O, wad some Power the giftie gie us
To see oursel's as others see us!
It wad frae monie a blunder free us,
An' foolish notion
What airs in dress an' gait was lea' e us
An' ev'n Devotion

Robert Burns
COGNITIVE VULNERABILITIES TO DEPRESSION IN AN INTERPERSONAL AND STRESS GENERATION CONTEXT

by

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ABSTRACT

The etiology and onset of depression is a complicated and multifaceted problem which has long challenged researchers. As the complexities of the interactions between interpersonal and intrapersonal factors become better understood, models necessarily become more complex. The present study represents an attempt to further elucidate the complex transactional nature of depression symptomology by examining the cognitive personality vulnerabilities of sociotropy and autonomy; interpersonal problem behaviours; and life event stressors that may contribute to the onset and maintenance of a depressed mood state. In an effort to improve reporting regarding interpersonal behaviours, a questionnaire, the Inventory of Interpersonal Problems – Roommate Version was also developed. One hundred and fifty-two same sex roommate pairs completed questionnaire packages at the Time 1 data collection, and sixty participants also took part in the second data collection, which required participants to complete a second questionnaire package and to participate in an interview. The relationships between sociotropy, autonomy, interpersonal behaviours, and life event stress were examined using multiple regression, bivariate correlation, multivariate multiple regression, and qualitative thematic analysis. The omnibus Transactional Hypothesis (Zuroff, Mongrain, & Santor, 2004) could not be tested due to low statistical power; however, the composite hypotheses provided a number of relevant findings. Notably, interpersonal problems predicted both depressed mood cross-sectionally, and stressful events longitudinally. Additionally, interpersonal problem behaviours played a role in generating both achievement and interpersonal stress. Qualitative analysis revealed that both the type and experience of stress varied by interpersonal problem type. The
implications of these findings, as well as limitations of the study, and directions for future research are discussed.
DEDICATION

For mum. Wish you were here.
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Chapter 1: Introduction

Depression

Depression is one of the most prevalent of all the psychological disorders, with estimates indicating that approximately 20% of the population in the United States will experience a clinically significant episode of depression in their lifetime (Gotlib & Hammen, 2009; Kessler, Chiu, Demler, & Walters, 2005), and the rates appear to be rising. In Canada, one-year prevalence rates for major depression is at 5.5 – 13.2% for women and 3.4-7.5% for men (Beaudet, 1996; DeMarco, 2000; Statistics Canada, 2003). This means that in any calendar year, over one million Canadians suffer from clinical depression. Lifetime prevalence rates in Canada have been estimated at 12.6%, or 3.5 million Canadians (Pearson, Janz, & Ari, 2013). Similar figures were reported by Kessler and colleagues in the United States, where the 12-month prevalence rate for Major Depressive Disorder (MDD) was reported as 6.8%, and as 9.5% for any mood disorder (Kessler, et al., 2007). In their review of 20 studies conducted since 1980, Wittchen, Knauper, and Kessler (1994) concluded that the lifetime prevalence rate for depression was 15-18%, and that depression rates were on the rise in younger age groups (15-45 years of age). This trend has also been reported in many other developed countries (Kessler, et. al., 2010). Indeed, there does appear to be general agreement that the rates of depression are increasing drastically in younger populations, and that this observation is not simply accountable by younger respondents being more willing to report symptoms (Gotlib & Hammen, 2009; Weissman, Bland, Joyce, & Newman, 1993). Milder forms of depression, in that there are too few symptoms to meet diagnostic criteria for major
depressive episode, have even higher prevalence rates (Barrett, Barrett, Oxman, & Gerber, 1988). Indeed, periods of dysphoria and sad feelings are considered to be universal experiences falling within the normal spectrum of emotion (Clark & Beck, 1999).

The *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.) states that for the diagnosis of major depressive episode, at least five of the following symptoms must be present for at least two weeks: depressed mood or dysphoria, loss of interest or pleasure, insomnia or hypersomnia, weight or appetite loss/gain, fatigue or loss of energy, psychomotor agitation, reduced concentration or indecisiveness, sense of worthlessness or guilt, and thoughts of death or suicidal ideation (American Psychiatric Association, 2013). The symptoms of depressed mood (dysphoria) or loss of interest or pleasure must be present for diagnosis to be made. Dysphoria then, is an integral part of a clinically significant major depressive episode, but it is also part of the normal experience of human emotion.

There has been considerable debate in the literature regarding the conceptual nature of depression, as well as other psychological disorders. The categorical conceptualization argues that clinical depression is an entity unto itself, and is qualitatively different from milder, or subclinical forms of depression. In contrast, the dimensional viewpoint conceptualizes depression as a continuum of emotional experiences with normal depressive experiences anchoring one end of the spectrum and major depressive episode the other (Beck & Alford, 2009; Clark & Beck, 1999). The dimensional viewpoint has empirical support in the literature, where it is suggested that differences between dysphoria, subclinical depression, and a major depressive episode is
a matter of degree not kind (Flett, Vrendenburg, & Krames, 1997; Ruscio & Ruscio, 2000).

Whether a person is experiencing a clinical depressive episode or a milder form of dysphoria, there are enormous personal and social costs associated with depression. Indeed, the World Health Organization has recognized clinical depression as the disorder with the largest overall disease burden worldwide (Üstün, 2001; Üstün, Ayuso-Mateos, Chatterji, Mathers, & Murray, 2004), and a Canadian estimate of the direct and indirect costs associated with depression and general psychological distress was $14 billion (Stephens & Joubert, 2001). In the United States, a recent economic analysis of the cost of depression with respect to depression-related loss of productivity exceeded $36 billion (Kessler, et al., 2005), and this was thought to be an underestimation of the true cost. On a more personal level, the presence of depression, or even a few depressive symptoms, has been associated with significant reductions in physical and social functioning (Gotlib & Hammen, 1992), and the impact of the depressed person’s mood extends far beyond his or her own experience affecting spouses, children, friends, and employers (Gotlib & Hammen, 2009).

Lifetime prevalence rates for depression can vary enormously depending on how depression is defined and assessed. In the United States, estimates of major depression have ranged from as low as 6% (Weissman, Bruce, Leaf, Florio, & Holser, 1991) to as high as 25% (Lewinsohn, Rohde, Seeley, & Fischer, 1991). In the National Comorbidity Survey (NCS; Kessler et al., 1994) 15.8% of respondents to a nationally representative sample based on a structured clinical interview met criteria for major depression, with a further 10% meeting criteria for minor depression (i.e., two to four symptoms of major
depression) (Kessler, Zhao, Blazer, & Swartz, 1997). A replication of the National Comorbidity Survey (NCS-R) estimated lifetime prevalence to be 16.6% for major depression, and 20.8% for all mood disorders (Kessler, et al., 2005). Depressive symptoms and disorders are generally considered to be two or even three times more prevalent in women than men (Culbertson, 1997; Nolen-Hoeksema, 1990, Weissman & Olfson, 1995). Indeed, depression is one of the more common mental disorders diagnosed among women (Pearson, Janz, & Ali, 2013).

Clearly then, with depression in its clinical and milder forms bringing with it such enormous social and personal costs, continuing to work to better understand the nature of this disorder is of paramount importance. Certainly, depression is a highly recurrent disorder. Over 75% of persons with depression have more than one depressive episode (Boland & Keller, 2009), and often within two years of recovery. With an eye towards preventing the devastating effects of depression, the questions for researchers then become, what are the predisposing factors which contribute to the onset of depression in particular individuals, and why is it that recurrence and relapse rates are so high for this disorder?

Investigators have examined a broad array of factors that may contribute to the onset and recurrence of depression, including biological and genetic factors as well as psychological and environmental factors. It is the psychological and environmental factors that are of particular interest in the present study, specifically the impact of cognitive personality factors, life events, and interpersonal behaviours on depressed mood. First, are there personality vulnerabilities that may account for the differences in the onset and recurrence of depression? Second, what role do negative life events play?
Finally, as depression appears to be associated with so many negative personal and social impacts, do interpersonal factors in fact have a role in the onset or maintenance of a depressive episode?

**The role of stress in the onset and recurrence of depression.**

Stress as a causal factor in the onset of depression has a long and well-established research history (Hammen, 2005; Monroe & Depue, 1991). Indeed, many investigators have been impressed with the number of negative life events that precede a depressive episode in many people (Brown & Harris, 1989; Harder, et al., 1989). In 2003, Paykel comprehensively reviewed the literature available at that time on life events as precipitants of mood disorder and concluded that separations and losses from friends and family are strongly associated with depression. Brown and Harris (1978, 1986, 1989) demonstrated in a series of studies that depression often follows from one or more severely stressful events, usually involving some loss or exit from one’s social sphere. In their 1978 study in which they compared the incidence of stressful events in depressed and non-depressed samples, Brown and Harris concluded that stressful events played a causal role in approximately half of the cases of depression. Studies by Dohrenwend and colleagues (1986), Phifer and Murrell (1986), and Paykel (2003) found that depressed participants had experienced more negative life events involving loss, personal injury, and disruptions in their social network than did their non-depressed comparison groups. Mazure (1998) reviewed over 20 studies and concluded that the consistency and strength of the associations provides “compelling evidence for an association between adverse life experience and subsequent major depression” (p.291). Kessler (1997) came to a
comparable conclusion: “There is a consistently documented association between exposure to major stressful life events and subsequent onset of episodes of major depression” (p. 193). Finally, Hammen (2005) concluded that, "...the recent evidence based on sound methods of stress assessment and novel designs strongly suggests that most episodes of major depression are preceded by stressful life events..." (p. 295).

There is also evidence that chronic strains and minor events may have a role to play in the onset of depression, although this finding has not been as consistently reported in the literature. Indeed, the literature linking major depression and daily hassles has been characterized as smaller and less consistent (Harkness, 2008). In a classic study of the relationship between stress and depression, Billings, Cronkite, and Moos (1983) found that not only did persons with depression appear to experience a greater frequency of stressors prior to onset, but also experienced more chronic psychosocial strains. Similarly, Lewinsohn, Hoberman, and Rosenbaum (1988) found that major and minor life events as well as chronic strains were more common for members of their community sample who were depressed. Rojo-Moreno and colleagues (2002) found that both acute stressors and ongoing difficulties equally predicted depression. Studies have shown that individuals with depression score higher on measures of hassles than non-depressed individuals (e.g., Lovejoy & Steurerwald, 1997; Ravindran et al., 2002), and that hassles can predict recurrence of depression (Bockting et al., 2006). However, Flannery (1986) found only weak support for hassles in the prediction of depression, and according to Harkness (2008), no study has yet shown that hassles are a better predictor of depression, or that hassles may mediate the relationship between life events and depression. A major contributing factor to the equivocal findings is the difficulty in defining chronic strain...
and daily hassles especially with respect to degree and time. In addition, the research methodology has often used a checklist style of stress measurement which is much more open to misinterpretation and misrepresentation of stressful events. A review of the literature by Monroe and Simons (1991) concluded that chronic stressors and minor events are likely more predictive of an increase in depressive symptoms rather than a major depressive episode per se.

The association between life major or minor events, however, does not adequately explain the onset or recurrence of depressive episodes. Clearly, not everyone who experiences negative life events becomes depressed. Indeed, Kwon and Oei (1992) indicated that the effects of stress on depressive symptoms may differ depending on the characteristics of the individual. This suggests that there is considerable variability in individual responses to the stress people experience in their lives, indicating that not all individuals experience depressed mood when confronted with life events. Monroe and Hadjiyannakis (2002) have suggested that some of the inconsistencies in the research findings with respect to more minor stressors may be due to the insensitivity of the research designs, in that researchers have not always taken into account possible vulnerability factors. What then makes a person vulnerable or invulnerable to the effect of life event stress?

**The role of interpersonal factors in the onset and recurrence of depression.**

It is virtually undisputed that close, social relationships play an important role in the promotion and maintenance of good mental health, and it has been known for some time that depression is associated with significant impairments in interpersonal functioning (Gotlib & Hammen, 2002). For example, considerable research has
demonstrated that the marital quality of persons with depression is severely compromised (Davila, Stroud, & Starr, 2009). The interactions of couples in which one member is depressed, are characterized by more anger, hostility, and conflict than couples in which neither member is depressed (see Beach, Whisman, & O’Leary, 1994, for review), and it has been demonstrated that living with a spouse with depression has a causal relationship with increased psychopathology in partners (Mathews & Reus, 2001). The impact does not remain confined to the spousal relationship, but has a negative impact on any children living in the household as well. Indeed, the children of parents with depression have been found to develop episodes of depression and anxiety at rates significantly higher than those of matched controls. This is in large part due to their exposure to high levels of parental conflict and environmental distress (Hammen, Adrian, Gordon, Jaenicke, 1987; Hammen, 2009).

Some interpersonal theories of depression (Coyne, 1976; Lewinsohn, 1974; Segrin & Abramson, 1994) conceptualize the problematic interpersonal behaviours of individuals with depression as manifestations of the symptoms of depression, or as impairment of social skills. Indeed, there is substantial agreement that depression is associated with social skills deficits (Segrin, 2001). For example, Gotlib and Hammen (1992) concluded from their review of the literature that persons with depression have social skills deficits, in that they seem to speak more slowly and monotonously and maintain less eye contact. They also concluded that people with depression are less able to solve interpersonal problems than are non-depressed persons. The research demonstrating the predictive ability of social skills in depression has not been robust in its findings; however, one study in particular did find that social skill deficits were
predictive of depression onset in a stressful situation (Segrin & Flora, 2000). In this study, the authors found that social skill problems assessed during the final year of high school predicted depression in the freshman year of college. In this instance, the stressful experience was construed as moving a distance away from home. Similarly, the lack of assertiveness that is often a hallmark of depression, has predicted major depression, even beyond the variance accounted for by a past history of depression (Ball, Otto, Pollack, & Rosenbaum, 1994).

If a person is experiencing depression, the symptoms of that depression may also play a role in the negative interpersonal interactions. For example symptoms such as low energy, poor concentration, or anhedonia will likely interfere with positive interactions with others. Indeed, it has been well demonstrated that depressive behaviours can, and frequently do, elicit negative feelings of rejection in others – such as strangers, roommates, and spouses (Coyne, 1976; Gotlib & Hammen, 1992; Gurtman, 1986; Joiner & Timmons, 2009). In fact, merely being around a person with depression may elicit depressed feelings in others and result in a person without depression becoming less willing to interact with the person with depression (Howes, Hokanson, & Lowenstein, 1985; Strack & Coyne, 1983).

More recently it has been proposed that there are other vulnerabilities, quite separate from social skills or symptoms of depression, which may lie behind much of the interpersonal difficulty associated with depression. For example, Hammen (1991) demonstrated that women with unipolar depression experienced more negative interpersonal events both prior to and following an episode of depression when compared to women with bipolar disorder or women who were medically ill. Thus, problematic
interpersonal problems seemed to arise when the women were not symptomatic for depression. Further to this finding, Hammen (1991) also noted that the types of interpersonal events these women were experiencing were more likely to be events for which they were at least partially responsible (versus events which were beyond their control). Importantly, these “dependent” events significantly predicted the recurrence of a depressive episode. The fact that interpersonal difficulty occurs between episodes of depression suggests that there may be other factors at work than symptoms of depression alone. Indeed findings such as these have stimulated considerable interest in the investigation of interpersonal styles as risk factors for depression (Joiner & Timmons, 2009).

The role of personality in the onset and recurrence of depression.

As discussed previously, both the life event and the interpersonal literatures suggest that there may be vulnerabilities to depression which belie the simple causal relationships. And indeed, a number of theorists have posited a role for personality factors as a diathesis for depression.

Cognitive personality theories can provide a useful framework for a more detailed conceptualization of the interpersonal aspects of depression. Beck (1983, 1987) proposed two cognitive personality constructs which have been considered vulnerabilities to depression: sociotropy and autonomy. These personality constructs are considered to be vulnerabilities as they are “traits” which shape our perceptions and evaluations of our interpersonal relationships. Persons who are sociotropic are characterized as having a high need for love, acceptance, and approval from others, and fear abandonment and rejection from those they are close to. Sociotropic persons are concerned primarily with
their interpersonal relationships. By investing themselves in their relationships, they attempt to maintain a sense of well-being and self-esteem.

Autonomous individuals, in contrast, are characterized as having a high need for success and achievement, are highly concerned with independence and self-reliance, and have a marked lack of concern for others. Thus, autonomous individuals rely heavily on their personal achievements and their control over their environments to maintain their well-being and self-esteem. A person who is highly sociotropic or highly autonomous is expected to be vulnerable to depression when they are exposed to a congruent stressful event. In contrast, a person who is neither highly sociotropic or highly autonomous is seen to be less vulnerable to depression (Beck, 1983; Beck, Epstein, Harrison, & Emery, 1983; Clark & Beck, 1999).

The etiology of such personality vulnerabilities is believed to lie in early aversive childhood experiences (Gotlib & Hammen, 1992). It is believed that these experiences may have resulted in the development of self-schemas characterized by low self-worth, resulting in the development of expectations of interpersonal negativity and rejection. Such negative cognitive/affective structures may lead these individuals to develop chronically low self-esteem, persistent interpersonal problems, and become at higher risk for developing depression in later life. It is suggested that these vulnerable individuals depend largely on the love and attention of others to maintain their more fragile sense of self-esteem. When these extreme dependency needs are not met, the person responds by either increasing their demands for support (i.e., sociotropy) or by denying the need for interpersonal contact and developing overly perfectionistic tendencies (i.e., autonomy) (Gotlib & Hammen, 1992; Ingram, Miranda, & Segal, 2006).
Psychodynamic theorist Sidney Blatt (1974) also distinguished two subtypes of depression; anaclitic and introjective depression. Blatt stated that,

Anaclitic depression is characterized by feelings of helplessness, weakness, and depletion. There are intense fears of abandonment and desperate struggles to maintain direct physical contact with the need-gratifying object. Introjective depression, in contrast, is characterized by feelings of worthlessness, guilt, and a sense of having failed to live up to expectations and standards. There are intense fears of a loss of approval, recognition, and love from the object (Blatt, 1974, p.107).

Anaclitic depression therefore is characterized by excessive dependence, whereas introjective depression is characterized by excessive self-criticism. These dimensions of dependency and self-criticism are often used seemingly interchangeably in the literature with sociotropy and autonomy. The current work will use the terms sociotropy and autonomy, except when referring to specific studies or theoretical orientations.

As mentioned previously, there is increasing recognition that depression researchers need to move away from overly simplistic conceptualizations that all persons with particular personality vulnerabilities, or who experience stress, or who have difficult interpersonal environments will experience depressed mood. Rather, there is increasing understanding that the etiology of depression is a much more complex problem involving person - environment interactions. Thus, to conclude that negative life events, personality vulnerabilities or disturbed relationships are causes and/or consequences of depression is a simplified conceptualization that does not map onto the real-life experiences we call
depression. Instead the factors that previously were considered as causal elements are now better understood to be reciprocal, or transactional with the disorder.

In a 1995 review of the personality vulnerability literature in depression, Coyne and Whiffen criticized researchers for not considering the reciprocal nature of depression, and not considering the social context in which depression occurs. In response to this criticism, researchers have become more cognizant of contextual factors, and Zuroff, Mongrain, and Santor (2004) in direct response to the Coyne and Whiffen (1995) article, proposed a transactional model that is the basis of the present research (see Figure 1). This understanding of depression avoids an exclusive focus on either the social context or the individual, but instead recognizes a model in which the person and the situation have mutual influence on one another over time. Indeed, the complexity of the transactional model as it applies to the current research necessitates a review of three prominent theoretical models of depression as they are all featured in this conceptualization. The first is Beck’s cognitive model of depression, which includes the vulnerability concepts reviewed earlier. The second is Coyne’s interpersonal model of depression, and finally Hammen’s stress generation model, which will be briefly reviewed.

**Cognitive Theory of Depression**

The cognitive theory of depression as proposed by Beck (1963, 1967, 1987; Clark & Beck, 1999) is one of the most widely accepted of the current conceptualizations of depression. Beck’s cognitive theory of depression has been rigorously tested in literally hundreds of experimental studies, and has been well supported in the literature (for reviews, see Beck & Alford, 2009; Clark & Beck, 1999; Haaga, Dyck, & Ernst, 1991).
Consequently, the cognitive model of depression has played a prominent role in our understanding of depression.

![Diagram](image-url)

**Figure 1.** The transactional relationship between personality vulnerability, impaired interpersonal functioning, stressful events in the onset and maintenance of depression. Adapted from “Conceptualizing and Measuring Personality Vulnerability to Depression: Comment on Coyne and Whiffen (1995),” by D.C. Zuroff, M. Mongrain, and D.A. Santor, 2004, *Psychological Bulletin, 130*, p. 496. Copyright 2004 by the American Psychological Association.

The cognitive theory of depression states that “depression is characterized by the presence of absolute and pervasive negative self-referent thinking about the self, world, and future” (Clark & Beck, 1999). Thus, specific negative cognitive patterns characterized by the tendency to view the self, the world, and the future in a biased negative manner are considered integral to the depressive experience (i.e., the negative cognitive triad; Beck, Rush, Shaw, & Emery, 1979). The negative cognitive triad of thoughts about the self, the world, and the future is hypothesized to be automatic – that is, unintended and uncontrollable. The triad is seen as a fundamental feature of depression,
as it is present when a person is in a depressed state, and absent in a non-depressed state (Beck, 1987). The biased thinking is evident when depressed individuals consistently perceive themselves and their environment as negative, even when more positive explanations are available. It is suggested that these cognitions precede the depression, in that depressed mood arises from this continual negative appraisal of events.

Schemas are an important concept for the cognitive model of depression. The schema is an enduring internal representation of information based on our past experience, which in turn serves to organize new information in a way that shapes our attention to, and perception of that new information (Clark & Beck, 1999). Schemas are considered to be constant cognitive patterns that form the basis for the way individuals interpret their surroundings. Schemas can be dormant for periods of time, or activated by specific events. The schemas of a depressed person are thought to be biased in a negative and persistent way to create and maintain the depressive conceptualization of the self, the world, and the future (Scher, Segal, & Ingram, 2004).

A number of different types of schemas have been proposed, which are thought to correspond to the different functions of our biopsychosocial systems (Clark & Beck, 1999). The first of these are the cognitive-conceptual schemas, which are vital for the selection, storage, interpretation, and retrieval of information. The affective schemas are involved in the perception of our feeling states, whereas physiological schemas aid in the processing of stimuli from within our bodies. Behavioural schemas are involved in maintaining response patterns to stimuli, whether voluntary or involuntary, and may be simple reflex-type responses or more complex responses, which require a higher level of information processing and conscious awareness. Finally, the motivational schema is
responsible for the amount of responsiveness to a stimulus that a person exhibits. Again, some are very simple in that they are rooted in reflexive responses, while others are learned through socialization and are related to how directed we are in achieving our goals (Clark & Beck, 1999).

The concept of personality in Beck’s cognitive theory of depression is defined as a relatively stable organization of these schemas for guiding our adaptive or maladaptive responses to the demands and stresses of everyday life (Clark & Beck, 1999). The schematic structures of our personalities influence how we perceive and interact with our environment and those around us. As a result, our personality schemas affect our interpersonal relationships.

