____ Interested				_____ Guilty
_____ Irritable				_____ Determined
_____ Distressed				_____ Scared
_____ Alert				_____ Attentive
_____ Excited				_____ Hostile
_____ Ashamed				_____ Jittery
_____ Upset				_____ Enthusiastic
_____ Inspired				_____ Active
_____ Strong				_____ Proud
_____ Nervous				_____ Afraid

OPEN-ENDED COPING QUESTION

After having watched the film, please answer the following question(s):

1. How would you cope in this situation? (i.e.; what would you do in this situation and how would you personally feel?)

APPENDIX G

CONTACTS

The following people are involved in the research project and may be contacted at any time if you have any further questions about the project, what it means, or concerns about how it was conducted:

Dr. K. Matheson, Faculty member, Department of Psychology, 520-2648
 Dr. H. Anisman, Faculty Member, Department of Psychology, 520-2699
 Alla Skomorovsky, Graduate researcher, Department of Psychology, 520-2600
 ext.2683
 Irina Goldenberg, Graduate researcher, Department of Psychology, 520-2600 ext.
 2683
 Alia Offman, Graduate researcher, Department of Psychology, 520-2600 ext.
 2683
 Alexandra Fiocco, Graduate researcher, Department of Psychology, 520-2600 ext
 2700

If you have any worries or concerns about your personal well-being, you can contact the following services:

Carleton University Health and Counseling Services: 520-6674

Ottawa Rape Crisis Centre. Counselors are available for anonymous crisis calls 24 hours/day: 520-2333

Sexual Assault Support Centre. Call 725-2160 to find out about support groups, and/or accompaniments to police, court, or hospital. Or 24 hour support line: 234-2266.

Community Resource Centre. Have you been psychologically or physically abused? For support and information, call 591-3686.

Debriefing

In this study, we have been interested in tracking the quality of women's relationships, and the effects of this on women's mental health, quality of life and academic functioning. While most women are in relationships that are not abusive, unfortunately abuse is all too common in intimate relationships. Male violence against women, or women battering is one of the greatest causes of injury, mental disorders and death among women (Goodman et al., 1993). The recent Commonwealth Fund survey demonstrated that more than 4 million women are abused by their male partners every year, with half of them suffering from serious injuries and 2,000-4,000 dying as a direct result of the abuse (Plichta, 1996). Battered women live in constant threat of repeated and sometimes severe violence. Not surprisingly, a high incidence of mental health problems exists among women experiencing abuse, including depression, anxiety disorders, cognitive dissociations, feelings of helplessness, fatigue, listlessness, self-imposed isolation, alcohol and drug abuse, disruption of interpersonal relationships, somatic complaints and suicide attempts (Astin & Foy, 1995; Astin & Lawrence, 1993; Browne, 1993; Weaver & Clum, 1995). There is evidence to suggest that this abuse is evident even at the point of women's early dating relationships. Indeed young women are regarded as being at greater risk for experiencing such violence than older women. About 5% of women under the age of 25 reported at least one incident of violence in their current relationship within the past 12 months (compared to 1% of women 45 and older) (Statistics Canada, 1999).

While numerous researchers have examined the prevalence of psychological problems among battered women, these estimates vary substantially from study to study (Golding, 1999). In part the problem stems from the fact that much of this research is conducted following prolonged episodes of severe abuse among women in shelters or who are seeking counseling due to their abuse. Therefore it is hard to identify where the problem started (e.g., are there early life experiences that make some women more vulnerable to abusive relationships), and what factors help women to deal with an abusive relationship in terms of maintaining their own psychological and physical health and well-being.

Therefore, this study examines the dating relationships of women to ascertain the frequency of abuse in their relationships, the nature of the abuse encountered, and the ramifications of this abuse in terms of women's functional (e.g., academic performance), psychological (e.g., developing depression, personality, or stress disorders) and physical well-being (e.g., physical health and symptoms). We also want to see if women in abusive relationships are more responsive to particular stimuli (i.e.; a film on abusive relationships versus a film on academic troubles) compared to women who are not in abusive relationships, and whether these women are able to express adequately their emotions. Furthermore, we want to assess to what extent women's past experiences, coping styles and social support may help them to deal with conflict and/or abuse their relationships.

While many who have participated in this study may not be in abusive relationships, some are. We will be examining the differences among women as a function of the nature of their intimate relationships, and the effects such relationships have on women over the course of the year. If you believe you may be in an abusive relationship, we have attached some numbers you may contact to get more information and/or help.