As reviewed earlier, in 1983, Beck expanded the cognitive theory of depression to include the concept of personality. It was postulated that particular personality types (i.e., sociotropy and autonomy) would be more susceptible to depression when vulnerable individuals experience a life event that matches their particular vulnerability. Thus, the cognitive theory adopts a diathesis-stress perspective for life events. Sociotropic individuals would be more susceptible to perceived disruptions in social resources and would therefore be at higher risk for depression following an event construed as a loss of social acceptance (Clark & Beck, 1999). In contrast, the autonomous person would be at higher risk for depression following a stressful event in which they perceived a loss of control or independence. Thus, according to Beck, the vulnerability to depression remains latent until activated by a congruent life stressor (Beck, 1987; Ingram, Miranda, & Segal, 2006). The empirical support for this orientation will be reviewed in a subsequent section.
Beck has also postulated on how these personality vulnerabilities affect one’s interpersonal behaviours. The sociotropic person would be more likely to rely on reassurance seeking, and help from others when coping with distress, and would avoid taking risks or isolating oneself. In contrast the autonomous person would likely utilize behavioural strategies that would reject help from others, and instead utilize strategies that rely on individual problem solving and goal directed behaviours (Clark & Beck, 1999).

Figure 2 demonstrates Beck’s (1983) cognitive theory of diathesis-stress within the larger transactional model (Zuroff, et al., 2004). The cognitive personality vulnerabilities of sociotropy and autonomy are thought to be the diathesis for congruent life stressors, resulting in depressed mood.

*Figure 2.* Beck’s (1983) cognitive model of diathesis-stress, represented with dashed lines within the Transactional Model by Zuroff et al. (2004).
The Interactional Model of Depression

In 1976, James Coyne proposed an interpersonal model of depression which suggested that although depression may have multiple causes, there is a contextual component of depression that may contribute to the maintenance of the disorder (Coyne, 1976a). Coyne argued that to better understand these maintenance factors, one should study the interaction patterns of the depressed person in their current environment. What was believed to be crucial to the model is the notion that depressed persons seek reassurance from others to alleviate their doubts about their own worth and whether others care for them. Although others will tend to provide reassurance, it seems to fall on deaf ears, because the depressed person will doubt its genuineness and attribute any reassurance to pity or a sense of obligation on the part of the other. The depressed person now faces a dilemma: He or she both needs and doubts reassurance from others. Therefore the behaviour pattern continues with the depressed person continuing to seek reassurance, and doubting its sincerity when it is given. This pattern is repetitive and resistant to change (Joiner, Coyne, & Blalock, 1999). As a result the depressed person’s significant others become frustrated and irritated, and become increasingly likely to reject the depressed individual -- and are more subject to distress themselves. This rejection has the effect of shrinking the depressed person’s interpersonal network, and confirming to the depressed person that they are not worthy and that others do not care. Such rejection completes the feedback loop of individuals who now find themselves in a “depressive spiral” (Coyne, 1976a, p.29).

Coyne later suggested that this model moves beyond the interpersonal to the interactional, as the interactional perspective not only addresses the interpersonal impact
of the depressed person, but also calls for an exploration of the reciprocal processes occurring between the depressed person and others (Joiner, et al., 1999). Almost by the very definition of his interactional model, Coyne was not so much interested in the factors contributing to the onset of the depressive episode, but instead the interpersonal factors that maintain it. Indeed, Coyne has chafed at attempts to link personality vulnerabilities such as sociotropy and autonomy to depression, when the social context of the depression is not taken into consideration (Coyne, 1999; Coyne & Whiffen, 1995). While the potential role of personality vulnerability is recognized, Coyne questions the assumption that such vulnerability factors are fixed and immutable. He suggests that ongoing life events and interpersonal interactions will continue to have an effect on shaping both the personality of the person and the risk of recurrence of depression (Coyne, 1999). The contribution of the interactional model within the larger Transactional Model (Zuroff, et al, 2004) is represented in Figure 3.

Figure 3. The interactional model of depression (represented with dashed lines) within the Transactional model by Zuroff and colleagues (2004).
Stress Generation Hypothesis

In comparison to the other two theories outlined here, Hammen’s (1991, 2006) stress generation hypothesis of depression is a relative newcomer. Hammen (1991) proposed a re-conceptualization of the diathesis-stress model (Gotlib & Hammen, 1992). This model proposes that personality can affect the occurrence of some stressful events, in that persons with a particular personality vulnerability appear to contribute to the types of stressors they experience. Thus, rather than conceptualizing the “stress” of diathesis-stress as a random event which may or may not be congruent with the personality vulnerability (diathesis), Hammen suggests that the cognitively vulnerable person is more likely to contribute to the generation of the stressor. This is not to suggest that persons (particularly women, as the research has mainly focused on women) have defective personalities that cause negative events. Although a depressed person’s symptoms and characteristics may contribute to event occurrence, it is also more likely that depressed persons find themselves in unstable social circumstances in which particular stressors may be more likely to occur. Indeed, it is well known that social inequalities place women at a higher risk for depression (Stoppard & McMullen, 2003). It is, therefore, a complex mix of personal characteristics and contextual factors that contribute to the occurrence of stressful events (Hammen, 1991).

Hammen’s (1991) study, which largely informed her formulation of the stress-generation hypothesis, compared the event occurrence over one year between women with unipolar depression, bipolar disorder, chronic medical illness, and women with no physical or psychological disorders. Interview assessments of stressful events found that not only were the women who were depressed more likely to be exposed to more stress
than any other group, but that they also experienced more stressors of an interpersonal nature, and for which they were at least partially responsible. Hammen (1991) concluded that depressed women by their symptoms, behaviours, characteristics, and social context generate stressful conditions primarily interpersonal in nature, and have the ability to contribute to the cycle of symptoms and stress that create chronic or intermittent depression. These findings have been consistently replicated by Hammen and her colleagues (e.g., Hammen, Burge, Daley, Davila, Paley, & Rudolph, 1995; Hammen & Brennan, 2002).

According to Hammen’s (1991, 2006) model, therefore, the stress-depression relationship is fluid and changeable, with stress serving as both an etiologic factor and a potential consequence of the disorder (Rudolph, Hammen, Burge, Lindberg, Herzberg, & Daley, 2000). Personality is a key component of her model, and Hammen hypothesizes that persons with personality vulnerabilities like sociotropy, autonomy (Nelson, Hammen, Daley, Burge, & Davila, 2001), or attachment cognitions (Hammen et al., 1995) play a role in contributing to their own life stress. She states that this is in contrast to conventional conceptualizations of diathesis-stress, in which the person with a particular vulnerability is at more risk for congruent life stressors, but the person is not seen as an agent in the exchange between vulnerability and stress (Nelson et al., 2001).

Traditionally, interpersonal factors were strongly emphasized in this model, as it was proposed that the majority of the stress generated was interpersonal in nature (Hammen, 1991). However, in an investigation by Nelson and colleagues (2001), it was noted that those with highly sociotropic or autonomous personality styles were more likely to create stress in the domain that they valued less. For example, a person high in
sociotropy experiencing stress in a relationship may become so focused on solving the perceived problem in that relationship that they neglect their work or educational goals. An alternative explanation may also be that the sociotropic person lacks the skills to be effective in work or school. Either way, the personality vulnerability of the individual appears to contribute to the problematic behaviours, which ultimately create more stress for that individual.

The onset of depression then in this model is understood as being related to a personality vulnerability that contributes particular behaviours, which in turn contribute to the generation of stress, and this stress culminates in depression. Unfortunately, this hypothesis has not yet been tested with respect to onset. There is better evidence with respect to recurrence, as this is a transactional process which, without intervention, is expected to continue throughout the lifespan.

The placement of the stress generation model within the Transactional Model proposed by Zuroff and colleagues (2004) may be noted in Figure 4.

*Figure 4. The stress generation model (represented with dashed lines) within the Transactional model by Zuroff and colleagues (2004).*
Empirical Status of the Theoretical Models

The congruency hypothesis.

Construct assessment. Based on the descriptions of sociotropy and autonomy outlined in Beck’s (1983) theory, Beck, Epstein, Harrison, and Emery (1983) developed the Sociotropy-Autonomy Scale (SAS) in an attempt to measure these two personality dimensions. Items for the scale were derived from the authors’ clinical experience, and patient self-report. The final version of the original measure contained 60 items (30 sociotropy; 30 autonomy) to which respondents indicated their agreement on a five-point Likert scale. Concerns regarding the psychometric properties of the SAS in general (Bieling, Beck, & Brown, 2004) and the SAS – Autonomy scale in particular, had been noted in the literature, which resulted in attempts to revise the scale (Clark & Beck, 1991; Clark, Steer, Beck, & Ross, 1995; Clark, Steer, Haslam, Beck, & Brown, 1997; Robins, Ladd, Welkowitz, Blaney, Diaz, & Kutcher, 1994). In a reanalysis of the SAS, Clark and colleagues (1995) determined that there was one scale for sociotropy and two scales for autonomy. These two new autonomy scales were labeled SAS Solitude and SAS Independence. Subsequent analyses revealed that it is in fact SAS Solitude that may represent more of a vulnerability to depression, while SAS Independence may be associated with measures of positive functioning and adjustment (Clark et al., 1995).

Rude and Burnham (1993) reanalyzed the SAS Sociotropy scale and found that it was composed of two factors. The first was termed "neediness" and was characterized by social anxiety and fear of disapproval. The second was termed "connectedness" and was characterized as valuing relationships and interpersonal sensitivity. Neediness was found
to be associated with increased symptoms of depression, while connectedness was not (Rude & Burnham, 1993).

Finally, in a re-analysis of the original Sociotropy-Autonomy Scale, Bieling, Beck, and Brown (2000) found a two-factor solution for sociotropy: Preference for Affiliation and Fear of Criticism and Rejection. This latter factor was found to have a stronger association with psychopathology than the first factor. A two-factor solution was also found for autonomy: Sensitivity to Others’ Control and Independent Goal Attainment. Independent Goal Attainment was found to have a negative correlation with psychopathology, and it was suggested that this factor might in fact represent a measure of resiliency. In contrast, the Sensitivity to Others’ Control factor did show a positive relationship with psychopathology. In sum, the findings presented suggest that the original SAS has an inconsistent factor structure, which may not be described as simply “Sociotropy” and “Autonomy.”

Prior to the development of the SAS, Blatt, D’Affliti, and Quinlan (1976) designed the Depressive Experiences Questionnaire (DEQ). The DEQ is comprised of 66 items describing experiences frequently reported by depressed individuals. This scale was an attempt to assess a wide variety of experiences related to depression, and was found to have three underlying factors: dependency; self-criticism, and efficacy. The dependency subscale included items assessing fears of abandonment, loneliness, and helplessness. The self-criticism scale tapped into feelings of guilt, hopelessness, insecurity, dissatisfaction with life, and a sense of having failed to live up to expectations. Finally, the efficacy scale has to do with one’s perception of one’s resources and capabilities.
Self-criticalness and dependency are seen as vulnerability factors for depression, and map onto Blatt's conceptualization of introjective and anaclitic types of depression.

The DEQ is one of the oldest and most established measures of these personality constructs, and as such, has been used a great deal in the depression literature. There has been some question regarding the stability of the dependency factor structure, and Blatt and colleagues reanalyzed the dependency scale of the DEQ, and revealed a two-factor structure of this construct (Blatt, Zohar, Quinlan, Zuroff, & Mongrain, 1995). These factors were thought to represent two levels of interpersonal relatedness, and suggested that the factors be labelled "dependence," which tapped into fears of separation, rejection, and loss in general, while the second factor, "relatedness," included items describing feelings of loss and loneliness with respect to a particular person. Dependence was linked with higher depression scores, while relatedness was associated with scores of higher well-being. Similarly, Rude and Burnham (1993) examined the DEQ's dependency subscale at the same time as they examined the factor structure of the SAS-Sociotropy scale. They found the same two-factor structures, neediness and connectedness, as they had found for the SAS-Sociotropy Scale, and found the same pattern of relationship with depression scores.

Bagby, Parker, Joffe, and Buis (1994) questioned the overall validity of the DEQ with respect to assessing anaclitic (dependent) and introjective (self-critical) depression subtypes. Their reconstruction of the measure reduced the number of items from 66 to 19, and the authors advocated the use of this shorter version due to the reported improved psychometric properties. Indeed, there has been some criticism of the DEQ in that the original version was not validated using clinical samples, and considerable questioning
with respect to whether the DEQ is measuring vulnerability to depression, or depression itself (e.g., Bagby et al., 1994; Coyne & Whiffen, 1995; Viglione, Clemmey, & Cammenzuli, 1990). Common concerns regarding both the SAS and the DEQ include the stability of the measures with respect to depressed mood, and the interrelatedness of the two constructs (Bagby et al., 2001; Coyne & Whiffen, 1995).

Robins and colleagues developed the Personal Style Inventory (PSI) in an attempt to rectify the shortcomings noted regarding the DEQ and the original SAS (Robins, Ladd, Welkowitz, Blaney, Diaz, & Kutcher, 1994). Items were drawn from the SAS and the DEQ, as well as from the Dysfunctional Attitudes Scale (DAS; Weissman & Beck, 1978) and the Inventory of Interpersonal Problems (Horowitz, Rosenberg, Baer, Ureno, Villasenor, 1988). These authors were well aware of many of the problems with the DEQ and the SAS, and attempted to avoid these problems during the stage of item development. For example, they did not include items that reflected symptoms of depression in an attempt to avoid possible confounds with the measurement of sociotropy and autonomy. Based on careful review of the theoretical writings on the vulnerability to depression by Beck (1983), Blatt and Shichman’s (1983), Bowlby (1977), and others’ (Bagby, et al., 2001) items were generated for three vulnerability domains in both sociotropy (i.e., concerns about what others think of self, excessive dependency, pleasing others) and autonomy (i.e., perfectionism/self-criticism, need for control, and defensive separation). Items were written carefully to ensure that they only represented one construct. The final scale consists of two 24-item subscales, one measuring sociotropy and the other measuring autonomy. Indeed, the initial psychometrics of the scale appeared promising (Alden & Bieling, 1996; Robins et al., 1994).
As with the others scales, however, concerns have been raised regarding PSI, specifically to do with the stability of the autonomy scale. Bagby and colleagues (1998) noted that the perfectionism-self criticism subscale (PESC; a subscale of the autonomy scale of the PSI) correlated with both sociotropy and autonomy. Hong, Malik, and Lee (2003) noted the same problem in a study involving 574 Korean undergraduates. Indeed, Shahar (2006) and Shahar, Soffer, and Gilboa-Schectman (2008) suggested that this perfectionism-self-critical factor should be considered its own dimension in the PSI alongside sociotropy and autonomy. There are methodological concerns with this suggestion, however, as this domain is only characterized by four items, which raises concerns regarding factor stability (Hong, et al., 2003). Indeed, Bagby and colleagues (1998) suggested that the four items of the PESC not be included in the scoring of autonomy until such time as these concerns are resolved.

In sum, there are three measures of sociotropy and autonomy that have been widely used in the literature. The SAS and the SAS-Revised evolved from Beck’s cognitive perspective of depression, whereas the DEQ developed from Blatt’s more psychodynamic perspective. The PSI was created in response to criticisms raised with respect to the original SAS and the DEQ, and appears to have the best psychometric properties of the published measures to date. Some research evidence has suggested that all of these measures appear to measure similar personality constructs (Alden & Bieling, 1996; Blaney & Kutcher, 1991).

**Diathesis-stress hypothesis.** An active area of research using the constructs of sociotropy and autonomy has been concerned with the investigation of the diathesis-stress hypothesis. More specifically, there has been an explicit attempt to link sociotropy
and autonomy, negative life events, and depression. Essentially, it is hypothesized that persons who are high in sociotropy are more likely to become depressed when they experience a congruent life event, such as a relationship loss or conflict, whereas persons high in autonomy will be more susceptible to depression in response to an event involving a loss of control or achievement (e.g., Clark, Beck, & Brown, 1992; Clark & Oates, 1995; Hammen, Ellicot, Gitlin, & Jamieson, 1989). Thus, it is not only the specific type of situation one encounters that is important, but also the interaction between the situation and the personality or cognitive vulnerability of the individual that is thought to contribute to the onset and/or recurrence of depression.

While it appears that there is a clear association between sociotropy, autonomy, and depression (Neitzel & Harris, 1990), the findings have been more equivocal with respect to the congruency hypothesis, especially with respect to autonomy (Coyne & Whiffen, 1995). Indeed, Hammen (2005) states that research has generally found greater support for the congruency hypothesis between sociotropy and interpersonal events, whereas the relationship between autonomy and achievement events has been less supported. However, some of this ambiguity may be related to methodological rather than theoretical concerns. A better understanding of sociotropy and autonomy using prospective versus cross-sectional designs, and life event interviews instead of checklists, has demonstrated more consistent results for the congruency hypothesis.

In cross-sectional designs, the most common finding is that sociotropy demonstrates a significant interaction with negative interpersonal events in the prediction of elevated depression scores; however, autonomy and negative achievement events show no such effect (Bartelstone & Trull, 1995; Clark, Beck, & Brown, 1992; Robins & Block,
In contrast, Clark and Oates (1995) found support only for the autonomy dimension. These authors examined undergraduate students and found that there was a significant interaction between solitude (a component of autonomy on the revised Sociotropy-Autonomy scale), and negative autonomy-related events in predicting depression.

In an experimental study by Allen, Horne, and Trinder (1996), 100 undergraduate students completed the PSI and were asked to imagine a series of neutral, interpersonal rejection, and achievement failure scenarios. Self-ratings of mood and physiological arousal were obtained in response to each of the scenarios. Regression analyses revealed that PSI sociotropy predicted greater subjective distress to the rejection scenarios, and to a lesser extent, the failure scenarios. In addition, higher sociotropy scores were a significant predictor of electromyograph (i.e., EMG) responses in the social rejection scenario. PSI autonomy was not a significant predictor of either subjective or physiological response to any scenario. These findings support the congruency hypothesis for sociotropy and negative interpersonal events, but not for autonomy and negative achievement events. However, prospective designs could provide a more stringent test of this hypothesis.

In a cross-sectional survey-based study on college students, Frewen and Dozois (2006a) reported that PSI-Sociotropy was found to be correlated with self-worth impact ratings for both real and imagined achievement and social negative life events. These authors examined the three subscales of PSI-Autonomy individually: They noted that the Perfectionism/Self-criticism and Need for Control sub-factors were also correlated with self-worth impact ratings for achievement and social negative life events. These authors
concluded that their findings provide support for the congruency hypothesis in that personality-congruent life events impact on feelings of achievement or social self-worth. In an extension of this study, Frewen and Dozois (2006b), examined whether interactions of PSI-Sociotropy and the three subscales of PSI-Autonomy with congruent life event stress could predict increases in depression scores in both retrospective and prospective designs. These authors found that the Sociotropy, Need for Control, and Perfectionism/Self-criticism subscales interacted with participant's experiences of personality congruent life events to predict increases in BDI-II scores.

Hammen, Marks, Mayol, and deMayo (1985) conducted one of the earliest prospective studies to investigate the congruency hypothesis with respect to the onset of depression. These researchers followed 94 undergraduate students over a 4-month period. Depression and life events were measured using interviews and the Life Experiences Survey (LES). Personality vulnerability was determined by classifying individuals into high dependency, high self-critical, high in both, or low in both. Prior to the time 2 assessments of depression and life events, students were asked to recall life events that made them feel bad, good, helpless, or critical. The student responses were then categorized into interpersonal, achievement, or other content by independent raters. Forty-six students were classified as having a dependent-oriented (sociotropic) personality and 32 students were categorized as having a self-critical (autonomous) personality. Results indicated that there were higher levels of depression among students characterized as dependent and who encountered negative social events, compared to dependent participants who experienced negative achievement events. As predicted, there was a strong personality/event congruency.
Robins, Hayes, Block, Kramer, and Villena (1995) administered the SAS, the Beck Depression Inventory (BDI) and the LES to 164 undergraduate students who had scored higher than 14 on the BDI in a prior screening. The questionnaire packages were administered at a one-month interval. Analyses revealed that both sociotropy and autonomy interacted significantly with negative interpersonal and achievement events in the prediction of depression scores at time 2. However, these personality-life event interactions were non-specific, which is contrary to the congruence hypothesis.

In a prospective study by Clark, Purdon, and Beck (1997), 179 students were tested over a three-month period and completed an extended version of the SAS, the LEI (Student Version), and the BDI. Results revealed that sociotropy significantly interacted with negative interpersonal but not negative achievement events in predicting an increase in depression scores. Solitude, a subscale of autonomy, significantly interacted with negative achievement events. Independence, the other subscale of autonomy, did not show a significant interaction with either life event scale. Further descriptive analysis revealed that there was more support for sociotropy and negative interpersonal events in the prediction of depression than for Solitude and negative achievement events.

Raghavan, Le, and Berenbaum (2002), in their study of the impact of recently moving to the United States for the female spouses of 39 international students, found support for the congruency hypothesis. These researchers conducted comprehensive interviews of stress, and found that sociotropy and interpersonal stressors predicted dysphoria, whereas the match between autonomy and achievement stressors predicted hostility. These authors concluded that when faced with congruent stressors, sociotropic women become “sad” whereas autonomous individuals become “mad.” Thus mixed
support for the congruency hypothesis for depression was found in this study; however, the authors strongly advised replication as they had used an abbreviated measure of sociotropy and autonomy.

As noted earlier, depression is a highly recurrent disorder. Over 75% of depressed patients have more than one depressive episode, and relapse often occurs within 2 years of recovery from the initial episode (Boland & Keller, 2009). This high recurrence rate in depression suggests that there are specific factors that may contribute to a person’s risk for developing repeated episodes (Gotlib & Hammen, 2009). One such risk factor may be the personality vulnerabilities of sociotropy and autonomy, and a number of authors have attempted to elucidate this point.

For example, Francis-Raniere, Alloy, and Abramson (2006), used a prospective design to examine the congruency hypothesis in individuals with bipolar disorder. They found that a self-critical style (subset of autonomy) interacted with congruent positive and negative life events in the prediction of hypomanic and depressive episodes, respectively. Perhaps surprisingly, a more sociotropic, or attachment oriented personality appeared to buffer the effect of congruent negative life effects on depression.

A prospective study by Hammen, Ellicott, Gitlin, and Jamison (1989) classified 22 clinically depressed and 25 bipolar depressed patients into autonomous and dependent/sociotropic categories based on the Sociotropy-Autonomy Scale (SAS). Patients were interviewed regarding life event stress and depression symptoms every three months for two years. These authors found clear support for the congruency hypothesis for both individuals high in sociotropy or autonomy in the unipolar depression group. That is, retrospective examination of the life event-symptom relationship revealed
that persons with depression who were classified as sociotropic were more likely to have experienced a negative interpersonal life event (with significantly greater elevations in depression symptomatology than the sociotropic-achievement comparison), and the autonomous group was more likely to have a negative achievement stressor (again, with significantly greater depression than the autonomous-interpersonal comparison) in the time period examined. The bipolar group did not demonstrate such a pattern.

In a related study, Hammen, Ellicott, and Gitlin (1989) reported on a two-year follow-up of 27 patients with unipolar depression. Only the patients who demonstrated an onset of depressive symptoms over the follow-up period were included in the final analysis (n=18). Hierarchial regression analyses in which depression was the dependent variable revealed that the SAS-Autonomy and negative achievement life event interaction was significant. SAS-Sociotropy and negative interpersonal events did not significantly predict depressive symptoms.

A more recent study by Voyer and Cappeliez (2002) tested the congruency hypothesis in older adults for the prediction of relapse in depression. Older patients were followed for 6 months after remission from a depressive episode. Cognitive vulnerability was measured using the DAS, and life events were assessed in a semi-structured interview format. Life events were rated as interpersonal or autonomous in nature by independent raters; however, the subjective impact of these events on the patients’ social and autonomous functioning was also assessed. Analyses supported the congruency hypothesis in the prediction of relapse, but only when subjective accounts were taken into consideration. These authors suggest that it is important to consider how the person views the impact of the stressful life events when conducting research of this nature.
Perhaps the most compelling research to support the vulnerability hypothesis for both the onset and recurrence of depression has emerged from the Temple-Wisconsin Cognitive Vulnerability to Depression (CVD) project (Alloy, Abramson, Safford, & Gibb, 2006). The CVD is a "behavioural high risk design" involving the study of individuals hypothesized to be at high risk for depression based on psychological vulnerabilities. In this project, first-year university students who were non-depressed and had no other Axis I diagnosis were followed every 6 weeks for 2 years and then every 4 months for an additional 3 years with self-report and structured interview assessments of stressful life-events, cognitions, and symptoms and diagnosable episodes of psychopathology. Cognitive vulnerability was assessed using the DAS and the Cognitive Style Questionnaire (CSQ) – two measures based on the leading cognitive theories of depression – Beck’s cognitive theory (DAS) and hopelessness theory (CSQ; Abramson, Metalsky, & Alloy, 1989). Consistent with the cognitive vulnerability hypothesis, participants who had no prior history of depression and had been classified as high risk at the outset of the project based on their DAS and CSQ scores were significantly more likely to develop a depressive disorder at the two-and-a-half year follow-up than those considered low risk. With respect to recurrence, those participants with a past history of depression and considered to be at high risk based on their cognitive vulnerability profile were significantly more likely to have developed a depressive disorder at follow-up than were their previously depressed-low risk counterparts. These results were the first to emerge that provided a clear link between cognitive vulnerability and clinically significant depression for both onset and recurrence (Abramson & Alloy, 2006; Alloy, Abramson, Whitehouse, Hogan, Tashman, Steinberg, et al., 1999).
Data analysed from the CVD with respect to possible interactions between types of stress and types of vulnerabilities have been less clear with respect to their findings and implications (Alloy et al., 2006). However, these authors admit that relatively little analysis has been conducted to date with the CVD data with respect to these questions. That said, Alloy and colleagues (2006) summarized the few studies investigating stress and cognitive vulnerability and concluded that while the interaction of a particular type of stressor (e.g., loss, danger) with cognitive vulnerabilities did not reliably predict depression, the number of stressors were predictive of depression in those who were cognitively vulnerable. The interaction of sociotropy and autonomy as measured by the DAS with type of stress has not yet been examined with the CVD data; however, it was noted that cognitively vulnerable (i.e., high risk) participants were more likely to have greater levels of sociotropy than low risk participants (Abramson, Alloy, & Hogan, 1997).

While the Cognitive Vulnerability to Depression project provides strong support for the cognitive diathesis-stress hypothesis with respect to onset and relapse of depression in general, the evidence for the congruency hypothesis is, at this time, not as solid. The reasons for this are not clear, but methodological concerns should be considered. Cross-sectional designs found more support for sociotropy than autonomy in general, and yet, Clark and Oates (1995) found more favourable results for autonomy than for sociotropy. In prospective studies, Clark et al. (1997) found more evidence for the congruency hypothesis for sociotropy than autonomy. Hammen et al. (1985) found strong support for both sociotropy and autonomy, while Robins et al. (1995) provided support for the cognitive diathesis-stress hypothesis, but not for congruency. These
studies provide limited support for the idea that personality vulnerability may play a role in depression onset. As suggested by Coyne and Whiffen (1995), insensitivity of the questionnaire format measuring life events may be part of this problem. Indeed, it is interesting to note that of the studies reviewed, the methodology that involved an interview measure of life event stress (i.e., Hammen et al., 1985) found the greatest support for the congruency hypothesis.

**The interactional model of depression.**

The concept of an interactional model of depression began with Coyne’s interpersonal model (i.e. the “downward spiral”) and later evolved to include intrapersonal factors such as personality (Zuroff, et al., 2004).

**Coyne’s interpersonal model of depression.**

Coyne’s original interpersonal model has proven to be somewhat perplexing for researchers as it involves a progression of events that can be difficult to capture using standard experimental methodologies. Thus researchers of the model have broken the complex interaction of the "downward spiral" into three stages, and research has proceeded into the investigation of these stages: 1) reassurance seeking; 2) emotional contagion effect; and ultimately, 3) rejection. Most of the research has been conducted within one of these three categories, and each will be examined in turn following a review of Coyne's (1976b) original study.

In Coyne's (1976b) benchmark study, depressed female outpatients, non-depressed outpatients, and community volunteers were recruited to speak to female undergraduates on the telephone. Both targets and participants were told that the experiment was a study of the acquaintance process and that they would be conversing
for twenty minutes. Participants were told that they could discuss anything they wished as long as they maintained anonymity. Participant responses to the conversation were measured in three areas: induction of negative mood, evaluations on bipolar adjectives (e.g., good-bad), and willingness to engage in future interactions. Participants reported being more hostile, angry, and depressed after speaking to the patients with depression, and evaluated the patients with depression more harshly than the community volunteers. In addition, participants indicated that they would be less willing to engage in future activities (such as asking for advice, or sitting next to the person on a bus trip) with the person with depression. This study provided strong results for the interpersonal model.

Since this original study, there has been a great deal of work regarding the investigation of Coyne’s interactional model conducted in laboratory settings with strangers. These studies were largely focused on the rejection component of Coyne's model. Such research usually involves having confederates acting as if they are depressed interacting with participants who are non-depressed, and then assessing the reaction of the participants to the confederate. Some have criticized this research model as being too simplistic in nature to capture the complexities of human interactions (e.g., Doerfler & Chaplin, 1985); however, Coyne (1985) refuted this criticism by stating that such a paradigm does not suffer the biases of a long-term relationship history, and in fact may better capture the nuances of a fledgling relationship. Despite Coyne’s (1985) assertions and the strong results he found in his 1976 study and later in a 1983 study by Strack and Coyne, the results from the laboratory paradigms have not been uniform. In fact, there has been considerable variability in the findings from these studies on many of the dimensions of Coyne’s model.
In the years following the publication of Coyne’s original work, a number of researchers attempted to replicate and modify his study (e.g., Borden & Baum, 1987; Dobson, 1989; Gotlib & Robinson, 1982; Gurtman, 1987; McNeil, Arkowitz, & Pritchard, 1987; Segrin, 1993; Strack & Coyne, 1983; Tan & Stoppard, 1994). Some authors also used patients with depression as their targets (e.g., McNeil et al., 1987), whereas others have used undergraduate students with dysphoria targets rather than confederates (e.g., Borden & Baum, 1987; Dobson, 1989; Strack & Coyne, 1983; Tan & Stoppard, 1994). Other authors have varied their methodologies by utilizing face-to-face conversations (e.g., Borden & Baum, 1987), telephone conversations (e.g., King & Heller, 1984), or video and audiotapes (Gurtman, 1987). Gotlib and Robinson (1982), and Paddock and Nowicki (1986) also measured the perception and behaviours of the participants in reaction to the depressed target. Despite all these variations in methodologies, the basic question being investigated was whether the depressed person elicited rejection in a brief interaction with strangers.

Results were varied, although many demonstrated a rejection effect. Of the studies reviewed here, the studies by Coyne (1976), Strack and Coyne (1983), and Gurtman (1987) found clear rejection effects. Tan and Stoppard (1994) found that male participants were significantly more likely to reject persons with dysphoria than were females. Segrin (1993) noted that friends were less rejecting than strangers. Joiner (1996) found that men elicited more rejection than women. With respect to others’ social perception of the person with depression, in the studies that measured this dimension, persons with depression were perceived much more negatively than persons who were
not depressed (Coyne, 1976; Dobson, 1989; King & Heller, 1984; Strack & Coyne, 1983).

Segrin and Dillard (1992) conducted a meta-analysis on the literature, and concluded that the depression-rejection correlation was .26 across all varieties of studies, although it varied from .18 to .61 depending on the methodology used. In his review of the literature, Segrin (2011) concludes that the rejection effect is "a very reliable feature of depressive interpersonal interactions" (p. 433); however, Marcus and Nardone (1992) had not reached the same conclusion in their earlier review. These authors found that the rejection effect was very dependent on the methodology used and was strongest when examined within the context of a long term relationship (Marcus & Nardone, 1992; Segrin & Dillard, 1992). Indeed, investigations of the marital interactions of persons with depression consistently describe negative and conflictual interactions between individuals with depression and their relatives (Coyne, Kessler, Tal, Turnbull, Wortman, & Greden, 1987). However, some authors have criticized much of the marital literature on methodological grounds suggesting that the participants of these studies are more likely to have an extensive previous history of negative relationship functioning, which makes it more difficult to study the genesis of such interactions (Marcus & Nardone, 1992). Therefore, it seems that while these findings with respect to rejection are relatively robust in a controlled laboratory setting, the findings are less clear when the relationship is examined in more real-world paradigms such as within the context of a long-term relationship. This is likely due to the methodological difficulties inherent in these types of settings.
The reassurance seeking component of Coyne's model has not been as extensively researched as the rejection component outlined above. However, there have been a number of studies, and Thomas Joiner's research group has been particularly active in this area (e.g., Joiner, 1995; Joiner & Metalsky, 1995; Joiner, Metalsky, Katz, & Beach, 1999; Joiner & Metalsky, 2001). Indeed, Joiner (2002) and Joiner and Timmons (2009) have posited that excessive reassurance seeking is the key interpersonal variable that is responsible for rejection. Starr and Davila (2008) recently conducted a meta-analysis of 38 studies on depression and excessive reassurance-seeking. These authors found that the weighted mean effect size across all studies for the correlation between depression and excessive reassurance seeking was $r = .32$. This represents a moderate, positive relationship between excessive reassurance seeking behaviour and concurrent depression symptoms (Starr & Davila, 2008). These authors could not meta-analyze whether excessive reassurance seeking could predict rejection, as there were not enough studies investigating these variables in a prospective fashion. However, based on the few studies that were available, they concluded that in the certain conditions, over time, excessive reassurance seeking will lead to rejection.

It is posited by Coyne (1976a) that the mechanism by which the depressed person elicits rejection is through the mechanism of the emotional contagion effect. That is, a target person's depression will predict the development, or a worsening, of a negative mood state in the person with whom they are interacting (Segrin, 2011). The findings with respect to mood induction have been somewhat variable; however, meta-analyses by Segrin and Dillard (1992), and Joiner and Katz (1999) have demonstrated modest to moderate effects for emotional contagion following interactions with depressed targets.
Research examining interpersonal behaviours and how they relate to depressive symptoms in a college roommate relationship has also provided support for Coyne’s (1976a) interactional model of depression. Joiner and Metalsky (1995) found that the interpersonal behaviours of reassurance-seeking and negative-feedback seeking were more common in roommates with depression, and that these behaviours predicted rejection by the roommate three weeks later. This finding was restricted to roommates exhibiting depressive symptomatology, not anxious symptoms or anhedonic mood. This finding was later replicated and elaborated in a study by Pettit and Joiner (2001) in which these authors found that participants who experienced a negative life event (poor exam performance) and who engaged in negative-feedback seeking from roommates reported a subsequent increase in symptoms of depression compared with all other students. Again this finding was specific to symptoms of depression.

Hokanson and Butler (1992) performed a cluster analysis of interpersonal behaviours exhibited by depressed college students towards their roommates, and two distinct subgroups were found: a dependent, friendly, overgenerous type and an autocratic, competitive, aggressive, mistrustful type. These behavioural types were found to be stable over a nine-month period and unrelated to gender or initial symptom severity. The roommates of the students with depression demonstrated relatively high levels of hostility and a progressive decline in social contact and satisfaction with their roommate with depression. In an earlier study, Hokanson, Rubert, Welker, Hollander, et al. (1989) followed students with depression and their roommates over a nine-month period in order to assess their relationships. Students with depression were more likely to have lower amounts of social contact with their roommates, were less likely to enjoy the contact
when it did occur, and experienced higher levels of life event stress. Roommates who were non-depressed reported lower satisfaction with the relationship and were more aggressive toward the roommate with depression.

The roommate relationship may provide an ideal opportunity in which to investigate the nature of the interpersonal interactions and depression. The examination of the roommate relationship is a naturalistic opportunity that does not have the history or complexity a marital relationship does, but is still more "true to life" than a laboratory experiment. Indeed, it has been argued that an adequate test and extension of the interpersonal model requires the examination of a naturally occurring relationship over time (Doerfler & Chaplin, 1985), and many researchers have used roommate relationships in their research (e.g., Hokanson & Butler, 1992; Joiner & Metalsky, 1995; Mongrain, Lubbers, & Struthers, 2004; Petit & Joiner, 2001).

**Personality vulnerability and the interactional model of depression.**

In an extension of Coyne’s work, cognitive theorists posited that cognitive personality vulnerabilities may guide how individuals interpret and experience stressful interpersonal life events in ways that eventually result in depression (Hammen, Burge, Daley, Davila, Paley, & Rudolph, 1995). For example, a person who has a dysfunctional interpersonal schema (e.g., sociotropy) that is based on previous experiences of rejection may be highly sensitized to rejection in future relationships despite longing for secure, trusting interactions. Thus, such a person would be more likely to interpret interpersonal events as rejection and consider such an event as further evidence of their unworthiness. Therefore, a downward spiral of reassurance-seeking and rejection as outlined by Coyne (1976a) could ultimately result in a depressive episode for the vulnerable individual.
There have been relatively few empirical studies that have investigated the interpersonal aspects of sociotropy-autonomy (or the analogous constructs of dependency and self-criticism). In a study of the dating preferences of undergraduate women, by Zuroff and deLorimer (1989) found that dependency was associated with desiring a partner with a high need for intimacy and low levels of masculinity. Self-criticism was associated with desiring a partner who had a high need for achievement, as well as having a higher level of masculinity. It was also noted that women who were self-critical were less satisfied in their current relationships than were women who scored higher on dependency. Zuroff, Stotland, and Sweetman (1995) studied the daily interactions of people who scored high on dependency and self-criticism. Self-critical persons were more likely to report a lack of pleasure in their social interactions, whereas dependency was associated with more frequent and intimate interpersonal contacts.

Using a circumplex-based measure of self-reported interpersonal behaviours, Alden and Bieling (1996) found that the undergraduate volunteers who scored higher on sociotropy were more likely to report problems expressing anger towards others, being taken advantage of, and having difficulty asserting one’s needs. Persons scoring high on autonomy were more likely to report having difficulty making long-term commitments, having difficulty expressing and experiencing love and affection towards others, and distancing themselves from others. This study supports the notion that distinct interpersonal patterns are associated with sociotropy and autonomy.

In a subsequent study by Bieling and Alden (1998) the interpersonal behaviours of dysphoric-sociotropic; non-dysphoric-sociotropic; dysphoric-autonomous; and non-dysphoric-autonomous groups of women were examined in a therapy analogue
interaction. Clear interpersonal differences in the two personality groups emerged. Individuals who were high in sociotropy were concerned with maintaining interpersonal relatedness and pleasing their partner. They were also more likely to perceive the confederate as being supportive and approving of them. In contrast, individuals high in autonomy were much more concerned with controlling the task and maintaining their separateness from the confederate. These authors also examined the reactions of the confederates (who were blind to group membership). The confederates reported experiencing less liking for the participants who were autonomous-dysphoric, as well as participants with dysphoria in general. This last finding in particular provides support for Coyne’s interactional hypothesis.

Finally, in the most recent study by Bieling and Alden (2001), their research paradigm was extended to participants who were high in either sociotropy or autonomy, and were either depressed or non-depressed; again using a laboratory-based therapy analogue task. Again, sociotropy was related to a higher level of interpersonal relatedness during the task whereas autonomy was associated with orientation towards oneself. The combination of autonomy and depression was again found to be the condition most related to fewer positive social behaviours and more rejection from the confederate.

Mongrain and colleagues (2004) measured dependency and self-criticism as well as interpersonal traits using a circumplex model, and used these independent variables to predict depression and rejection from roommates at several points throughout the academic year. Students scoring high in dependency and self-criticalness were more likely to be depressed throughout the year; however, only those high in self-criticism
were more likely to be rejected by their roommates. Interpersonal traits as perceived by the roommate mediated this personality-rejection relationship.

Results from these studies suggest that there appears to be clear interpersonal patterns associated with sociotropy and autonomy (dependency/self-criticism). Persons high in sociotropy strive to get along well with others as they are concerned with the approval of others. Indeed, they are judged more positively than are individuals high in autonomy. In contrast, individuals high in autonomy appear to be concerned with maintaining control of interpersonal interactions, lest others take advantage of them. This behaviour does result in rejection from others which would ultimately confirm their worldview that others cannot be trusted, and that one should maintain distance.

Some of these studies have relied on the participants’ self-descriptions of their interpersonal behaviours (Alden & Bieling, 1996; Zuroff & de Lorimier, 1989), while others have utilized observer ratings of laboratory interactions with confederates (Bieling & Alden, 1998; Bieling & Alden, 2001). Mongrain et al. (2004) used roommate ratings of interpersonal traits. One study examining another possible personality vulnerability to depression (perfectionism) used friends’ ratings of participants’ interactional styles (Wiebe & McCabe, 2002). These authors believed that such a methodology would allow for a more ecologically valid investigation than would be afforded through laboratory protocols involving strangers or self-reports of interpersonal behaviours.

**Stress-generation model of depression.**

Cognitive vulnerability models have helped us to understand depression onset and recurrence, whereas interpersonal models help us to understand the behaviours of the depressed person and reactions within their social system. The stress generation model
proposed by Hammen (1991), and reviewed again by Hammen (2006), may present a mechanism by which we can better understand the reciprocity of vulnerability and environment that ultimately contributes to the onset and/or recurrence of depression.

Indeed, Zuroff, et al. (2004) have identified the stress generation model as one that holds a great deal of promise to further our understanding of the interpersonal and cognitive aspects of depression. As this is a relatively new conceptualization of depression, not a great deal of research has been conducted to test its adequacy as a model. What follows is a brief summary of the work so far.

The initial stress generation pattern reviewed earlier was established by Hammen (1991) in a sample of women who were clinically depressed, and has since been replicated. Hammen, Davila, Brown, Ellicot, and Gitlin (1992) demonstrated that earlier stressful events were predictive of depression symptom severity in a one-year prospective study with 51 women with unipolar depression. Causal model analysis supported Hammen’s (1991) theory that clinical depression may be self-perpetuating, as historical variables were associated with depression severity as mediated by their effects on stress variables. Similarly, in a 10-year longitudinal study, Chun, Cronkite, and Moos (2004) compared stress generation in patients with clinical depression and community controls and found that depression in patients appeared to generate more stress than in community controls, and that this was particularly true for interpersonal stressors.

In an examination of the stress generation model of depression, Harkness, Monroe, Simons, and Thase (1999) addressed the question of whether people with a history of recurrent depression generate more negative stress in their lives than people without a history of recurrent depression. Psychiatric outpatients who were currently
depressed (first or multiple episodes) were recruited and a retrospective interview of their life events 12 months prior to their current episode was conducted. Results indicated that persons with a recurrent depression experienced significantly more negative life events (in which they were seen as contributors too – i.e., “dependent” events) in the months preceding their episode than were persons with first onset depression. However, these differences were no longer significant 3 months prior to the current depressive episode. An aspect that was not discussed by the authors of this paper was the potential role of personality vulnerabilities in these findings.

In a 1995 study by Hammen and colleagues, attachment cognitions were investigated as a possible vulnerability to depression in the context of interpersonal stressors. A measure of adult attachment was used to assess interpersonal cognitions about the ability to be close to, and depend on others as well as anxieties about rejection and abandonment. Women who had recently graduated from high school were followed for one year, and interview protocols were used to assess life events and psychopathology. It was found that although attachment cognitions, interpersonal stressors and their interactions contributed to the prediction of depression, the effects were not specific to depression and could predict general psychological distress. Perhaps attachment cognitions were not specific enough to depression.

In a replication and extension of Hammen’s (1991) original work, Daley, Hammen and Burge (1997) conducted a longitudinal study of late-adolescent women using an interview-based measure of life stress. Sociotropy and autonomy were considered possible vulnerabilities, and measures of sociotropy and autonomy at time 1 were predictive of interpersonal stressors at time 2. The effect for autonomy remained
constant even when symptoms of depression were controlled for, suggesting that personality vulnerabilities can have an effect over and above the interactional model of depression. In a further analysis of Daley et al.’s (1997) data, Nelson and colleagues (2001) found that sociotropy and autonomy could predict increases in chronic stress at time 2, even when depressive symptoms and levels of chronic stress from time 1 were controlled. This study concluded that rather than sociotropy and autonomy contributing exclusively to interpersonal stress (which had been suggested previously), it appeared that those with highly sociotropic or autonomous personality styles were more likely to create chronic stress in the domain they valued less. It appears that these vulnerable individuals may either neglect other areas of their lives, or simply have poorer skills in the domain that is less valuable to their self-esteem.

Nelson et al. (2001) felt that the results of this study were not incompatible with the congruency theory of the diathesis-stress hypothesis, as they interpreted the congruency theory to be most salient with respect to episodic stress, rather than chronic stress – which was the focus of their investigation. These authors suggested that their findings contribute to the cognitive model in that sociotropy and autonomy act as schemas, activated by daily work and relationship experiences, affecting behaviour in dysfunctional ways that lead vulnerable individuals to place emphasis on one domain while neglecting another.

Shahar, Joiner, Zuroff, and Blatt (2004) in their longitudinal study with 198 undergraduates using the personality vulnerability constructs of dependency and self-criticism found that those scoring higher in self-criticism were implicated in the generation of stress in a number of domains; both achievement and interpersonal (i.e.,
friend stress, roommate stress, school stress, and achievement stress). Those scoring higher in dependency did not seem to generate stress in any of the seven stress domains evaluated. These findings again suggest that stress generation is not specific to any one type of stressor. This same study noted that there was a significant interaction between dependency and family-and-friend life stress in the prediction of depression (i.e., the congruency hypothesis). That is, those who scored high in dependency and high in family-and-friend related life stress events demonstrated higher depression scores at Time 2. However, this did not translate into a stress generation effect. These authors postulated that this may be because those scoring higher in dependency would be motivated to maintain "harmony at all costs" in their relationships (thereby preventing future stress) while they themselves score higher in depression (Shahar et al., 2004). Indeed, in a 2010 study of stress generation by Shih and Auerbach, sociotropy was noted as predicting lower levels of interpersonal stress in women over time. This expanded upon Shih’s (2006) finding that being female and scoring high on sociotropy predicted higher levels of dependent interpersonal stress in the short term.

Of particular interest to the present study, is that the stress generation pattern has been demonstrated in samples of college students with elevated depression scores (rather than clinical depression per se). For example, Joiner, Wingate, Gencoz, and Gencoz (2005), asked students to complete questionnaire batteries at time 1 and then again in 5 weeks. Their findings replicated the stress generation effect, and suggested that hopelessness plays an important role in the effect. Similarly, Potthoff, Holohan, and Joiner (1995) integrated an interpersonal model (reassurance-seeking) and stress generation to determine their effects on depressive symptoms in college students. These
authors found that stress generation mediated the relationship between interpersonal style and depression.

In their 2010 review of the literature, Alloy, Lui, and Bender encouraged researchers to incorporate methodological improvements in their work in order to facilitate increased understanding of the subject area. Employing prospective designs, using collateral reports, and moving away from checklist based measures of stress were among their recommendations. Several of the studies mentioned (e.g., Joiner et al., 2005; Potthoff, Holahan, & Joiner, 1995; Shahar, et al., 2004) have used checklist measures of life event stress rather than interview administered protocols with stress severity ratings.

In addition, in all the studies in which interpersonal variables were measured, self-report measures of interpersonal styles or problems were used. By using reports of another person close to the target individual in addition to self-reports, it may be possible to elucidate some of the interpersonal interactions that occur to better examine the mechanisms by which these dependent stressors evolve. Finally, there is a paucity of research which examines the stress generation hypothesis in both genders, as the focus has largely been on women. For the stress generation model to have generalizability, both genders need to be studied.

**Revisiting the transactional model.**

With increased awareness of the complexity of the etiology of depression, researchers in recent years have been working to improve our understanding of the interactions between different intrapersonal, interpersonal, and stress effects. As reviewed previously, Golan, Joiner, Zuroff, and Blatt (2004) examined the impact that dependency and self-criticism, reassurance-seeking, and life event stress had in the prediction of
depressed mood in undergraduate students. These authors noted different types of stress did moderate the relationship between personality and depression, but reassurance-seeking was only predictive of spouse-related stress. Rather than using personality variables, Flynn, Kecmanovic, & Alloy (2010) examined the possible contributions of the cognitive process of rumination to the generation of interpersonal stress, perceptions of social support, and depressive symptoms. It was reported that being discontent with one’s social support mediated the relationship between rumination and depression, and that both depressive rumination and dependent interpersonal stress predicted depression over time. Both of these studies provide evidence in support of the transactional nature of variables in the etiology of depression.

**The Present Study**

The basic premise of the present study is that person and situation variables are interactive and exert their mutual influence over time. Thus, this study represents neither an exclusive focus on the social context of depression, nor an exclusive focus on cognitive personality vulnerabilities and stress on depression. Rather, it represents an attempt in the research on depression to integrate all three of these theoretical concepts where possible to better our understanding of the etiology of depressed mood states.

Zuroff, Mongrain, and Santor (2004; Figure 1) proposed a conceptualization of depression, which, rather than pitting one theoretical camp against another, has integrated the theories. Their model suggests that, “…attention should be focused on processes related to the selection/creation of social context, cognitions about that context, the behavior strategies employed by vulnerable individuals, and the impact of those strategies on their social context” (Zuroff, Mongrain, & Santor, 2003; p.59). Therefore,
both troubled interpersonal relationships and the diathesis-stress effect are seen as contributing to depressed mood states. Symptoms of depressed mood are also conceptualized as having a reciprocal negative effect on interpersonal relationships in the manner proposed by Coyne (1976a). In addition, the stress a person may experience that contributes to a depressed mood is not seen as being purely fateful in nature, as the role of stress generation may also play an important role (Hammen, 1991). Finally, Zuroff et al. (2004) posit that a person’s disturbed interpersonal relationships may continue to impact upon their personality vulnerabilities. How does this model apply to the current research?

Limited research has been conducted in a naturalistic setting to investigate the relationship between the cognitive vulnerabilities of sociotropy and autonomy and interpersonal problems. This is particularly true of research which explores the nature of the relationship of interpersonal problems in general (e.g., Bieling & Alden, 2001). A comparatively larger amount of research has been dedicated to investigating the impact of the interpersonal behaviour of reassurance-seeking on depression, and that reassurance-seeking has been more strongly associated with sociotropic personality vulnerabilities (Shahar, Joiner, Zuroff, & Blatt, 2004). This study expands the definition of interpersonal problems beyond the scope of reassurance-seeking, and therefore contributes to the personality vulnerability and interpersonal problem literature by further elucidating the patterns of interpersonal problems associated with each of these personality types. Incorporating measures of interpersonal problems as rated by the self, and interpersonal problems as rated by the roommate attempts to further enrich this area of research. The development and adaptation of a measure of interpersonal behaviour from the perspective
of the roommate adds to our understanding of the intricacies of interpersonal behaviour in the prediction of depression. For example, we are able to examine which is more predictive of depression: a person's own perception of their interpersonal behaviour, or the perceptions of a person close to them.

Finally, while the types of interpersonal stress a person experiences have been linked with interpersonal behaviour with respect to the stress generation model (i.e., reassurance seeking; Eberhart, 2008), to date, an association between a broader definition of interpersonal behaviour and the types of stress associated with a variety of behaviours has not been made. Understandably, depression researchers such as Coyne and Joiner, and their interest in reassurance-seeking behaviour have heavily influenced the research in this area (e.g. Coyne, 1976; Joiner, et al., 2005). However, it is more than likely that there are other interpersonal behaviours that have a role to play in the creation of stress and depression. Research on the relationship between interpersonal behaviour and stress is limited; (Darling, McWey, Howard, & Olmstead, 2007) therefore, utilizing a qualitative research approach may assist in identifying possible areas of interest. By taking a wider view of interpersonal behaviour beyond reassurance-seeking, or the interpersonal behaviours associated with sociotropy and autonomy, new patterns may emerge which may in turn inform our understanding of interpersonal behaviours and stress generation.

**Research questions.**

The present research represents an attempt to evaluate the efficacy of the model presented by Zuroff et al. (2004). Therefore, do the interactions of cognitive personality vulnerabilities (i.e., sociotropy and autonomy), life stress, and interpersonal problems
predict depression more effectively than any of these factors working alone? This is the major question from which the present research flows. From this overarching question follow a number of secondary research questions.

First, is there evidence of the congruency hypothesis in the present study? That is, does the type of stress (i.e., achievement or interpersonal) trigger depression in those participants who have higher scores in sociotropy and autonomy? Are these stressors consistent with the person’s personality vulnerability, or are they generated in the incongruent domain (e.g., is it sociotropy-interpersonal stress or sociotropy-achievement stress; Nelson et al., 2001).

Second, what is the relationship of the cognitive personality vulnerabilities of sociotropy and autonomy with the interpersonal problem variables, and how do these interpersonal variables in turn relate to depression? Can sociotropy-autonomy predict particular interpersonal problems, and are these problems predictive of increases in depression scores? Conversely, do persons who score higher in depression report more interpersonal problems over time? Do interpersonal problem scores as rated by an observer (i.e., roommate) provide any additional understanding with regard to the relationship between interpersonal problems and depression?

Third, is there a relationship between the cognitive personality vulnerabilities of sociotropy and autonomy and whether the stress they experienced was dependent or independent of their actions? Are these dependent stressors consistent with the person’s personality vulnerability, or are they generated in the incongruent domain (e.g., Nelson et al., 2001).
Finally, what are the types of life stressors that university students experience? Is there a relationship between the types of interpersonal problems a person reports, and the types of life event stress they experience? Are there qualitative differences in the types of stress persons with a particular interpersonal style experience?

**Hypotheses.**

**Hypothesis 1: Transactional Model.**

Individuals who had higher scores on cognitive personality variables, who reported more negative interpersonal behaviours, and who reported greater life stress would experience increased depression at time 2.

*Hypothesis 1a:* Individuals who scored higher on sociotropy, and who scored higher on the interpersonal behaviours associated with sociotropy, and who experienced more interpersonal life stressors would report higher depression scores at time 2.

*Hypothesis 1b:* Individuals who scored higher on autonomy, and who scored higher on the interpersonal behaviours associated with autonomy, and who experienced more achievement life stressors would report higher depression scores at time 2.

**Hypothesis 2: Congruency Hypothesis.**

The type of stress experienced by an individual will moderate the relationship between cognitive personality vulnerabilities and depression scores at time 2.
Hypothesis 2a: Individuals who had higher scores on sociotropy and who experienced more interpersonal life event stress will have higher depression scores at time 2.

Hypothesis 2b: Individuals who had higher scores on autonomy and who experienced more achievement life event stress will have higher depression scores at time 2.

Hypothesis 3: Personality Vulnerability and Negative Interpersonal Behaviours, Part I.

The types of interpersonal behaviours reported would moderate the relationship between personality vulnerabilities and depression both at time 1 and time 2. These same associations would be noted with respect to roommate observations of interpersonal behaviour.

Hypothesis 3a: Individuals who scored higher on sociotropy and reported more of the interpersonal behaviours associated with sociotropy will report more depressive symptoms at time 1 and time 2.

Hypothesis 3b: Individuals who scored higher on autonomy and reported more of the interpersonal problems associated with autonomy, will report more depressive symptoms at time 1 and time 2.
**Hypothesis 4: Personality Vulnerability and Negative Interpersonal Behaviours, Part II.**

Individuals who were more cognitively vulnerable, and had higher depression scores at time 1 would report more interpersonal difficulties at time 2 (i.e., the downward spiral). These same associations would be noted with respect to roommate observations of interpersonal behaviour.

*Hypothesis 4a:* Individuals who scored higher on sociotropy and had more depressive symptoms at time 1 would report more interpersonal behaviours associated with sociotropy at time 2.

*Hypothesis 4b:* Individuals who scored higher on autonomy and had more depressive symptoms at time 1 would report more interpersonal behaviours associated with autonomy at time 2.

**Hypothesis 5: Stress Generation Hypothesis – Part I.**

Participants who were more cognitively vulnerable at time 1 would report more stressors that in some part were due to their own actions (i.e., dependent stressors) at time 2. No prediction was made as to whether these types of stressors would be interpersonal or achievement life stressors.

*Hypothesis 5a:* Individuals who scored higher on sociotropy would report more dependent stressors at time 2 (over and above time 1 stress).

*Hypothesis 5b:* Individuals who scored higher on autonomy would report more dependent stressors at time 2 (over and above time 1 stress).
Hypothesis 6: Stress Generation Hypothesis – Part II.

Participants who scored higher on the cognitive personality variables of sociotropy or autonomy, or the interpersonal problem behaviours associated with those variables will report more stress at time 2. No prediction was made regarding which interpersonal or personality variables would be related to either type of stress.
Chapter 2: Methods

Participants

One hundred and fifty two same-sex roommate pairs were recruited from the residence communities of the University of New Brunswick (UNB), Fredericton Campus and St. Thomas University (STU) during the first data collection period. Unfortunately, the attrition rate was high for the follow-up data collection. Of the 304 participants at time one, 60 (27 pairs plus 6 individuals) chose to participate in the follow-up data collection. Thus, 19.7% of the original sample participated in the follow-up. Although the reasons for this attrition are largely unknown, possible explanations include the following: During the initial data collection, participants were asked to provide the researcher with contact information (i.e., email address or phone number) if they were willing to participate in the second data collection. Of the 304, 196 indicated that they were interested in participating in the second data collection, leaving 64.5% of the original sample to draw from. Second, UNB residence records revealed that of the 304 students, 14 had left the residence system (due to leaving school or moving off campus). Seventeen participants, who responded to the researcher’s email regarding the follow-up sessions, indicated that as they had already collected all their bonus points for participating in research projects, they were no longer interested in participating. It is likely that this would have been true for other participants who chose not to reply to the emailing. St. Thomas University (STU) students were not eligible for course credit for either data collection period, and therefore, had fewer incentives from the start to
participate. Six of 48 STU students participated at Time 2. Finally, a few students replied with apologies that they were too busy or no longer interested.

An a priori power analysis had determined the appropriate sample size for the planned analyses where all the independent variables would be entered into the largest analysis. Specifically, the parameters were set as follows, with an expected medium effect size, alpha level at .05, 1 - $\beta$ = .80, and estimated $f^2 = .15$ (Cohen & Cohen, 1983).$^1$

For Time 1 data, the power analysis indicated that 139 participants were needed and given that the sample size was of 300 participants, this would provide ample statistical power. At Time 2, 180 participants were required, but less than half of that number (N=60) participated. Therefore, the analytical approach was revised. Post hoc power analyses are discussed on an analysis-by-analysis basis for those analyses specific to the Time 2 data.

From the Time 1 data, one pair of participants was removed as they were twin sisters and it was felt that their roommate relationship would be substantially different from those based on friendship or room assignment as they had lived together for over 19 years. No participants had to be removed from the Time 2 data set; however, there were six participants who participated in the follow-up without their roommate. Therefore their data were not included in those analyses that involved roommate ratings of their interpersonal behaviours. Thus, the final sample for Time 1 consisted of 302 men and

$^1$The independent variables were: potential control variables (Gender, BDI-II Time 1), Sociotropy, Autonomy, Interpersonal Stress, Achievement Stress, Overly-Accommodating, Distant, and all 2- and 3-way interaction terms.
women attending the University of New Brunswick \((n = 254)\) or St. Thomas University \((n = 48)\) in Fredericton, New Brunswick. The Time 2 sample consisted of 60 men and women (University of New Brunswick, \(n = 54\); St. Thomas University, \(n = 6\)).

The participants in the Time 1 sample ranged in age from 17 to 21 years \((M = 18.6, SD = 0.89)\). Selected demographic characteristics of the samples can be seen in Tables 1 to 3. As the range in the length of time the roommates had known one another was so vast (i.e., 1 month to 228 months), the Mode provides a more informative statistic, at 3 months (34.6% of the sample). When those participants who completed the Time 2 data collection are examined alone, the range is again vast (2 months to 217 months), but the Mode remains 3 months (33.9% of Time 2 sample). Most participants had not lived together prior to this academic year, and had only lived together for the few months prior to the November-December data collection.

Table 1

*Demographic Characteristics of the Time 1 and Time 2 Samples*

<table>
<thead>
<tr>
<th></th>
<th>Time 1</th>
<th></th>
<th>Time 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(M)</td>
<td></td>
<td>(M)</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>(SD)</td>
<td></td>
<td>(SD)</td>
</tr>
<tr>
<td>Months Known Roommate</td>
<td>27.96</td>
<td>51.21</td>
<td>34.41</td>
<td>60.62</td>
</tr>
<tr>
<td>Months Lived with Roommate</td>
<td>4.38</td>
<td>4.26</td>
<td>3.47</td>
<td>2.13</td>
</tr>
</tbody>
</table>

*Note.* Time 1: \(N = 302\), Time 2: \(N = 60\).
Table 2

*Categorical Demographic Characteristics of the Time 1 Sample*

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>130</td>
<td>43.0</td>
</tr>
<tr>
<td>Female</td>
<td>172</td>
<td>57.0</td>
</tr>
<tr>
<td><strong>Race or Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>284</td>
<td>94.0</td>
</tr>
<tr>
<td>Black</td>
<td>4</td>
<td>1.3</td>
</tr>
<tr>
<td>Asian</td>
<td>3</td>
<td>1.0</td>
</tr>
<tr>
<td>First Nations</td>
<td>5</td>
<td>1.7</td>
</tr>
<tr>
<td>Arabic</td>
<td>3</td>
<td>1.0</td>
</tr>
<tr>
<td>Latin American</td>
<td>3</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>Residence Lifestyle</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Co-ed</td>
<td>190</td>
<td>62.9</td>
</tr>
<tr>
<td>All Male</td>
<td>74</td>
<td>24.5</td>
</tr>
<tr>
<td>All Female</td>
<td>38</td>
<td>12.6</td>
</tr>
</tbody>
</table>

*Note.* N = 302.
Table 3

*Categorical Demographic Characteristics of the Time 2 Sample*

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>14</td>
<td>23.0</td>
</tr>
<tr>
<td>Female</td>
<td>46</td>
<td>77.0</td>
</tr>
<tr>
<td><strong>Race or Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>57</td>
<td>95.0</td>
</tr>
<tr>
<td>Latin American</td>
<td>3</td>
<td>5.0</td>
</tr>
<tr>
<td><strong>Residence Lifestyle</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Co-ed</td>
<td>43</td>
<td>71.7</td>
</tr>
<tr>
<td>All Male</td>
<td>7</td>
<td>11.7</td>
</tr>
<tr>
<td>All Female</td>
<td>10</td>
<td>16.7</td>
</tr>
</tbody>
</table>

Note.  N = 60.  Information was collected during the Time 1 data collection.
Almost all participants identified themselves as Caucasian (Time 1: 94%; Time 2: 95%). Forty-three percent of the sample was male at Time 1, and dropped to 25% at Time 2, which was significantly less than expected ($\chi^2 = 8.98$, $p = .003$). Thus, there were proportionally more women in the Time 2 sample.

**Measures**

The *Personal Information Sheet* was designed by the researcher and used to collect background information regarding the participant’s age, gender, ethnicity, faculty, residence lifestyle (i.e., co-ed, all-female, or all-male), the length of time the roommates have known each other, and how long they have lived together (see Appendix A).

The *Beck Depression Inventory-II (BDI-II)* (Beck, et al., 1979) is a 21-item, self-report inventory designed to measure the severity of depressive symptoms with possible scores ranging from 0 to 63 (see Appendix A). Items on the BDI measure the cognitive, affective, and physiological symptoms of depression with the total score representing a combination of all these symptoms. Higher scores indicate greater severity of depression. Each item has a 4-point Likert scale (scored 0 to 3) ranging from neutral (e.g., “I do not feel sad”) to severe (e.g., “I am so sad or unhappy that I can’t stand it”). The BDI has been found to be a highly reliable and valid instrument, and has been used in a great deal of psychological research. A meta-analysis revealed high internal consistency estimates for this scale, with mean coefficient alphas of .86 and .81 for psychiatric and non-psychiatric populations respectively (Beck, Steer, & Garbin, 1988). This scale demonstrates high convergent validity with respect to other instruments measuring depression as well as to clinical assessments of depression (Beck, Steer, & Garbin, 1988).
In the present study, the internal consistency of Time 1 BDI-II responses was $\alpha=.88$, and the internal consistency of Time 2 BDI-II responses was $\alpha=.96$.

The *Personal Style Inventory* (PSI; Robins et al., 1994) is a 48-item measure that assesses the cognitive personality vulnerabilities of sociotropy and autonomy (see Appendix A). Participants rate themselves on a scale from 1 (“strongly disagree”) to 6 (“strongly agree”) for each statement. The PSI is comprised of six subscales: Concern About Others; Dependency; Pleasing Others; Perfection/Self-Criticism; Need for Control; and Defensiveness. Combinations of these six can be added together to calculate Sociotropy (Concern About Others, Dependency, and Pleasing Others) and Autonomy (Perfection/Self-Criticism, Need for Control, and Defensiveness). Robins and colleagues (1994) reported that the Sociotropy and Autonomy subscales have demonstrated good internal consistency (.88 and .86, respectively) and test-retest reliability of .80 and .70 respectively. In the present study, sociotropy and autonomy also demonstrated good internal consistency ($\alpha=.87$ and $\alpha=.81$, respectively). Robins and colleagues (1994) reported that the sociotropy and autonomy scales correlate $r=.18$, and concluded therefore that they could be considered largely independent dimensions. In the present study, sociotropy and autonomy were found to correlate $r=.30$ ($p<.001$). However, as mentioned in the Introduction, other authors have reported problems with the inter-correlations of these cognitive personality constructs. Indeed, Bagby et al. (1998) suggested removing the Perfectionism/Self-Criticism scale from the scoring of Autonomy to improve the stability of the scale. When this was done, the correlation between Sociotropy and Autonomy was reduced to $r=.18$, ($p<.001$), which while still significant, represented a weaker relationship, and therefore more independence, between these variables. The
internal consistency of Autonomy without the Perfectionism/Self Criticism (representing the removal of 4 of the original 24 items) was found to be $\alpha = .79$. As this is an acceptable level of consistency (George & Mallery, 2003), coupled with an improvement in the discriminant validity of the measure, the Autonomy scale without the Perfectionism/Self-Criticism scale was the version used in this study. For ease of communication, however, it will be referred to only as “Autonomy,” rather than “Autonomy, without the Perfectionism/Self-Criticism scale.”

The Inventory of Interpersonal Problems – 64 (IIP-64; Horowitz, Alden, Wiggins, & Pincus, 2000) is a 64-item self-report measure of common interpersonal problems (see Appendix A). The items describe interpersonal behaviours that “you do too much” (e.g., “I fight with other people too much”) and behaviour that is “hard for you to do” (e.g., “It is hard for me to join in on groups”). The IIP-64 is based on the interpersonal theoretical tradition of a circumplex, that is, the idea that interpersonal behaviours and traits form a circle that can be characterized in terms of basic coordinates of affiliation and dominance (Leary, 1957; Wiggins, 1996). From these coordinates, hemisphere, quadrant, or octant scores may be calculated. The IIP-64 octant scales are: 1. Domineering/Controlling; 2. Vindictive/Self-Centered; 3. Cold/Distant; 4. Socially Inhibited; 5. Nonassertive; 6. Overly Accommodating; 7. Self-Sacrificing; and 8. Intrusive/Needy. In the literature, the $\alpha$ coefficients for the eight scales range from .76 to .88, and the scales show theoretically consistent correlations with established interpersonal measures (Alden et al., 1990; Horowitz et al., 2000). The internal consistency of the 8 subscales at the Time 1 data collection were consistent with these findings, ranging from .75 to .86 (Table 4).
Table 4

*Internal Consistency of IIP-64 and IIP-64 (Roommate Version) Subscales*

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Horowitz, et al., 2000</th>
<th>Present Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>IIP-64</td>
<td>α</td>
<td>α</td>
</tr>
<tr>
<td>Controlling</td>
<td>.76</td>
<td>.79</td>
</tr>
<tr>
<td>Self-Centred</td>
<td>.81</td>
<td>.78</td>
</tr>
<tr>
<td>Distant</td>
<td>.86</td>
<td>.83</td>
</tr>
<tr>
<td>Inhibited</td>
<td>.85</td>
<td>.85</td>
</tr>
<tr>
<td>Nonassertive</td>
<td>.88</td>
<td>.86</td>
</tr>
<tr>
<td>Accommodating</td>
<td>.81</td>
<td>.79</td>
</tr>
<tr>
<td>Self-sacrificing</td>
<td>.80</td>
<td>.78</td>
</tr>
<tr>
<td>Needy</td>
<td>.76</td>
<td>.75</td>
</tr>
</tbody>
</table>

IIP-64 (Roommate Version)

<table>
<thead>
<tr>
<th>Subscale</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Controlling</td>
<td>-</td>
<td>.87</td>
</tr>
<tr>
<td>Self-Centred</td>
<td>-</td>
<td>.86</td>
</tr>
<tr>
<td>Distant</td>
<td>-</td>
<td>.88</td>
</tr>
<tr>
<td>Inhibited</td>
<td>-</td>
<td>.85</td>
</tr>
<tr>
<td>Nonassertive</td>
<td>-</td>
<td>.89</td>
</tr>
<tr>
<td>Accommodating</td>
<td>-</td>
<td>.82</td>
</tr>
<tr>
<td>Self-sacrificing</td>
<td>-</td>
<td>.82</td>
</tr>
<tr>
<td>Needy</td>
<td>-</td>
<td>.74</td>
</tr>
</tbody>
</table>

*Note.* Horowitz et al., 2000 *N* = 800. Present Study, *N* = 300. Number of Items for all subscales is 8.
At the time of study, no form of the IIP-64 had been developed so that one person could rate the interpersonal behaviour of another. Therefore, a new version of the IIP-64 (Roommate Version) was developed for the present study to allow one roommate to evaluate the interpersonal behaviours of the other (Appendix A). The 64 items on the Roommate Version (RV) remained the same as on the original IIP-64; however, the wording was changed to reflect the change in perspective of evaluating a roommate (e.g., “My roommate fights with others too much”). The protocol for calculating the octant scores also remained the same. Alpha coefficients of the eight subscales based on the Time 1 data ranged from .74 to .89, and are given in more detail in Table 4. Further information regarding the reliability and validity of this new scale are discussed in Chapter 3.

*Stress interviews* were conducted by the researcher based on the 134 items of the Life Events and Difficulties Schedule (LEDS; Brown & Harris, 1978). The items covered both situational and event stressors, and covered a wide range of circumstances including (but not limited to) problems with family, finances, academics, roommates, significant personal relationships, and health. If a participant indicated that s/he had experienced the situation or event in the previous 6 to 8 weeks, follow-up interview probes based on a protocol outlined by Raghavan, Le, and Berenbaum (2002) were used. More detailed information was obtained about the circumstances of the event, how often the event occurred, how unexpected it was, and how much control they believed they had over the event. The interview and the probes are given in Appendix B.

The responses to the stress interviews were carefully noted by the interviewer, and then coded by two trained doctoral level raters who placed each stressor in an
interpersonal or achievement category using the guidelines for classification suggested by Raghavan, et al. (2002). Stressors were defined as “achievement” if they were predominantly characterized by issues of self-control, self-gratification, self-maintenance, and pursuit and attainment of non-interpersonal goals. “Interpersonal” stressors were defined as those that were characterized by concerns, needs, and cognitions that were interpersonally focused. The interrater reliability (Cohen's kappa) for the raters was found to be $\kappa = .86$, $p<.001$. According to Landis and Koch's (1977) guidelines for the interpretation of kappa values, this represents almost perfect agreement between the raters. From the 60 participants, there were 890 life events rated as achievement or interpersonal events by the judges. From these 890 events, 83 were not agreed upon by the raters as to whether they were interpersonal or achievement events; however, they still needed to be coded as such for the subsequent analyses. Therefore, for these 83 events, a third rater (a doctoral student blind to the other 2 raters’ responses) was used as a "tie breaker," and the event was either coded achievement or interpersonal based on this rater’s decision.

Finally, in order to facilitate the testing of the stress generation hypothesis, the raters further indicated on a 5-point scale whether each achievement or interpersonal stressful event was dependent or independent of the participant, using the criteria outlined by Hammen (1991). A rating of 1 indicated that the event’s occurrence was certainly independent of the behaviour or characteristics of the participant while a rating of 5 indicated that the event was almost certainly due to the behaviour or characteristics of the participant. As this is a continuous rating scale and employs two raters, an intraclass
correlation was used to calculate interrater reliability ($r=.88$, $p<.001$). Again, this value represents a very high degree of agreement between the raters.

*SCID – Mood Module.* In order to determine whether any of the participants were currently or historically experiencing a mood disorder, the Mood Module of the Structured Clinical Interview for Diagnosis was administered during the second data collection (First, Spitzer, Gibbon, Williams, & Benjamin, 1996). Of the 60 participants, five met criteria for an episode of Major Depression during the time of study. An additional six participants had a history of depression, and although they were not currently depressed, they had experienced at least one depressive episode in their lifetime. One of these participants had a previous diagnosis of bipolar disorder. Of the five participants who were experiencing depression at the time of the study, all were either under the care of a physician or psychiatrist, and/or had made connections with Student Counselling Services on the UNB campus.

**Procedure**

Following approval from the University of New Brunswick and St. Thomas University Ethics Boards, students attending UNB and STU were recruited to participate in a study of mood and roommate relationships. University recruitment occurred through announcements in introductory psychology classes, a sport psychology class, and through announcements and posters in university residences. The information given in these posters and announcements is shown in Appendix C. Introductory psychology students from UNB were able to sign up via the Experimental Sign Up Website to complete the study at a time of their choice in a data collection room in the UNB Psychology Department. Participants attending introductory psychology classes received two bonus
points for their participation. Students living in residence arrived at a designated room in
the residence to complete the questionnaire and received pizza for their participation.

Participation during the first data collection took approximately one hour. All
participants completed the questionnaires in small groups, seated far enough away from
one another to ensure confidentiality of responses. Before completing the questionnaire
package, participants were provided an information sheet about the project, and were
required to sign an informed consent form that included a request for permission to be
contacted for the follow-up data collection (see Appendices D & E). These documents
were collected and stored in a separate envelope from questionnaire packages.

Questionnaire packages were then distributed and included measures in the following
order: a) Personal Information Sheet; b) Personal Style Inventory; c) Beck Depression
Inventory – II; d) Inventory of Interpersonal Problems-64, and Inventory of Interpersonal
Problems-64 (Roommate Version). These last two questionnaires were counterbalanced.

Approximately 6-8 weeks following the Time 1 data collection, participants who
had indicated their interest in participating at Time 2 were contacted by email or
telephone for an appointment (depending on the contact information they had given the
researcher at Time 1). Participants could choose to participate in a private location in the
residences or in a room in the UNB Psychology Department. All participants chose to
meet the researcher in their residences. Roommates were also asked to attend the same
appointment time if possible. Participants completed a second informed consent form,
and then completed the questionnaire package and participated in the SCID – Mood
module and stress interview. If the roommates were able to participate at the same time,
the second member of the pair completed the questionnaire while the first was being
interviewed, and then switched. The Time 2 questionnaire packages consisted of: a) the BDI – II; b) the IIP-64, and IIP-64 (Roommate Version) (counterbalanced). The time to complete the Time 2 data collection was again approximately 1 hour, although this varied depending on the number of stressful events the participant reported during the stress interview. The measures administered at the Time 1 and Time 2 data collections are presented in Table 5.

At the end of each data collection, participants were provided with a debriefing document that gave information about the study, and included several community-counselling resources in the event that participants wanted to discuss feelings that arose from their participation (see Appendix F). The researcher was also available to debrief participants after their participation. In addition, participants were provided with the researcher’s e-mail address and the e-mail address of her thesis supervisor, a licensed clinical psychologist, and were provided with the contact information for the Chair of the Ethics Committee.
Table 5

*Measures Administered at Time 1 and Time 2 Data Collections*

<table>
<thead>
<tr>
<th></th>
<th>Time 1</th>
<th>Time 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Information Sheet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal Style Inventory (PSI; Robins, et al., 1984)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beck Depression Inventory - II (BDI-II; Beck et al., 1979)</td>
<td>Beck Depression Inventory – II (BDI-II; Beck et al., 1979)</td>
<td></td>
</tr>
<tr>
<td>Inventory of Interpersonal Problems – 64 (IIP-64; Horowitz et al., 2000)</td>
<td>Inventory of Interpersonal Problems – 64 (IIP-64; Horowitz et al., 2000)</td>
<td></td>
</tr>
<tr>
<td>Inventory of Interpersonal Problems – 64 (Roommate Version)</td>
<td>Inventory of Interpersonal Problems – 64 (Roommate Version)</td>
<td></td>
</tr>
<tr>
<td>Life Events and Difficulties Schedule (LEDS; Brown &amp; Harris, 1978)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structured Clinical Interview for Diagnosis – Mood Module (SCID; First, et al., 1996)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Data Analyses

Due to a low rate of participation at the Time 2 data collection, the omnibus hierarchical multiple regression in which depression was predicted by the three-way interactions between cognitive personality vulnerabilities, interpersonal problems and stress (Transactional Model; Hypothesis 1) was not performed due to concerns of low power and resulting instability of results. Hierarchical multiple regression analyses were used to test Hypothesis 2 (Congruency Hypothesis), Hypothesis 3 (Personality Vulnerability and Negative Interpersonal Behaviours – I), and Hypothesis 4 (Personality Vulnerability and Negative Interpersonal Behaviours – II). The two-way interactions between the research variables of interest were examined in the prediction of depression scores (Hypotheses 2 and 3) or interpersonal behaviours (Hypothesis 4). Bivariate correlations with significance tests, and a multivariate multiple regression were used to examine the stress-generation hypothesis (Hypothesis 5). A qualitative Thematic Analysis was completed to examine in more depth the relationships between interpersonal styles and the types of stress experienced by the participants.

Two multiple regression analyses were conducted using the Time 1 data set. In order to have more confidence in the significant findings of the analyses involving this data set, a Bonferroni correction for alpha was made. Alpha had been selected at .05 as per convention (Cohen & Cohen, 1983; Tabachnick & Fidell, 2001); however, once the correction was made to allow for the two analyses, alpha for these analyses was set at (α = .05/2), or .025. A similar correction was made for those analyses involving the Time 2 data set with 60 participants. Rather than adjust alpha to a less stringent level due to the
low rate of participation, alpha was again set at .05 as per convention, with a Bonferroni correction to control for Type I error. Five analyses were performed using this data set, therefore alpha was set at \((\alpha = .05/5)\), or .01 for these analyses. Thus, the decision was made to be more conservative in hypothesis testing and err on the side of risking the greater possibility of Type II error, rather than Type I.
Chapter 3: Results

Data Conditioning

Conditioning of the data consisted of several steps. First, variables were checked to ensure that all values, means, and standard deviations fell within the expected range. Second, the data set was screened for missing data, and the pattern of missing data was examined. One participant in the first data collection had an excess of missing data (>25%) on at least one of the primary variables in the study, and was therefore removed from the sample. The remainder of missing data appeared to be random. Random missing values for predictor variables were replaced with the group mean for that item.

Third, the data were screened for univariate and multivariate outliers in both Time 1 and Time 2 data sets, as outlined by Tabachnick and Fidell (2001). Cases were determined to be univariate outliers if their standardized scores were greater than three standard deviations from the mean, and if they were clearly discontinuous from the distribution. In the Time 1 sample, there were 10 cases (5 pairs) whose standardized scores were greater than +/- 3.00 on the control variable KNOWN (length of time roommates have known each other); however, following the examination of the distribution plots, they were judged to be continuous with the rest of the sample and therefore retained. In the Time 2 sample, one participant indicated that they had experienced an unusually high number of interpersonal stressors, and their score was discontinuous from the sample. Due to concerns about the already low N, this participant was retained; however their IP stress score was recalibrated so it was the highest possible
score that was still continuous with the remaining scores (19 stressful events to 15 stressful events).

Cases were considered to be multivariate outliers if they had a Mahalanobis distance that was significant at the .001 level and were clearly discontinuous from the rest of the distribution, and were considered to be bivariate outliers if they had a standardized residual greater than 3.30 (Tabachnick & Fidell, 1996). Analyses were performed both before and after removing outliers. Multivariate or bivariate outliers were only removed if they significantly influenced the results. Otherwise, they were retained.

Fourth, the assumptions of normality, linearity, and homoscedasticity were tested. Frequency histograms were used to screen for normality of continuous variables. Linearity and homoscedasticity assumptions were examined by inspecting the bivariate scatterplots for the primary measures in the study (Tabachnick & Fidell, 2001). As expected, BDI-II scores were moderately skewed at both Time 1 and Time 2. Transformations did not normalize these variables, nor did they significantly alter the correlations between variables. These non-normal distributions are believed to reflect the expected population distributions and, in order to facilitate ease of interpretation of results, the original variables were retained for all analyses.

Fifth, the zero-order correlations between independent variables were examined for multicollinearity and singularity. In the Time 2 data analysis, one variable (Overly-Accommodating) had an intercorrelation of r=.69 with Sociotropy (Table 12), which is just within the range of the lower limit of multicollinearity problems (Tabachnick & Fidell, 2001). This issue will be discussed further when the descriptive statistics for the Time 2 predictor variables are reviewed. There were no other concerns with respect to
multicollinearity. As discussed in the previous chapter, Cronbach’s alpha was calculated for each scale to determine their internal consistencies. All of the scales had adequate to high internal consistency.

For Time 2 analysis, removal of outliers was very conservative again due to low N. One participant was removed from the analysis as the Cook’s distance was greater than 1, and the Mahalanobis’ distance was discontinuous. All other participant scores were retained, and although Mahalanobis’ distances were greater than the critical value, they were continuous with the rest of the sample.

**Development of the IIP-64-Roommate Version**

The Inventory of Interpersonal Problem – 64 Roommate Version (IIP-64-RV) was developed in an attempt to address the criticism in the interpersonal literature which questions the validity of using self-report as the sole measure of interpersonal behaviour. Indeed the downward spiral model of depression as posited by Coyne would suggest that the reaction of another person to a person’s interpersonal behaviour is an important element to assess in the genesis of a depressed mood state. Therefore, the IIP-64-RV was developed based on the 64 items of the IIP-64, with the wording changed to reflect the change in perspective. The internal consistency of the eight subscales of the IIP-64-RV were at acceptable levels, and are given in Table 4 (Chapter 2), and ranged from .74 to .89.

As the IIP-64 was administered during both data collections, it was possible to examine the test-retest reliability of the subscales for both the IIP-64 and the IIP-64 (RV). These values are given in Table 6. The test-retest reliability for both versions of the IIP-
64 would be considered moderate at best, as only the Needy subscale of the IIP-64 exceeded the $r=.7$ rule of thumb for good test-retest reliability. Possible explanations for these results include the low sample size of the Time 2 data collection, and the potentially transitory nature of interpersonal problems.

Table 6

*Test-Retest Reliability for IIP-64 and IIP-64 (Roommate Version) Subscales*

<table>
<thead>
<tr>
<th>Subscale</th>
<th>IIP-64</th>
<th>IIP-64 (RV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controlling</td>
<td>.28</td>
<td>.50</td>
</tr>
<tr>
<td>Self-Centred</td>
<td>.29</td>
<td>.46</td>
</tr>
<tr>
<td>Distant</td>
<td>.31</td>
<td>.29</td>
</tr>
<tr>
<td>Inhibited</td>
<td>.54</td>
<td>.33</td>
</tr>
<tr>
<td>Nonassertive</td>
<td>.49</td>
<td>.40</td>
</tr>
<tr>
<td>Accommodating</td>
<td>.47</td>
<td>.61</td>
</tr>
<tr>
<td>Self-Sacrificing</td>
<td>.28</td>
<td>.57</td>
</tr>
<tr>
<td>Needy</td>
<td>.52</td>
<td>.91</td>
</tr>
<tr>
<td>Total Score</td>
<td>.43</td>
<td>.52</td>
</tr>
</tbody>
</table>

*Note. N = 54.*

Intraclass correlations were also calculated to compare the ratings of individuals and their roommates on each of the IIP-64 problems subscales to assess construct validity.
of the IIP-64 Roommate Version. Intraclass correlation was used instead of Pearson’s correlation as the assumption of independent scores is violated with roommate data. Intraclass correlation is sensitive to the relatedness of the roommate data in their ratings of each other’s interpersonal problems (Kenny, Kashy, & Cook, 2006). It was noted that the relationships between the subscale scores of the participant and the roommate are weak. At the Time 1 data collection there is seemingly little relationship between how the participant rates their own interpersonal behaviour, and how the roommate rates the target on the same interpersonal problems. However, at the second data collection, there is more agreement in how the participant and the roommate rate each other’s interpersonal behaviours. The intraclass correlations for all 150 pairs from the Time 1 data are given in Table 7, as well as the Time 1 and 2 data of the 27 pairs that participated in both data collections. The correlations between the IIP-64 subscales and the IIP-64 Roommate Version subscales did not demonstrate good construct validity (i.e., all rs are < .7). One interpretation of these results is that the IIP-64 Roommate Version is not measuring interpersonal problems. However, another interpretation may be that we perceive our interpersonal behaviour differently than that of an observer. Indeed, agreement improved on the second data collection, suggesting that increased familiarity with the observed person improved rater agreement between self and other.

Unfortunately, due to the low number of roommate pairs in the Time 2 sample, inferential statistical analyses could not be conducted to determine if the differences between self- and other- behaviour ratings were significant on each of the eight IIP-64 and IIP-64-RV subscales. However, in a descriptive examination of the intraclass correlations of the subscales from the 27 roommate pairs from Time 1 and Time 2 data,
remarkable differences can be seen. There was a marked improvement in rater agreement between self and roommate in the six to eight weeks between data collections. This suggests that the better roommates knew each other, the more in agreement their ratings of interpersonal behaviours became. However, the explanation for the increased agreement is more complex than that, as further examination of the means revealed that on average, participants rated themselves lower on each of the eight interpersonal problem subscales at the second data collection. In contrast, the roommate ratings of the same interpersonal behaviours remained comparatively stable.

A 2x2 Repeated Measures ANOVA was conducted to compare the means of IIP-64 and IIP-64-RV total interpersonal behaviour problems for the 27 roommate pairs (N=54). There was a significant main effect for rater (self and roommate) on total interpersonal problems, F(1,53) = 7.36; p<.01. Thus, participants rated themselves significantly higher on the total number of interpersonal problems than did their roommate. There was also a significant main effect for time (Time 1 and Time 2), F(1,53) = 17.64, p<.001, as on average, both the targets and their roommates indicated that the targets had fewer interpersonal problems at Time 2.
### Table 7

*Intraclass Correlations Comparing the Subscales of the IIP-64 and IIP-64 (Roommate Version) for Time 1 and Time 2*

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Intraclass r</th>
<th>Intraclass r</th>
<th>Intraclass r</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Time 1 (N=150 pairs)</td>
<td>Time 1 (N=27 pairs)</td>
<td>Time 2 (N=27 pairs)</td>
</tr>
<tr>
<td>Controlling</td>
<td>.32</td>
<td>.52</td>
<td>.61</td>
</tr>
<tr>
<td>Self-Centre</td>
<td>.34</td>
<td>.32</td>
<td>.63</td>
</tr>
<tr>
<td>Distant</td>
<td>.32</td>
<td>.13</td>
<td>.63</td>
</tr>
<tr>
<td>Inhibited</td>
<td>.39</td>
<td>.08</td>
<td>.61</td>
</tr>
<tr>
<td>Nonassertive</td>
<td>.27</td>
<td>.12</td>
<td>.67</td>
</tr>
<tr>
<td>Accommodating</td>
<td>.29</td>
<td>.04</td>
<td>.43</td>
</tr>
<tr>
<td>Self-sacrificing</td>
<td>.16</td>
<td>.05</td>
<td>.26</td>
</tr>
<tr>
<td>Needy</td>
<td>.20</td>
<td>.77</td>
<td>.50</td>
</tr>
<tr>
<td>Total Score</td>
<td>.21</td>
<td>.03</td>
<td>.69</td>
</tr>
</tbody>
</table>
Table 8

*Subscale Means and Standard Deviations for the IIP-64 and IIP-64 (Roommate Version) for the Time 1 Sample*

<table>
<thead>
<tr>
<th>Subscale</th>
<th>IIP-64</th>
<th></th>
<th>IIP-64 (RV)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$</td>
<td>$SD$</td>
<td>$M$</td>
<td>$SD$</td>
</tr>
<tr>
<td>Controlling</td>
<td>6.78</td>
<td>5.18</td>
<td>6.45</td>
<td>6.31</td>
</tr>
<tr>
<td>Self-Centred</td>
<td>7.06</td>
<td>5.37</td>
<td>6.79</td>
<td>6.22</td>
</tr>
<tr>
<td>Distant</td>
<td>8.08</td>
<td>5.91</td>
<td>7.54</td>
<td>6.22</td>
</tr>
<tr>
<td>Inhibited</td>
<td>9.33</td>
<td>6.30</td>
<td>7.65</td>
<td>6.78</td>
</tr>
<tr>
<td>Nonassertive</td>
<td>10.71</td>
<td>6.19</td>
<td>9.61</td>
<td>7.03</td>
</tr>
<tr>
<td>Accommodating</td>
<td>10.93</td>
<td>5.76</td>
<td>9.16</td>
<td>6.20</td>
</tr>
<tr>
<td>Self-sacrificing</td>
<td>11.30</td>
<td>5.51</td>
<td>8.73</td>
<td>5.74</td>
</tr>
<tr>
<td>Needy</td>
<td>8.95</td>
<td>5.50</td>
<td>7.53</td>
<td>6.21</td>
</tr>
<tr>
<td>Total Score</td>
<td>73.18</td>
<td>33.75</td>
<td>63.48</td>
<td>38.00</td>
</tr>
</tbody>
</table>

*Note. N=300.*
Table 9

Subscale Means and Standard Deviations for the IIP-64 and IIP-64 (Roommate Version) for the Time 2 Sample

<table>
<thead>
<tr>
<th>Subscale</th>
<th>IIP-64 T1&lt;sup&gt;a&lt;/sup&gt;</th>
<th>IIP-64 T2&lt;sup&gt;a&lt;/sup&gt;</th>
<th>IIP-64 (RV) T1&lt;sup&gt;b&lt;/sup&gt;</th>
<th>IIP64(RV)T2&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Controlling</td>
<td>6.18</td>
<td>5.03</td>
<td>4.65</td>
<td>4.26</td>
</tr>
<tr>
<td>Self-Centred</td>
<td>6.17</td>
<td>5.26</td>
<td>4.68</td>
<td>4.33</td>
</tr>
<tr>
<td>Distant</td>
<td>8.22</td>
<td>5.94</td>
<td>7.01</td>
<td>5.79</td>
</tr>
<tr>
<td>Inhibited</td>
<td>9.53</td>
<td>6.66</td>
<td>7.61</td>
<td>6.03</td>
</tr>
<tr>
<td>Nonassertive</td>
<td>12.30</td>
<td>6.93</td>
<td>9.53</td>
<td>6.50</td>
</tr>
<tr>
<td>Accommodating</td>
<td>12.13</td>
<td>6.12</td>
<td>10.10</td>
<td>5.71</td>
</tr>
<tr>
<td>Self-sacrificing</td>
<td>12.47</td>
<td>5.52</td>
<td>9.83</td>
<td>5.49</td>
</tr>
<tr>
<td>Needy</td>
<td>11.08</td>
<td>15.90</td>
<td>6.92</td>
<td>5.19</td>
</tr>
<tr>
<td>Total Score</td>
<td>74.37</td>
<td>34.56</td>
<td>59.75</td>
<td>34.27</td>
</tr>
</tbody>
</table>

Note.  
<sup>a</sup>N=60.  
<sup>b</sup>N=54.
Description of the Research Variables

**Dependent variable.** The means and standard deviations of the depression scores as measured by the BDI-II at Time 1 and Time 2 are presented in Tables 10 and 11. The Beck Depression Inventory - II has been utilized in a variety of settings and cut-off scores have been developed to describe depression severity based on BDI-II scores (Beck, et al., 1988). At the Time 1 data collection, 11 of the participants (8 females and 3 males; 3.6%) scored in the Severe Range of depression symptoms as measured by the BDI-II (i.e., scores $\geq 30$) and as such could have met diagnostic criteria for an episode of Major Depression. An additional 27 participants scored in the Moderate Range of depression symptoms (i.e. scores $\geq 20$). These means are lower than those reported in the BDI-II manual which were based on a sample of 120 college students ($M=12.56, SD=9.93$; Beck, Steer, & Brown, 1996), however, they are comparable when compared to a study based on a large sample of Canadian undergraduate students ($M=9.11, SD=7.57$; Dozois, Dobson, Ahnberg, 1998).

At the Time 2 data collection, 3 out of the 60 participants (all females; 5.0%) scored in the Severe Range for depression symptoms, with an additional two participants (one male, one female) scoring in the Moderate Range. These findings were corroborated by the administration of the SCID Mood Module during this data collection. The five participants identified by the Beck Depression Inventory-II met criteria for experiencing a Major Depressive Episode at the time of data collection according to the SCID criteria. Of these five participants, three had a history of one or more depressive episodes. The SCID interview also identified an additional five participants who reported
having a history of Major Depression, and each reported having one previous episode of
depression. During the SCID, another participant reported a past diagnosis of Bipolar
Disorder; however, they were not experiencing symptoms at the time of data collection.

Table 10

*Descriptive Statistics for BDI-II Scores for both Men and Women at Time 1*

<table>
<thead>
<tr>
<th></th>
<th>Time 1 Depression Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Male</td>
<td>128</td>
</tr>
<tr>
<td>Female</td>
<td>172</td>
</tr>
<tr>
<td>Total</td>
<td>300</td>
</tr>
</tbody>
</table>

*Note.* Possible range = 0 - 63. Higher scores indicate more depression symptoms.

Table 11

*Descriptive Statistics of the Time 2 Sample’s BDI-II Scores for both Men and Women at Time 1 and Time 2*

<table>
<thead>
<tr>
<th></th>
<th>Time 1 Scores</th>
<th>Time 2 Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>Male</td>
<td>14</td>
<td>6.6</td>
</tr>
<tr>
<td>Female</td>
<td>46</td>
<td>13.1</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>11.6</td>
</tr>
</tbody>
</table>

*Note.* Possible range = 0 - 63. Higher scores indicate more depression symptoms.
A paired sample t-test revealed that overall, BDI-II scores were significantly lower at Time 2 indicating that depression symptoms improved over time ($t(59)=2.35, p<.05$).

**Predictor variables.** The predictor variables used in the Time 1 analysis were: Sociotropy, Autonomy, Overly-Accommodating, and Cold/Distant. The means and standard deviations of these variables are presented in Table 12; and the intercorrelations of the Time 1 predictor variables are presented in Table 13.

Evidence suggests that there is a strong interpersonal component to many personality factors. A number of studies have examined the personality constructs of sociotropy and autonomy (as well as others) with respect to the interpersonal circumplex; however, this has always been conducted broadly with respect to the hemisphere scores of Dominance and Affiliation of the interpersonal circumplex. This, unfortunately, restricts our understanding of the interpersonal behaviours unique to sociotropy and autonomy somewhat, as those behaviours which are unique to these cognitive personality variables are diluted within the broader conceptualization of the hemisphere scores. Coyne identified specific interpersonal behaviours associated with depression (e.g., reassurance-seeking), which may be associated with an increase in depressed mood state due to the reactions they elicit from others – indeed, it may be that there are specific behaviours associated with the personality vulnerabilities of sociotropy and autonomy that may serve to perpetuate a depressed mood. To that end, in order to determine the interpersonal problem subscales from the IIP-64 most associated with the personality constructs of Sociotropy and Autonomy, these constructs were plotted on the interpersonal problem circumplex according to the directions outlined by Alden and
Bieling (1996). The subscales most associated with these personality constructs were then used in the subsequent analyses. According to Alden and Bieling (1996), Sociotropy and Autonomy are plotted in the interpersonal circumplex using each scale’s correlations with the underlying dimensions of the IIP-64, Dominance and Affiliation. The correlation between Sociotropy and Autonomy with Dominance gives the position of these variables on the vertical axis of the circumplex, while their correlations with Affiliation give the position of the variables on the horizontal axis. Therefore, the correlations are Cartesian coordinates for placement of the variables in the two dimensional space (Alden & Bieling, 1996). The locations of Sociotropy and Autonomy within the interpersonal problem circumplex are shown in Figure 5. The placement of Sociotropy within the interpersonal space was within the Self-sacrificing – Nonassertive quadrant of the circumplex. Autonomy was located toward the Cold/Distant pole of the circle. These placements replicated the positioning noted by Alden and Bieling (1996). Given that in the current study, the interpersonal behaviours associated with the personality constructs of Sociotropy and Autonomy is of most interest, the IIP-64 subscales that were the most closely associated with Sociotropy and Autonomy were used in the analysis. These scales were: Autonomy-Cold/Distant and Sociotropy-Overly Accommodating. Typical interpersonal items associated with the Cold/Distant scale include: “It is hard for me to show affection to people,” or “It is hard for me to give a gift to another person.” Similarly, typical items associated with the Overly-Accommodating scale include: “It is hard for me to say ‘no’ to other people,” and “I am too easily persuaded by other people.”
Table 12

Descriptive Statistics for the Predictor Variables at Time 1

<table>
<thead>
<tr>
<th>Predictor Variables N</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>N</td>
</tr>
<tr>
<td>1. Sociotropy(^a)</td>
<td>86.6</td>
<td>14.9</td>
<td>128</td>
</tr>
<tr>
<td>2. Autonomy(^b)</td>
<td>68.3</td>
<td>11.3</td>
<td>128</td>
</tr>
<tr>
<td>3. Accommodating(^c)</td>
<td>10.3</td>
<td>5.8</td>
<td>128</td>
</tr>
<tr>
<td>5. Cold/Distant(^d)</td>
<td>9.2</td>
<td>6.2</td>
<td>128</td>
</tr>
<tr>
<td>6. Total IP Problems(^e)</td>
<td>75.0</td>
<td>37.9</td>
<td>128</td>
</tr>
</tbody>
</table>

Note. \(^a\)Possible Range = 0-144. \(^b\)Possible Range = 0-120. \(^c\)Possible Range = 0-32
\(^d\)Possible Range = 0-32 \(^e\)Possible Range = 0-256.

Table 13

Zero-order Correlations Between Predictor Variables for Time 1

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Depression (BDI-II)</td>
<td></td>
<td>.20***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Sociotropy</td>
<td>.22***</td>
<td>.30***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Autonomy</td>
<td>.29***</td>
<td>-.10*</td>
<td>.18**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Accommodating</td>
<td>.19***</td>
<td>.10*</td>
<td>.52***</td>
<td>.02</td>
<td></td>
</tr>
<tr>
<td>6. Cold/Distant</td>
<td>.25***</td>
<td>-.16**</td>
<td>.01</td>
<td>.47***</td>
<td>.32***</td>
</tr>
</tbody>
</table>

Note. N = 300. \(* p < .05. \)** \(* p < .01. \)** \(* * * p < .001. \)
Figure 5. Placement of PSI subscales of Sociotropy and Autonomy on the Inventory of Interpersonal Problem (IIP-64) Circumplex.
All Time 1 predictors were significantly associated with Time 1 BDI-II depression scores. Additionally, there were significant intercorrelations among the predictor variables. As would be expected, Autonomy was associated with Cold/Distant interpersonal behaviours. Similarly, Sociotropy was significantly correlated with Overly-Accommodating interpersonal behaviours. These behaviours are considered to be the interpersonal behaviours most associated with these cognitive personality vulnerabilities.

The Time 2 predictor variables were: Sociotropy, Autonomy, IIP-64 Overly-Accommodating, IIP-64 Distant, Interpersonal Stress and Achievement stress. Descriptive statistics and intercorrelations of these variables are presented in Tables 14 and 15, respectively. Time 1 and Time 2 BDI-II scores were strongly associated.

Autonomy scores were significantly correlated with Time 1 depression scores, but not Time 2. Neither Time 1 nor Time 2 depression scores were significantly associated with Sociotropy. It was noted that the relationship between Sociotropy and the scale of Overly-Accommodating was more highly correlated than would be desirable ($r = .69$; Table 15). According to Tabachnick and Fidell (2001), statistical problems resulting from multicollinearity and singularity arise when independent variables are correlated at, or above $r = .90$. However, they caution that researchers should “think carefully” before using two independent variables that are correlated at or above .70. While the correlation of $r = .69$ just falls under this cut-off point, it is still of some concern. With higher interrelations between variables there is a lower chance of finding statistical significance, and a valid interpretation may also be compromised (Cohen & Cohen, 1983; Tabachnick & Fidell, 2001). That is, higher correlations suggest that there is no significant distinction between concepts. In this analysis, it was decided to retain both Sociotropy and Overly-
Accommodating, as the correlation did fall just below the cut-off point, and because of the theoretical importance of these concepts with respect to this study. Additionally, the correlation between these variables was substantially lower for the Time 1 analysis ($r = .52$), which suggests that the higher correlation in the Time 2 analysis may be unique to this sub-sample.

Achievement and Interpersonal Stress were correlated with Time 2 depression scores; however, participants who reported more Cold/Distant interpersonal behaviours reported significantly more stress of both interpersonal and achievement types. This was not true for participants who reported Accommodating interpersonal behaviours. Similarly, participants who scored higher in Autonomy reported more achievement related stress, while participants scoring higher in Sociotropy did not report high levels of stress in either domain.
### Table 14

*Descriptive Statistics for the Predictor Variables for the Time 2 Sample*

<table>
<thead>
<tr>
<th></th>
<th>Time 1</th>
<th></th>
<th></th>
<th>Time 2</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. BDI-II</td>
<td>11.7</td>
<td>8.5</td>
<td>7.6</td>
<td>9.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Sociotropy</td>
<td>94.4</td>
<td>15.7</td>
<td>--</td>
<td>--</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Autonomy</td>
<td>79.7</td>
<td>10.3</td>
<td>--</td>
<td>--</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Cold/Distant</td>
<td>8.0</td>
<td>5.7</td>
<td>7.1</td>
<td>5.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Accommodating</td>
<td>12.2</td>
<td>6.2</td>
<td>10.2</td>
<td>5.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Achievement Stress</td>
<td>--</td>
<td>--</td>
<td>4.3</td>
<td>2.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Interpersonal Stress</td>
<td>--</td>
<td>--</td>
<td>5.2</td>
<td>4.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* N=60.
Table 15

Zero-order Correlations Between Predictor Variables for Time 2

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Depression T1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Depression T2</td>
<td>.58***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Gender</td>
<td>.36**</td>
<td>.19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Sociotropy</td>
<td>.23</td>
<td>.16</td>
<td>.42**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Autonomy</td>
<td>.36**</td>
<td>.22</td>
<td>.19</td>
<td>.29*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Cold/Distant (T1)</td>
<td>.32*</td>
<td>.14</td>
<td>.06</td>
<td>.31**</td>
<td>.47***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Accommodate (T1)</td>
<td>.16</td>
<td>.10</td>
<td>.24</td>
<td>.69***</td>
<td>.24</td>
<td>.48***</td>
<td></td>
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<td>8. Achieve Stress</td>
<td>.33*</td>
<td>.31*</td>
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<td>.18</td>
<td>.31*</td>
<td>.31*</td>
<td>.22</td>
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<td></td>
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<tr>
<td>9. Interpersonal Stress</td>
<td>.15</td>
<td>.30*</td>
<td>.16</td>
<td>.09</td>
<td>.22</td>
<td>.38**</td>
<td>.18</td>
<td>.43***</td>
<td></td>
</tr>
<tr>
<td>10. Total Stress</td>
<td>.25*</td>
<td>.35**</td>
<td>.17</td>
<td>.14</td>
<td>.29*</td>
<td>.42***</td>
<td>.22</td>
<td>.73***</td>
<td></td>
</tr>
</tbody>
</table>

Note. N = 60. * p < .05. ** p < .01. *** p < .001.
Hypothesis 1: The Transactional Model

The Transactional Model hypothesis was the omnibus test designed to examine the entire model to predict increases in depression scores over time when cognitive personality variables (sociotropy and autonomy), interpersonal problems (cold/distant and overly-accommodating), and stress (achievement and interpersonal) were taken into account. Therefore, the Transactional Model is represented by the 3-way interactions of these variables (i.e., personality x interpersonal problems x stress) in the regression analysis. To examine the model in the manner in which it was anticipated, 28 variables needed to be entered into a hierarchical regression (2 control; 6 main effects; 12 2-way interactions; and 8 3-way interactions). According to a priori sample size calculations, 181 participants were required for this analysis. The 60 participants who participated in the second data collection fell well short of this number, and the results of such analyses would be unstable due to insufficient power. As a result, the omnibus hypothesis which was to examine the Transactional Model as posited by Zuroff, Mongrain, and Santor (2004), could not be tested. Recognizing that the results are uninterpretable, but so that the reader may sufficiently understand the challenges of the analysis, the results of the hierarchical regression with 28 variables (with both interpersonal and achievement stress variables) are given in Table K1 in Appendix G. Note the number of significant 3-way interactions in Step 4 of the regression analysis. With such a low number of participants, these “significant” interactions are likely spurious results representing an unstable solution.
Hypothesis 2: The Congruency Hypothesis

As it was not possible to analyze the three-way interactions of the Transactional Model Hypothesis, the subsequent hypotheses were analyzed individually, rather than as post hoc analyses from the larger omnibus test. To facilitate understanding, replications of the figures presented in Chapter 1 which correspond to each hypothesis within the larger model will be provided throughout this chapter. The part of the model corresponding to the congruency hypothesis is presented in Figure 6.

Figure 6. Hypothesis 2: Beck’s (1983) cognitive model of diathesis-stress, represented by dashed lines within the Transactional model by Zuroff et al. (2004).

Adequate power remains a concern when Time 2 data are being examined. A hierarchical regression analysis was conducted to examine whether individuals who scored higher on sociotropy and autonomy, and who had experienced interpersonal and achievement stressors would have higher depression scores over time (Hypotheses 2a and 2b). The results of this regression analysis are given in Table 16. Post hoc power
calculations revealed that with 10 predictors, observed $R^2=.49$, $\alpha=.01$, and a sample size of 60, observed statistical power=.97 (Soper, 2015).

Gender and Time 1 BDI-II depression scores were entered on the first step of the regression analysis to control for these variables in the prediction of depression symptoms. The cognitive personality variables Sociotropy and Autonomy were entered on Step 2, as it was considered a priori that they would be present temporally before the stress variables of Interpersonal and Achievement Stress, which were entered on Step 3. The two-way interaction terms between the personality and stress variables were entered in the final step. After Step 4 with all predictors in the equation, $R^2=.49$, $F(10, 49) = 4.63$, $p<.001$.

The Control Block (Step 1) was significant as Time 1 depression scores were significantly correlated with participants’ scores at Time 2. The cognitive personality vulnerability Autonomy that was entered in Step 2 was significantly negatively correlated with Time 2 depression once Time 1 depression scores were controlled for. Thus, in this sample, participants who scored higher in Autonomy at Time 1 had lower depression scores at Time 2. In the third step, Achievement Stress contributed significantly to the prediction of depression scores. In the final step of the regression (Interaction Terms), the block of 2-way interactions to test the Congruency Hypothesis were not significant. An examination of the semi-partial correlations within this block showed that the interaction between sociotropy and achievement stress was significant, although uninterpretable, as the criteria of overall significance were not met. No significant results for the congruent two-way interaction terms (i.e., Sociotropy x Interpersonal Stress and Autonomy x
Achievement Stress) were found; therefore there was no support for the Congruency Hypothesis.
Table 16

*Hierarchical Regression Analysis Predicting Time 2 Depression Scores based on the Congruency Hypothesis*

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Depression Scores (BDI-II)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>r</td>
</tr>
<tr>
<td><strong>Step 1 – Control</strong></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.19</td>
</tr>
<tr>
<td>BDI-II Time 1</td>
<td>.42</td>
</tr>
<tr>
<td><strong>Step 2 – Cognitive Personality Factors</strong></td>
<td></td>
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<tr>
<td>Sociotropy</td>
<td>.19</td>
</tr>
<tr>
<td>Autonomy</td>
<td>-.19</td>
</tr>
<tr>
<td><strong>Step 3 – Stress</strong></td>
<td></td>
</tr>
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<td>Interpersonal Stress</td>
<td>.27</td>
</tr>
<tr>
<td>Achievement Stress</td>
<td>.42</td>
</tr>
<tr>
<td><strong>Step 4 – Interaction Terms</strong></td>
<td></td>
</tr>
<tr>
<td>Sociotropy X Interpersonal Stress</td>
<td>-.03</td>
</tr>
<tr>
<td>Sociotropy X Achievement Stress</td>
<td>.19</td>
</tr>
<tr>
<td>Autonomy X Interpersonal Stress</td>
<td>.09</td>
</tr>
<tr>
<td>Autonomy X Achievement Stress</td>
<td>.10</td>
</tr>
<tr>
<td><strong>Final R²</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.49</td>
</tr>
</tbody>
</table>

*Note. N = 59; *p<.05.*
Hypothesis 3: Personality Vulnerability and Negative Interpersonal Behaviours – Part I

In order to determine whether the types of interpersonal behaviours (i.e., Accommodating or Cold/Distant) reported by participants would moderate the relationship between personality vulnerabilities (i.e., Sociotropy and Autonomy) and depression scores, a hierarchical regression analysis using the Time 1 cross-sectional data was conducted. Gender was entered on the first step to control for this variable on the prediction of depression symptoms. The cognitive personality variables Sociotropy and Autonomy were entered on Step 2, as it was considered a priori that they would be present temporally before the interpersonal problem variables of Cold/Distant and Overly-Accommodating, which were entered on Step 3. The two-way interaction terms were entered in the final step. After Step 4, with all predictors in the equation, $R^2 = .23$, $F(9, 289) = 9.33$, $p<.001$. The results of this regression analysis are presented in Table 17. The portion of the Transactional model represented by this analysis is shown in Figure 7.

Figure 7. Hypothesis 3 within the Transactional model by Zuroff and colleagues (2004).
Gender and the cognitive personality variables of Sociotropy and Autonomy added to the prediction of depression symptoms; however, interpersonal problems, whether they were of a Cold/Distant nature or an Overly-Accommodating nature, did not. However, the interaction of sociotropy with both Cold/Distant interpersonal problems and Overly-Accommodating interpersonal problems did significantly increase the amount of variance accounted for by the predictor variables. Thus, the relationship between Overly-Accommodating interpersonal problems and depression ratings varied as a function of how sociotropical a participant was (Figure 8). Similarly, the relationship between Cold/Distant interpersonal problems and depression scores varied as a function of sociotropy (Figure 9). Please note that on these figures, the vertical axis scale (BDI-II scores) contained negative values, which is not a possible score on the BDI-II. J. Dawson, designer of the software program used to plot the interactions, suggested that these negative values were an artifact of the skew in the BDI-II’s sampling distribution, and that a transformation be attempted in an effort to correct the scaling problems (personal communication, July 31, 2012). No significant benefit was noted in the scale post-transformation (i.e., negative values still remained), and as it is the pattern of relationships represented by the slopes that are of interest, the original scaling and non-transformed values were retained for ease of interpretation.

The procedure for post-hoc probing of significant moderation effects as outlined by Dawson (2012) was used to determine whether the slopes of the regression lines predicting BDI-II depression scores from overly-accommodating interpersonal problems differed by whether a participant scored high or low in sociotropy (Figure 8). This
Table 17

Hierarchical Regression Analysis Predicting Time 1 Depression Scores using Time 1 Predictors

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Depression Scores (BDI-II)(^a)</th>
<th>(r)</th>
<th>(β)</th>
<th>(sr)</th>
<th>(R^2_{chg})</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1 - Control</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.04**</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td>.20</td>
<td>.20</td>
<td>.20</td>
<td>.20***</td>
</tr>
<tr>
<td><strong>Step 2 - Cognitive Personality Factors</strong></td>
<td></td>
<td>.11**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sociotropy</td>
<td></td>
<td>.22</td>
<td>.11</td>
<td>.10</td>
<td></td>
</tr>
<tr>
<td>Autonomy</td>
<td></td>
<td>.29</td>
<td>.29</td>
<td>.28</td>
<td>.28***</td>
</tr>
<tr>
<td><strong>Step 3 - Interpersonal Problems</strong></td>
<td></td>
<td>.03**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cold/Distant</td>
<td></td>
<td>.25</td>
<td>.15</td>
<td>.12</td>
<td></td>
</tr>
<tr>
<td>Overly Accommodating</td>
<td></td>
<td>.19</td>
<td>.08</td>
<td>.06</td>
<td></td>
</tr>
<tr>
<td><strong>Step 4 - Interaction Terms</strong></td>
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<td>.05**</td>
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<td></td>
<td></td>
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<td>Autonomy X Accommodating</td>
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<td>-.04</td>
<td>-.03</td>
<td>-.03</td>
<td></td>
</tr>
<tr>
<td>Autonomy X Cold/Distant</td>
<td></td>
<td>.10</td>
<td>.08</td>
<td>.07</td>
<td></td>
</tr>
<tr>
<td>Sociotropy X Accommodating</td>
<td></td>
<td>.18</td>
<td>.18</td>
<td>.16</td>
<td>.16*</td>
</tr>
<tr>
<td>Sociotropy X Cold/Distant</td>
<td></td>
<td>-.08</td>
<td>-.15</td>
<td>-.14</td>
<td></td>
</tr>
<tr>
<td>Final (R^2)</td>
<td></td>
<td>.23</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. N = 299; \(*p<.05. \**p<.01. \***p<.001.*
analysis showed that there was no relationship between participants who indicated that they did not have accommodating interpersonal problems and depression scores when participants were low in sociotropy \( (t(299) = .112, \ p = \text{ns}) \). However, when participants scored higher on sociotropy, participants who indicated that they were also high in overly-accommodating behaviours were associated with higher depression scores \( (t(299) = 2.61, \ p < .01) \). Thus, the more sociotropic a person is, and the more likely they are to accommodate the needs of others, the more depressed they feel.

Dawson’s (2012) post hoc procedure was used again to determine whether the slopes of the regression lines predicting BDI-II depression scores from cold/distant interpersonal problems differed by whether a participant scored high or low in sociotropy (Figure 9). This analysis revealed that there was a relationship between cold/distant interpersonal problems and depression scores when participants scored high or low in sociotropy. Thus, the depression scores of individuals who indicated that they were high in sociotropy were significantly higher when they also rated themselves high in cold/distant behaviours \( (t(299) = 3.71, \ p < .001) \). For those participants who rated themselves low in sociotropy, higher ratings of cold/distant interpersonal behaviours were also associated with higher depression scores \( (t(299) = 5.52, \ p < .001) \). It would seem that if you distance yourself from others, your mood will worsen – and this will occur more dramatically in persons who are lower in sociotropy.
Figure 8. Regression lines for the relationship between Overly-Accommodating interpersonal problems and reported depression scores as moderated by Sociotropy.

Figure 9. Regression lines for the relationship between Cold/Distant interpersonal problems and reported depression scores as moderated by Sociotropy.
In order to determine whether similar patterns could be observed cross-sectionally in the Time 2 sample, the regression analysis was re-run using the Time 2 data. Variables were entered in the same order as the Time 1 analysis, and after Step 4, with all predictors in the equation, $R^2 = .34$, $F(9, 50) = 2.90$, $p < .01$. The results of this regression analysis are given in Table 18. Again, there is concern with adequate power given the small sample size; however, post hoc power calculations revealed that with 9 predictors, observed $R^2 = .34$, $\alpha = .01$, and a sample size of 60, observed statistical power=.88 (Soper, 2015).

In contrast to the Time 1 analysis, gender and the cognitive personality variables of Sociotropy and Autonomy did not add to the prediction of depression symptoms; however, Cold/Distant interpersonal problems did significantly increase the amount of variance accounted for by the predictor variables. The interaction step also significantly increased the amount of variance accounted for in depression; however, none of the interaction terms individually accounted for variability in depression scores, suggesting that none of the interaction terms are making a significant unique contribution. Examination of the semi-partial correlations in Table 18 suggests that it is likely the interaction of Autonomy with both Overly-Accommodating and Cold/Distant interpersonal problems that are causing the overall interaction step to show a significant effect. It is interesting that in the Time 1 data, it was Sociotropy that interacted significantly with interpersonal problems to predict depression scores, while at Time 2 Autonomy is the cognitive personality vulnerability that may be interacting with the interpersonal problem styles. These interactions would be interesting to analyze, as Time
Autonomy appears to be protective for depressed mood at Time 2, and understanding how this would interact with interpersonal behaviours could be helpful.

In order to determine if these changes in depression scores could be observed longitudinally, the regression analysis was rerun controlling for Time 1 depression scores, and using Time 1 measures of interpersonal behaviour. With the exception of Time 1 depression, no other predictors or interaction terms contributed significantly to the prediction of depression scores at Time 2, $R^2=.38$, $F(10, 48)=2.98$, $p<.01$.

In order to investigate whether interpersonal behaviours as rated by another person (i.e., the participant’s roommate) were predictive of depressed mood, a hierarchical regression analysis was again conducted, this time using the IIP-64-RV roommate ratings of the interpersonal problem behaviours of Cold/Distant and Overly-Accommodating. Again, Gender was entered on the first step as a control variable, and the cognitive personality variables of Sociotropy and Autonomy were entered on the second step. Roommate ratings of Cold/Distant and Overly-Accommodating were entered on Step 3, and the two-way interaction terms were entered on the final step. After Step 4 with all predictors in the equation, $R^2=.17$, $F(10, 289)=5.83$, ns. The results of this regression analysis are presented in Table 19. The roommate ratings of the interpersonal behaviours Cold/Distant and Overly-Accommodating did not add to the prediction of depression symptoms, and neither did the interaction terms.
Table 18

*Hierarchical Regression Analysis Predicting Time 2 Depression Scores using Time 2 Predictors*

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Depression Scores (BDI-II)(^a)</th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(r)</td>
<td>(\beta)</td>
<td>(sr)</td>
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<td>.04</td>
<td>.19</td>
<td>.19</td>
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<tr>
<td>Gender</td>
<td></td>
<td>.19</td>
<td>.19</td>
<td>.19</td>
</tr>
<tr>
<td><strong>Step 2 - Cognitive Personality Factors</strong></td>
<td></td>
<td>.07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sociotropy</td>
<td></td>
<td>.19</td>
<td>.17</td>
<td>.16</td>
</tr>
<tr>
<td>Autonomy</td>
<td></td>
<td>-.19</td>
<td>-.23</td>
<td>-.23</td>
</tr>
<tr>
<td><strong>Step 3 - Interpersonal Problems</strong></td>
<td></td>
<td>.10(^*)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cold/Distant</td>
<td></td>
<td>.29</td>
<td>.33</td>
<td>.29(^*)</td>
</tr>
<tr>
<td>Overly Accommodating</td>
<td></td>
<td>.17</td>
<td>.01</td>
<td>.01</td>
</tr>
<tr>
<td><strong>Step 4 - Interaction Terms</strong></td>
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<td>.14(^*)</td>
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<td>Autonomy X Accommodating</td>
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<td>Autonomy X Cold/Distant</td>
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<td>.18</td>
</tr>
<tr>
<td>Sociotropy X Accommodating</td>
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<td>-.02</td>
<td>-.08</td>
<td>-.06</td>
</tr>
<tr>
<td>Sociotropy X Cold/Distant</td>
<td></td>
<td>-.09</td>
<td>.07</td>
<td>-.05</td>
</tr>
<tr>
<td><strong>Final (R^2)</strong></td>
<td></td>
<td>.34</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. \(n = 60\); \(^*p<.05.\)*
Table 19

Hierarchical Regression Analysis Predicting Time 1 Depression Scores using Time 1 Predictors with Interpersonal Behaviours Rated by Roommates (IIP-64:Roommate Version)

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Depression Scores (BDI-II)(^a)</th>
<th>r</th>
<th>β</th>
<th>sr</th>
<th>(R^{2chg})</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1 - Control</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.04**</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td>.20</td>
<td>.20</td>
<td>.20</td>
<td><strong>.000</strong></td>
</tr>
<tr>
<td><strong>Step 2 - Cognitive Personality Factors</strong></td>
<td></td>
<td>.22</td>
<td>.11</td>
<td>.10</td>
<td><strong>.000</strong></td>
</tr>
<tr>
<td>Sociotropy</td>
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<td>.29</td>
<td>.28</td>
<td><strong>.000</strong></td>
</tr>
<tr>
<td>Autonomy</td>
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<td>.29</td>
<td>.28</td>
<td><strong>.000</strong></td>
</tr>
<tr>
<td><strong>Step 3 - Interpersonal Problems rated by Roommate</strong></td>
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<td>.00</td>
<td></td>
<td></td>
<td>.11**</td>
</tr>
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<td>Cold/Distant</td>
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<td>-.01</td>
<td>-.06</td>
<td>-.05</td>
<td></td>
</tr>
<tr>
<td>Overly Accomodating</td>
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<td>.01</td>
<td>.02</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td><strong>Step 4 - Interaction Terms</strong></td>
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<td></td>
<td></td>
<td>.02</td>
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<td>.00</td>
<td>-.00</td>
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</tr>
<tr>
<td>Autonomy X Cold/Distant RV</td>
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<td>-.06</td>
<td>-.09</td>
<td>-.08</td>
<td></td>
</tr>
<tr>
<td>Sociotropy X Accomodating RV</td>
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<td>.02</td>
<td>.07</td>
<td>.07</td>
<td></td>
</tr>
<tr>
<td>Sociotropy X Cold/Distant RV</td>
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<td>-.08</td>
<td>-.09</td>
<td>-.08</td>
<td></td>
</tr>
<tr>
<td><strong>Final R(^2)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.17</td>
</tr>
</tbody>
</table>

*Note. n = 299; *p<.05. **p<.01. ***p<.001*
Hypothesis 4: Personality Vulnerability and Negative Interpersonal Problem Behaviours – Part II

The second part of the interpersonal problem behaviour cycle has to do with the assumption that persons with a cognitive personality vulnerability and higher depression scores will exhibit an increase in interpersonal problem behaviours, as problematic interpersonal behaviours can escalate in the downward spiral of a depressed mood. Thus, it was hypothesized that persons high in both sociotropy and depression would demonstrate higher levels of overly-accommodating behaviours and that this would be particularly true over time. Similarly, persons who scored higher on both autonomy and depression would demonstrate more cold/distant interpersonal behaviours, and again this would be true over time. This is reminiscent of Coyne’s reassurance-seeking in that those who had high scores on both of these variables may demonstrate more of the negative interpersonal behaviours associated with these personality vulnerabilities, in an attempt to engage (or distance themselves) with those around them. This relationship is demonstrated in Figure 10.

Figure 10. Hypothesis 4 within the Transactional model by Zuroff and colleagues (2004).
As shown in Tables 20 and 21, with a Bonferroni corrected alpha level of .01, no significant results were found for the cognitive personality vulnerabilities of sociotropy and autonomy and depression and their interactions over and above the control variables in the prediction of either Overly-Accommodating ($R^2 = .35$, $F(7,52) = 4.04$, $p<.01$), or Cold/Distant behaviours over time ($R^2 = 2.52$, $F(7,52) = 2.52$, $p<.05$). Post hoc power calculations using a method designed by Soper (2015) revealed observed statistical power values of .94 and .79, respectively.

Similarly, no significant interactions were found when the hierarchical regression analyses were conducted with the roommate-rated Overly-Accommodating and Cold/Distant scales (Tables 22 and 23). As this is a new data set using roommate responses, the Bonferroni corrected alpha was set at $\alpha = .05/2$, or .025 for overall significance. Results for the roommate rated Overly-Accommodating behaviours were, $R^2 = .50$ $F(7,46) = 6.6$ $p<.001$, and for roommate rated Cold/Distant behaviours were $R^2 = .28$ $F(7,46) = 2.56$, $p<.05$. Again, post hoc power calculations revealed statistical power values of .99 and .88 respectively (Soper, 2015).

In conclusion, no significant interaction effects were found in the prediction of problematic interpersonal behaviours. This was found to be the case when the raters of the interpersonal behaviours were the participants themselves or their roommates. Therefore Hypothesis 4 was not supported, as there was no evidence of depression and cognitive personality vulnerabilities having an impact on interpersonal behaviours over time.
Table 20

*Hierarchical Regression Analysis Predicting Time 2 Overly-Accommodating Interpersonal Behaviour Problems Using Time 1 Predictors*

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Depression Scores (BDI-II)²</th>
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<th>β</th>
<th>sr</th>
<th>R²chg</th>
</tr>
</thead>
<tbody>
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<td><strong>Step 1 - Control</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td>.30***</td>
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<td>.42</td>
<td>.42***</td>
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<td><strong>Step 2 - Cognitive Personality Factors</strong></td>
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</tr>
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<td>.05</td>
</tr>
<tr>
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<td>.21</td>
<td>.25</td>
<td></td>
</tr>
<tr>
<td><strong>Step 3 – Depression Scores</strong></td>
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<td></td>
<td></td>
<td></td>
<td>.00</td>
</tr>
<tr>
<td>BDI-II</td>
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<td>.23</td>
<td>.01</td>
<td>.00</td>
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</tr>
<tr>
<td><strong>Step 4 - Interaction Terms</strong></td>
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<td></td>
<td></td>
<td></td>
<td>.00</td>
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*Note. n = 60; *p<.05. **p<.01. ***p<.001*
Table 21

*Hierarchical Regression Analysis Predicting Time 2 Cold/Distant Interpersonal Behaviour Problems Using Time 1 Predictors*

<table>
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<tr>
<th>Predictors</th>
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<th>(\beta)</th>
<th>(sr)</th>
<th>(R^2_{chg})</th>
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<td>.31</td>
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<tr>
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*Note. n = 60; *p < .05.*
Table 22

*Hierarchical Regression Analysis Predicting Time 2 Roommate Rated Overly-Accommodating Interpersonal Behaviour Problems Using Time 1 Predictors*

<table>
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<td>Autonomy</td>
<td>.15</td>
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<td><strong>Step 3 – Depression Scores</strong></td>
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<tr>
<td>BDI-II</td>
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<td><strong>Step 4 - Interaction Terms</strong></td>
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<td>Autonomy X BDI-II</td>
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<tr>
<td><strong>Final $R^2$</strong></td>
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*Note. n = 60; *p<.05. **p<.01. ***p<.001*
Table 23

*Hierarchical Regression Analysis Predicting Time 2 Roommate Rated Cold/Distant Interpersonal Behaviour Problems Using Time 1 Predictors*

<table>
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<th>$sr$</th>
<th>$R^2_{chg}$</th>
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<td>Gender</td>
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<td>Time 1 Cold/Distant</td>
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<td>.31</td>
<td>.31*</td>
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<tr>
<td><strong>Step 2 - Cognitive Personality Factors</strong></td>
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<td>.20</td>
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<tr>
<td>Autonomy</td>
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<td>.03</td>
<td>.03</td>
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<td><strong>Step 3 – Depression Scores</strong></td>
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<td>BDI-II</td>
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<td><strong>Step 4 - Interaction Terms</strong></td>
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</tr>
<tr>
<td>Autonomy X BDI-II</td>
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<tr>
<td>Final $R^2$</td>
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<td>.28</td>
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</tbody>
</table>

*Note. n = 60; *p<.05.*
Hypothesis 5: Stress Generation Hypothesis – Part I

It was hypothesized that participants who were more cognitively vulnerable (i.e., high in Sociotropy or Autonomy) would report more dependent stressors (i.e., stressful events which in some part were due to the actions of the participant). Recall that dependence scores were tabulated by raters based on the life event interview data. Examination of the bivariate correlations presented in Table 24 indicates that the expected relationships did not exist in this sample. There was no relationship between Sociotropy or Autonomy and the number of interpersonal or achievement stress events a participant experienced. Neither sociotropy nor autonomy correlated with dependence. However, the more interpersonal stress or achievement stress events a participant experienced, the more likely the participant was to have played a role in generating some of that stress. Interestingly, there was a relationship between a participant’s own assessment of their Cold/Distant interpersonal behaviour and the number of interpersonal and achievement stress events they reported, as well as how much influence they had on those events. These relationships did not exist for participants who rated themselves as having Overly-Accommodating interpersonal behaviours. There was no relationship between the stress variables and the interpersonal behaviours as rated by the roommate, with one exception. Participants who were rated as being Overly-Accommodating by their roommates were also more likely to be seen as having some influence in the number of stressful events they experienced.

In addition to describing each of the stressful events during the life event interview, the participants were asked to rate how in control they felt during the event (1=completely under control; 5=completely out of control) and how they perceived the
event (i.e., 1=very good; to 6=very bad). They also responded as to whether they felt that the event had a long lasting impact on them. The results of these stress variables were correlated with the personality and interpersonal variables of interest in the study, and the results are also presented in Table 24. Participants who rated themselves more highly in Cold-Distant interpersonal behaviours were more likely to feel that they had less control in their stressful situations, perceived the stressors more negatively, and felt that the stressors had a longer lasting impact. Again, these relationships did not exist among those participants who rated themselves as having an Overly-Accommodating interpersonal style. For these Overly-Accommodating participants, none of the stress variables correlated significantly with their interpersonal behaviour. How another person (i.e., the roommate) perceived the participant’s behaviour also did not correlate with any of the stress variables of interest for either Cold/Distant or Overly-Accommodating interpersonal behaviours.
**Table 24**  
*Zero-order Correlations Examining Relationships among Stress Variables*

<table>
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<tr>
<th></th>
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<tr>
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<td>.97***</td>
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<td>.28*</td>
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<td>.10</td>
<td>.37**</td>
<td>.71***</td>
<td>.63***</td>
<td>.65***</td>
<td>.71***</td>
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*Note. N=60. *p<.05. **p<.01. ***p<.001.*
Hypothesis 6: Stress Generation Hypothesis – Part II

When the stress generation hypothesis was originally proposed, it limited its scope to the role of the cognitive personality vulnerabilities of sociotropy and autonomy in the generation of stressful events (e.g., Hammen, 2001). However, in Zuroff et al.’s (2004; Figure 1) Transactional Model, the idea of stress generation was expanded from personality vulnerabilities to also include interpersonal behaviours, which may contribute to the generation of stressful events (Eberhart, 2008). The stress generation hypothesis within the context of the Transactional model is presented in Figure 11.

![Figure 11](image)

*Figure 11.* The stress generation model (represented with dashed lines) within the Transactional model by Zuroff and colleagues (2004).
In the present study, the role of the personality vulnerabilities of sociotropy and autonomy, as well as the interpersonal problems associated with those vulnerabilities (i.e., Cold/Distant and Overly-Accommodating), were explored within the context of the stress generation hypothesis. As the type of stress generated (i.e., achievement or interpersonal) is of particular interest, a multivariate multiple regression was conducted in an effort to predict the possible influence of both the personality vulnerability and/or the interpersonal style on the type of stress created. The Bonferroni corrected alpha was set at .05 for this analysis. The results of the multivariate multiple regression were significant, Wilk’s $\Lambda = .84$, $F(2,54) = 5.05$, $p<.01$. Follow up multiple regression analyses for each of the dependent variables (Table 25) revealed that participants rating themselves as having Cold/Distant interpersonal behaviours at Time 1 experienced more stress events at Time 2 in both achievement and interpersonal domains. This was not true for participants who reported Overly-Accommodating interpersonal behaviours. No relationship was noted between the cognitive personality vulnerabilities of sociotropy or autonomy in the prediction of the type of stressors reported. This analysis suggests that interpersonal behaviours have more of a role to play in generating stressful life events than do cognitive personality vulnerabilities, and that Cold/Distant interpersonal behaviours have a significant role to play in the generation of stressful life events in both interpersonal and achievement domains.
Table 25

*Post Hoc Multiple Regression Analyses Predicting Interpersonal and Achievement Stress Events with Interpersonal Problems and Cognitive Personality Vulnerabilities*

<table>
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<th></th>
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<td><strong>Achievement Stress Events</strong></td>
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<td>Cold/Distant</td>
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<td>.37</td>
<td>.33*</td>
<td></td>
</tr>
</tbody>
</table>

Note. $N = 60$. *$p<.05$. 
A Qualitative Analysis of Interpersonal Behaviour and Stress Generation

From the above analysis, it is clear that interpersonal behaviours have a role to play in the generation of stress. However, the relationship between interpersonal behaviour and stress generation has not been well researched, and as such, a deeper exploration of the topic is warranted. In the quantitative data analysis, only two of the eight scales of the IIP-64 were used (i.e., Overly-Accommodating and Cold/Distant) as these scales represented those behaviours most closely associated with Sociotropy and Autonomy. However, interpersonal behaviour is much more nuanced than these two scales. Recall that the circumplex model organizes interpersonal behaviour along two dimensions of interpersonal relations (Wiggins, 1996). One dimension, variously referred to as Affiliation, Friendliness, Warmth, or Love refers to the drive for communion between two people. The second dimension has been variously described as Dominance, Control, Status, or Power, and is defined as a deep conviction that one is worthy of respect from others (Lackner & Gurtman, 2005). The model posits that the variety of interpersonal behaviours common to the human experience is a result of the blending of these two basic factors, which form a two-dimensional circular model, or circumplex.

Alden, Wiggins, and Pincus (1990) created a measure of interpersonal problems based on the theory of the interpersonal circumplex, called the Inventory of Interpersonal Problems (IIP). This measure has since undergone a number of revisions; the most current iteration being the IIP-64 used in this study (Horowitz, et al., 2000). The octant names of the IIP-64 reflect the potentially problematic nature of the interpersonal behaviours they describe, as it is a measure designed to assist with diagnoses. Therefore, persons with higher scores on these octant scales would manifest an excess of those
particular types of interpersonal behaviours, and the octant scale names are a reflection of these extreme scores (Horowitz, et al., 2000). Based on the interpersonal theory of the circumplex, it is understood that a person’s interpersonal behaviour may also be described more broadly in terms of a hemisphere score (i.e., affiliative – hostile; dominant – submissive) or a quadrant score. The octants and quadrants of the interpersonal circumplex are shown in Figure 12.

During the administration of the Life Events and Difficulties Schedule (LEDS; Brown & Harris, 1978), the responses to the items that the participant indicated were stressful were carefully noted by the interviewer. The responses were generally brief due to the large number of stressful items that were queried; however, they did provide more insights with respect to the participant’s experience with a particular stressor than a checklist alone. Using the overall scores for Dominance and Affiliation from the IIP-6, it was possible to sort the responses for an individual’s stress interview according to the interpersonal quadrant to which that person belonged. Thus, an aggregation of all the stressors that belonged to a particular interpersonal quadrant was created, which allowed for a qualitative analysis of the experience of the stress by interpersonal type. This allowed for comparisons of the types of stress each interpersonal quadrant experienced, allowing for a richer understanding of the various stressors that were both common and unique to each quadrant.
Using the Time 2 Dominance and Affiliation scores from the IIP-64, all 60 Time 2 participants were plotted within the interpersonal circumplex (Horowitz, et al., 2000; Figure 12). NVivo software was then used to group item responses from the semi-structured stress interviews according to each participant’s interpersonal quadrant (LEDS; Brown & Harris, 1978). Therefore, every response from the stress interview was sorted by interpersonal quadrant, which allowed for a qualitative thematic analysis of the types of stressors experienced by the participants in each quadrant. This process of analysis occurred separately for achievement and interpersonal stress. While many types of stressors were common to all participants – particularly as all participants were university students experiencing common academic challenges – there were also unique associations of stress types within each of the four quadrants. This is interesting in and of itself as despite the similarities of a common experience, it becomes clear from the participants’ responses that stress is perceived and experienced differently. Overarching patterns of experience emerged, and these patterns are revealed by interpersonal type. A summary of the types of stressors experienced by the participants is given in Tables 26 (Interpersonal Stress) and 27 (Achievement Stress).
Figure 13. Scatterplot of the 60 Time 2 participants based on their Time 2 Dominance and Affiliation scores on the IIP-64.
Table 26

*Comparison of the Four Interpersonal Quadrants on Interpersonal Stress Items*

<table>
<thead>
<tr>
<th>Hostile-Submissive</th>
<th>Friendly-Dominant</th>
<th>Hostile-Dominant</th>
<th>Friendly-Submissive</th>
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</thead>
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<td>Roommate Problems</td>
<td>Roommate Problems</td>
</tr>
<tr>
<td>Significant Other Problems</td>
<td>Significant Other Problems</td>
<td>Significant Other Problems</td>
<td>Significant Other Problems</td>
</tr>
<tr>
<td>Worry about Others</td>
<td>Worry about Others</td>
<td>Worry about Others</td>
<td>Worry about Others</td>
</tr>
<tr>
<td>Problems with Friends</td>
<td>Problems with Friends</td>
<td>Problems with Friends</td>
<td>Problems with Friends</td>
</tr>
<tr>
<td>Missing Friends</td>
<td>Did Not Want To Do Something</td>
<td>Problems with Parents</td>
<td>Problems with Parents</td>
</tr>
<tr>
<td>Did Not Want To Do Something</td>
<td>Problems from Drinking</td>
<td>Problems from Drinking</td>
<td>Problems from Drinking</td>
</tr>
<tr>
<td>Problems with Parents</td>
<td>Problems from Drinking</td>
<td>Problems from Drinking</td>
<td>Problems from Drinking</td>
</tr>
<tr>
<td>Problems with Friends</td>
<td>Problems from Drinking</td>
<td>Problems from Drinking</td>
<td>Problems from Drinking</td>
</tr>
<tr>
<td>Missing Friends</td>
<td>Problems from Drinking</td>
<td>Problems from Drinking</td>
<td>Problems from Drinking</td>
</tr>
<tr>
<td>Wanting a Significant Other</td>
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<td>Death of Friend or Family Member</td>
<td>Death of Friend or Family Member</td>
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<td>Death of Pet</td>
<td>Death of Pet</td>
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<td>Lying</td>
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<td>Residence Life Hassles</td>
<td>Residence Life Hassles</td>
</tr>
<tr>
<td>Embarrassed</td>
<td>Residence Life Hassles</td>
<td>Residence Life Hassles</td>
<td>Residence Life Hassles</td>
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<tr>
<td>Difficult Social Interactions</td>
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<td>Safety Fears</td>
<td>Safety Fears</td>
<td>Safety Fears</td>
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<tr>
<td>Interpersonally Overwhelmed</td>
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</tr>
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</table>
Table 27

*Comparison of the Four Interpersonal Quadrants on Achievement Stress Items*

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<tr>
<th>Hostile-Submissive</th>
<th>Friendly-Dominant</th>
<th>Hostile-Dominant</th>
<th>Friendly-Submissive</th>
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<tr>
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</tr>
<tr>
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<td>Boring/Aversive Classes or Tasks</td>
<td>Boring/Aversive Classes or Tasks</td>
<td>Boring/Aversive Classes or Tasks</td>
</tr>
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<td>Illness or Injury</td>
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<tr>
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<td>Bureaucracy/Technology Hassles</td>
<td>Bureaucracy/Technology Hassles</td>
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<tr>
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<td>Overwhelmed</td>
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<td>Dislike Job</td>
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<td>Sick from Stress</td>
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<td>Roommate prevents studying</td>
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</table>
Interpersonal stress within the IIP-64 circumplex.

When interpersonal stressors were examined according to the interpersonal quadrants of the IIP-64, participants from all four quadrants reported the common stressors of: having roommate problems; having problems with friends; having problems with their significant other; and having worries about other people in their lives (e.g., friends and family members). Participants reporting these types of stress often spoke of them similarly across the interpersonal types. For example, participants from across the four quadrants who mentioned problems with a romantic partner spoke of the difficulties with the strain of long distance relationships and scheduling time for each other (e.g., “…we see each other every second week; it’s hard to be close…”). Similarly, participants who spoke of their worry about others voiced concerns regarding the illness, mental illness, unemployment, and drug use of their friends and family members (e.g., “My dad got laid off at the mill, and my mom is on disability, they are super stressed about money,” or “My brother is addicted to cocaine, has money problems and a son, he got in with the wrong crowd . . . my family gave him a job . . . we’ll see…”).

The stress stories from participants who indicated that they had problems with their friends and roommates, however, differed with respect to their content across the four quadrants. For example, responses from participants who figured in the bottom right quadrant representing those high on affiliation, but low on dominance (i.e., Friendly-Submissive, see Figure 12), reported problems with their roommates such as, “My roommate has her boyfriend over all the time, I feel like I am intruding in my own space. I do nothing, I don’t want to make a deal,” or, “My roommate has friends over, playing
music. She’s hyper and it’s hard to say anything.” These participants are critiquing their roommates and their behaviours; however, the discomfort participants experience seems to come from their own difficulty in addressing the problem behaviour with their roommate. This is different from the reported roommate problems from participants in the bottom left quadrant of the interpersonal circumplex. This quadrant represents the cold-nonassertive (hostile-submissive) quadrant (Figure 12) and participants’ concerns sounded like this: “My roommate drinks a lot, puking a lot, pissed himself, he’s an idiot, lost his virginity, doesn’t remember, a bad scene. I totally lost respect for him.” or “My roommate is always bringing guys over for sex, I don’t know why. I never know what I am going to walk in on . . . she is getting a bad reputation.” The criticism of the roommate’s behaviour is still given; however, these participants are disparaging of the behaviour and reflect on how badly it makes their roommate appear, rather than their own discomfort with the situation. Indeed, although both quadrants represent the nonassertive hemisphere of the circumplex, those on the left side of the axis (cold) want nothing to do with the roommate; while those on the right (affiliative) cannot bring themselves to complain for fear of offending their roommates.

This interpersonal pattern was repeated for these participants when they spoke of having stressful relationships with their friends (but not roommates). Similarly, the stories of participants who reported problems with their friends varied according to their interpersonal type. Participants who had an accommodating interpersonal style (bottom right quadrant; friendly-submissive) spoke of difficulties such as: “Hanging out with a friend who annoys me, I don’t have the heart to tell them to go…” or “My friend is a really intrusive and pushy tiresome person . . .,” and, “I have a very strong-willed friend
who doesn’t compromise or work at getting along, I get bulldozed.” In comparison, participants who were part of the lower left (cold-nonassertive; hostile submissive) quadrant spoke of feeling blamed and shunned by their friends. “I tried to talk to her about her boyfriend who treats her bad and she got mad at me…now we don’t talk much,” or “My friends are taking sides in the argument and I am being shunned, people don’t want to talk to me…” and also, “Friends are blaming me for the fights…” Both quadrants reported difficulties with their friends, and difficulty asserting their needs, but each deals with it differently. The friendly-submissive participants feel exploited and walked over, but remained friendly to avoid conflict, while the hostile-submissive participants feel bitter and victimized and withdraw.

While there were some similarities across the four quadrants with respect to the stress experience of having problems with a romantic partner (e.g., managing a long-distance relationship), there were also emerging patterns of difference. Those participants who fell within the hostile-submissive quadrant complained of feeling controlled by their partners, and often attributed the relationship problems to the partner’s jealousy (e.g., “…she’s really demanding, always wanting more from me, it’s supposedly all my fault because I am here at school, she’s really jealous”). Participants in the friendly-submissive quadrant expressed feelings of frustration, jealousy, and feeling blamed by their partners for the problems in their relationships (e.g. “My girlfriend is always blaming me when we are fighting because I am here at school and she wants me to come home, nothing ever changes”). In contrast, participants in the friendly-dominant quadrant seemed to be better able to come to terms with arguments within their relationships, and often seemed to feel
that the problems were resolved (e.g. “there was on and off fighting a lot because there was an issue between her and one of my friends, we’re okay now though”).

With the exception of the participants in the top left (hostile-dominant) quadrant, all participants reported feeling stress as a result of having to do something they did not want to do. Responses included experiences such as: “I had to get a pap smear, it was very uncomfortable for me, I was embarrassed.” Interestingly, only participants whose interpersonal style was in the bottom left quadrant (low on dominance and affiliation; hostile-submissive) reported that they experienced stress in response to doing something for someone else: “I tutored a friend in math, I felt I had to because she is a friend” or “Hanging out with my boyfriend’s drunk friends, he asks me to and I feel obligated.” Feeling obligated to do something for another person that they did not want to do was unique to participants in this quadrant. While it is possible that these participants were the only ones of the 60 who did something for another person, it is more likely that they found the experience more aversive, and the experience of engaging in such an activity in the previous 6-weeks caused them enough distress to recall it during a stress interview. This is the same quadrant in which participants reported feeling blamed and victimized in their troubled interactions with friends, roommates, and significant others. It appears to represent an interpersonal way of being in which a person feels hard done to and taken advantage of. Interestingly, participants whose interpersonal style was within the top left (cold-dominant; self-centred) quadrant did not report having to do anything they did not want to – for themselves or another person.

Not only did participants figuring in the top left quadrant (cold-dominant; self-centred) not report being bothered by having to do something that they did not want to,
but the absence of reported problems with family members, particularly parents, was notable. After all, arguments with parents about grades, finances, behaviours, academic choices, significant others, etc., were common themes in the other three quadrants, and one wonders if the more self-centred (hostile-dominant) interpersonal style results in fewer interactions, and therefore fewer sources of conflict for these participants.

Interestingly, once again the tone of the descriptions of arguments with family members from participants in the lower left quadrant (hostile-submissive) appears as if these participants feel particularly criticized or put upon, and that this is a long standing way of interacting with their families: “My mom is critical of my boyfriend, she doesn’t think he is good enough for me, I defend him and we argue…” and, “At home I can’t close the door, she reads my mail, and listens to my calls. My mom is really intrusive, I have given up, it has always been that way,” or finally, “My dad is always very critical of me, and we avoid each other. He had a bad childhood and he takes it out on me….”

Family arguments with participants in the Dominant-Friendly (top right) quadrant sound much more situationally specific and less entrenched: “My mom is really pressuring me to stay in school, I want to quit and join the military, we are still talking about it,” and “I had a big fight with my mom and threatened not to come home. She called me an alcoholic, but she has never been to university! We made up and it is better now.”

Family arguments with participants in the lower right hand quadrant (friendly-submissive) had a quality of feeling frustrated with the pressures of having to please family members: “I want to drop out of university, but my uncle is a prof in the faculty. There is lots of family pressure to stay, and I’m still here but I’m upset and irritable. I have to work all the time,” and, “I had a fight with my mom on the phone about coming home for summer; she wants me
home, but I don’t want to go…” and finally, “I have a false forced relationship with my mom. She didn’t want to have kids, and it makes me sad and upset after I get off the phone with her.”

Problems that resulted from drinking alcohol excessively were a prevalent theme throughout all quadrants with the notable exception of those in the more socially inhibited, hostile-submissive quadrant. Among the other three quadrants, there were stories of the ill-effects of drinking to excess, for example: “Getting really drunk and forgetting parts of the night, I’ve been partying a lot I guess, I get tired and hung over.” Interestingly, participants who were higher in affiliation (i.e., the right hand side of the circumplex), expressed guilt or embarrassment about their behaviour. For example, “I drank too much at a party and got sick, I had to be looked after, it was very embarrassing – really unlike me to do that,” or “I was forgetting parts of the night, I regret my behaviour. I don’t know why I think it will make me feel better, I feel guilty and foolish after,” and “I went on drinking binges, one was nine days. It’s a last hurrah before the kid is born, I’m an idiot….”

Lying, particularly to parents, was a stressor unique to those participants in the cold-nonassertive quadrant (hostile submissive; bottom left). For instance, “I lie to my mom about school work and having sex with my girlfriend, she lectures me all the time,” and, “I lie to mom about how much money is in my account or the cost of school, she freaks about money.” Another type of stressor unique to this quadrant was feeling embarrassed by the actions of others. For example, “My mom embellishes what I say to her friends because she likes to tell good stories, it’s embarrassing,” or “My uncle was drunk and insulted my boyfriend’s aunt who got caught shoplifting. Oh! They are all so
crazy.” Again, these responses suggest an interpersonal type who experiences stress as a result of feeling particularly sensitive about the opinions or impact of others. Their use of lying is a strategy that seems to allow them to avoid interacting and confronting others about difficult subjects.

Other emerging patterns of responses according to the hemispheres of the IIP-64 were also noted. Participants whose interpersonal style placed them on the bottom of the interpersonal circumplex (submissive) endorsed, as a stressor, feeling self-conscious about their appearance: “I wear long pants and no belly shirts; I am self-conscious of my stretch marks...,” and “I won’t wear what I want because I think I am too fat, I feel bad about myself and sometimes I won’t go out.” Participants whose interpersonal style fell on the right hand side of the circumplex (affiliation hemisphere) found aspects of residential life a hassle. Here are two examples of this type of aggravation: “I have to be with people in the house that drive me crazy...” and “People in rez [residence] waking me when I try to sleep in, there is loud music or people talking loud in front of my door...”

Participants whose interpersonal style was high in both affiliation and dominance (top right quadrant; dominant-friendly), did not report missing friends as a stressor. This contrasted with participants from all other quadrants who did report this as a stressor: “My friend moved to another city to study. I won’t see him...I’m sad, he’s been my best friend since Grade 3,” and “I’m still missing my friend from when I moved away, she is my best friend and I find it really hard.” Those participants who were in the submissive hemisphere were the only respondents who indicated that they wished they had a romantic partner: “I’m wishing I had a girlfriend, I’m looking for one. I’m lonely and I
worry that I messed something up,” or “Oh, I just wish I had a boyfriend, I haven’t met anyone. It’s kind of lonely, especially when others do.”

Reporting feeling stressed by difficult social interactions (“There is a student I dislike in one of my classes, and we have to work together a lot!”), fearing for one’s personal safety (“I’m afraid to go alone at night because I fear being attacked, I always try to make sure someone is with me”), and feeling interpersonally overwhelmed (“Balancing friends, family, school, boyfriend, House Committee – I’m just totally overwhelmed by it all!”), were all themes unique to the self-sacrificing-nonassertive quadrant (friendly-submissive; bottom right).

The death of a friend or extended family member was reported by participants in three of the quadrants with the exception of those in the bottom left quadrant (hostile submissive). The participants’ responses to these deaths did not fall into any obvious theme by interpersonal quadrant or hemisphere, and were either of an expected death (e.g., “My aunt passed away, she had been in the hospital for a while. It was sad but expected”), or of an accidental death (e.g., “A friend from home died in an accident… the first week was terrible, the funeral was hard, but it is getting better now”). Death of a family pet was also reported by participants in the hostile-dominant quadrant and the friendly-submissive quadrant: “My cat died, he was 19 years old and really sick so my mom had him put down. It’s sad but for the best.” As would be expected due to the independent nature of the stressors, these responses did not seem to follow any theme according to the location of the participant within the interpersonal circumplex.
Achievement stress within the IIP-64 circumplex.

Just as not all quadrants endorsed stressful items in the same way with regard to interpersonal stress, the same was also true for achievement stress. Indeed, it would appear that while some experiences of being a university student were universal, other stresses were unique to particular hemispheres or quadrants. Experiences that were universal to all quadrants in the achievement stressor domain were: failing a quiz or small assignment (“I did poorly on an ecology assignment worth 8%, I hated working on it and kept procrastinating”); having boring or aversive classes or academic tasks (“English papers are hard to work on, I’m so not interested and not good at it….”), being sick or injured (“There was a stomach virus going around the house [residence], it was gross but I am better now,” or “I fell on my knee during skating practice, I took a bad fall and couldn’t walk….”); falling behind in schoolwork (“I’ve fallen behind in economics because I haven’t been going to class….”); and dealing with hassles with bureaucracy or technology (“My computer crashed – my graphics card was missing – it was all messed up I had to reboot and reinstall everything,” and, “The Registrar’s Office is telling me I need a prerequisite that I already have, and they won’t let me register now. Now I have to prove everything, it’s a drag that I have to do all this”).

Patterns of response that were specific to the various hemispheres were as follows. Participants whose interpersonal style placed them in the lower half of the circumplex (nonassertive hemisphere) spoke of stressful events stemming from negatively comparing oneself to others. For example, “My oldest brother was at UNB too, and always got As. He’s really smart and never had to study…,” and, “I compare myself to my roommate, I don’t know why I beat myself up, I feel bad about it.” Such
negative comparisons of self were not part of the “Stress Story” of those participants who were in the upper half (dominant hemisphere) of the interpersonal circumplex.

While experiences of illness and injury were common to all four quadrants of the interpersonal circumplex, only participants who were within the affiliation hemisphere (right hand side of the circumplex) attributed their illness to being rundown and stressed-out: “I got run down and sick, not taking care with eating and sleep…overstudied and got sick…,” and “I always get sick when I am overworked, I get really stressed and worried.”

The experience of being criticized by others was unique to some of those participants whose interpersonal style was within the cold-nonassertive (hostile-submissive; bottom left) quadrant. For instance, “My prof told me I don’t know how to write, and I might fail…,” or, “My prof yells at me if I ask a question, tells me to go back to high school….,” Recall from the previous section that this feeling of being criticized was also present for the participants of this quadrant when they described their stressful interactions with their family members and friends. It was also noted that those participants with a cold-nonassertive (hostile-submissive) interpersonal style were the only group that did not endorse any non-academic failures during their stress interviews, unlike the participants from the other three quadrants who indicated that they had experienced stressors such as losing in a House Committee election, or failing to make a sports team. It would seem that a person who fears criticism from others may be less likely to put themselves in a situation (such as running for an election) that may result in some real or perceived criticism.

Feeling overwhelmed by school work, while trying to maintain other commitments, was a common theme in three out of the four interpersonal circumplex
quadrants: “I got totally overwhelmed to the point of crying and being really upset, I want to work to the best of my ability…” or, “I got totally overwhelmed; I had really let the schoolwork pile up…,” and, “There is so much going on and I can’t manage it all, House Committee elections, midterms, feeling homesick…” Interestingly, those participants in the hostile-dominant hemisphere (top left) did not report these same feelings of being academically and emotionally overwhelmed. They also did not report failing a major exam or assignment. Perhaps this interpersonal style is loath to admit when they are feeling overwhelmed, or are better able to avoid the situation by refusing to take on too much. These participants also did not report having financial trouble or disliking a part-time job. Either these participants manage to balance the demands of academic life, or are unwilling to disclose any stressors.

Participants who were high in affiliation but low in dominance (friendly-submissive; bottom right) reported having difficulties with their roommates that prevented them from studying. As the following quote exemplifies, “She’ll be playing music or talking on the phone, it’s a small space and it’s inconsiderate…I leave and study somewhere else.” Once again, these participants are uncomfortable asserting themselves with their roommates so that they may study. This theme was similar to their reported experiences with friends, family, and roommates in the previous section.
Chapter 4: Discussion

The etiology and onset of depression is a complicated and multifaceted problem which has long challenged researchers. As the complexities of the interactions between interpersonal and intrapersonal factors become better understood, models necessarily become more complex. The present study represented an attempt to further elucidate the complex transactional nature of depression symptomology by examining the cognitive personality vulnerabilities of sociotropy and autonomy; the interpersonal behaviours; and life event stressors that may contribute to the onset and maintenance of a depressed mood state. The goal of this study was to examine the Transactional Model of depression as posited by Zuroff and colleagues (2004). Low statistical power prevented testing of the omnibus hypothesis; however the composite hypotheses were examined, and in the following section, a summary and the implications of the results regarding each hypothesis is discussed in turn. Additionally, the observation that depression scores improved over time, the utility of the Roommate Version of the IIP-64, as well as the limitations of the current study and directions for future research are also discussed.

Improvement in Depression Scores

An anomaly observed in the present study, and perhaps one of the largest contributing factors to the non-significant results was that the BDI-II depression scores improved over time. This was counter to all hypotheses, and unusual when compared to other published studies related to this area of research (e.g. Arthur, 1998). Indeed, in Mongrain et al.’s (2004) longitudinal study in which there were 70 participants, a significant and consistent positive relationship was found between the personality
variables of dependency and self-criticism and depression over the course of the academic year. However, further examination of their results leads to the observation that while the correlations were significant at the three data collection periods, the strength of that relationship had declined by the third (April) data collection. In a 1998 study on sleep and psychological well-being in undergraduate students in residence, Pilcher and Ott noted that their measures of psychological well-being consistently improved over the course of the academic year. Wong and Whittaker’s (1993) longitudinal study of a variety of mental health measures in an undergraduate student population showed that while there was no difference in BDI depression scores overall between data collection periods (2 months), the scores did show consistent improvement across groups from freshman to senior years, with freshmen having the highest rates of depression. These findings suggest that there may be another factor at play influencing the present results.

Adjustment to university life likely exerted an important influence on the results, and for many students, improves over time. This would have an impact on depression scores in this study, and while one will always celebrate improvements in mental health, when a researcher is attempting to test a longitudinal model, it may be more prudent to choose a population with more emotional stability than first year undergraduate students (Henrich, Heine, & Norenzayan, 2010).

**Revisiting the Development of the IIP-64 Roommate Version**

The discrepancies between observer ratings and participant ratings on interpersonal behaviours have been well-documented (e.g., Van Buren & Nowicki, 1997; Leising, Rehbein, & Sporberg, 2007). Indeed, authors have long criticized studies that
rely exclusively on self-report of interpersonal behaviour. In the present study, the IIP-64-RV was developed to address some of these concerns in the literature, and the findings that the subscale scores and total interpersonal problem scores showed discrepancies between self- and other-ratings were consistent with these observed patterns in previous studies. What was unanticipated was that the roommate’s observations of the target’s interpersonal behaviour did not prove to be as predictive as hypothesized. This was particularly surprising as researchers have often eschewed self-ratings in favour of other-ratings in interpersonal behaviour research, in an effort to reduce bias in measurements (e.g. Mongrain, et al., 2004). This lack of predictive ability of the IIP-64-RV with respect to depression was true even in analyses involving only the Time 1 data, which had adequate statistical power. Neither the individual predictors of roommate-rated overly-accommodating and cold/distant behaviours, nor the interaction terms between these behaviours with the cognitive personality variables of sociotropy and autonomy significantly predicted depression scores either cross-sectionally or longitudinally.

Reasons for the lack of predictive ability of the roommate-rated interpersonal behaviours are unclear at present; however, a review of the interpersonal literature reveals some possible explanations. First, laboratory studies, in which raters are asked to judge the interpersonal behaviour of the participant engaged in a standardized task or role play, demonstrated the strongest predictive effect for interpersonal behaviours (Mongrain et al., 2004; Leising, Rehbein, & Sporberg, 2006). Second, in more naturalistic studies involving college roommates, the behaviours under study were much more specific to depression, that is, rejection, negative feedback seeking, and/or reassurance seeking
(Joiner, Alfano, & Metalsky, 1992; Joiner & Metalsky, 1997). All studies which utilized a circumplex-based measure similar to the IIP-64 were conducted in a laboratory, and the researchers utilized the broad dimensions of Dominance and Affiliation,\(^2\) rather than specific subscales such as Cold/Distant and Overly-Accommodating, as was done in the present study. Finally, the period of time under which observers were asked to reflect on interpersonal behaviours was typically much shorter – either instantly in the case of laboratory-based paradigms, or over 2-3 weeks as in the more naturalistic studies. The results of the present study therefore suggest that general circumplex-based interpersonal measures may be more appropriate for controlled research conditions, whereas naturalistic research conditions utilizing survey based research require measures of specific interpersonal behaviours. A general measure of interpersonal behaviour in a naturalistic setting may simply not be sensitive enough to detect the nuances of interpersonal exchange. However, a measure such as the IIP-64-RV would be well suited to be adapted to a specific purpose such as couples counselling, or for interpersonal therapy interventions. A client receiving feedback regarding how his/her behaviour is viewed through the eyes of another could prove to be an effective therapeutic tool, as researchers have noted that the outfall of interpersonal discrepancies can be deleterious in relationships (Leising, et al., 2006).

\(^2\) It should be noted that when analyses were rerun using IIP-64 and IIP-64-RV Dominance and Affiliation as predictors, no significant results were found.
The Congruency Hypothesis

The statistically non-significant results of this study with respect to the prediction of depressed mood from the interaction of the cognitive personality vulnerabilities of sociotropy and autonomy with congruent stressful events (i.e., achievement or interpersonal) are not unlike previous research, as the findings in this area have been mixed (Eberhart & Hammen, 2010). The strongest support for the congruency hypothesis has been noted with respect to sociotropy and interpersonal life events (e.g., Hammen, 2005), while less support has been demonstrated for autonomy and achievement life events (e.g., Clark & Oates, 1995). Still others have noted that an increase in depressed mood can result from the interaction between the personality vulnerability and its non-congruent stress domain (e.g., Hammen, 1991). Increasingly, researchers have come to realize that while there is often a well-demonstrated diathesis-stress effect for depression, it is more nuanced than originally thought. Researchers demonstrating positive results have often examined the subscales of sociotropy and autonomy (e.g., “Solitude,” “Perfectionism,” or “Self-Criticalness”), and defined stressors more narrowly than the broad categories of interpersonal and achievement stress (Frewen & Dozois, 2006a; Frewen & Dozois, 2006b; Priel & Shahar, 2000; Shahar, et al., 2004).

Indeed, the broad categorization of stress as interpersonal or achievement has been criticized in the literature, particularly with respect to life event surveys administered in a questionnaire format, as individual context cannot be taken into account when categorizing items (Frewen & Dozois, 2006a). Addressing this concern was the rationale behind utilizing the interview based Life Events and Difficulties Schedule (LEDS; Brown & Harris, 1978) administered in the present study, as trained raters were
used to categorize the item responses according to the interview responses, which would allow for the detection of items that should be categorized more appropriately. For example, if a participant was upset that s/he was not elected to their House Committee because it meant s/he would not be hanging around with their friends as often, this could be coded as an interpersonal event, rather than the achievement event it might first appear. Unfortunately, despite this effort to improve the sensitivity of the measure with respect to interpersonal and achievement stressors, the categories may still have proven to be too broadly defined to determine the specific types of stress that may trigger an increase in depressed mood in a cognitively vulnerable person.

Of course, it should not be forgotten that the improvement in depression scores at the Time 2 data collection discussed earlier would likely be most relevant in explaining the null results for the Congruency Hypothesis. Indeed, Autonomy appeared to be a protective factor for depressed mood in this sample, as those scoring higher in Autonomy at Time 1 were more likely to have lower depression scores at Time 2. This was true even though Achievement Stress was correlated with Time 2 depression scores — although not interpretable, it is possible that those participants who scored higher in Sociotropy may have been experiencing more depression symptoms as a result of the achievement stress associated with the time of year. Recall that the second data collection took place close to the end of term when academic pressure was increasing — perhaps those more autonomous achievement-oriented participants were rising to the occasion, while more sociotropic participants found the clash between their nature and their responsibilities more difficult to negotiate. This speculation would be similar to Hammen’s (1991)
observation that women scoring higher in sociotropy experienced more depression resulting from an increase in achievement-related stress.

**Personality Vulnerability and Interpersonal Behaviours**

Perhaps some of the most interesting results found in the present study come from the examination of the relationships between the cognitive personality vulnerabilities of sociotropy and autonomy and their associated interpersonal behaviours in the prediction of depressed mood. To date, there has been relatively little research investigating the interpersonal aspects of sociotropy and autonomy. Using the protocol outlined by Alden and Bieling (1996), the interpersonal behaviours most associated with sociotropy and autonomy in the interpersonal circumplex were used for analysis.

In the Time 1 sample, sociotropy was correlated with depression scores, in that the more sociotropic an individual was, the higher their depression scores. The 2-way interactions between sociotropy and either cold/distant interpersonal behaviours or accommodating interpersonal behaviours were significant. For persons low in sociotropy, depression scores improved slightly when they rated themselves as engaging in accommodating behaviours. In contrast, those high in sociotropy reported significantly higher depression scores when they also reported higher levels of accommodating behaviour. It would seem that although maintaining interpersonal relationships is important to these participants, when they feel that they are being taken advantage of, their mood is more depressed. Although the findings here were not exclusive to women, similar sentiments have been noted in the literature regarding women and depression, as
the social construction of the role of women is to maintain relationships and to do for others often at their own expense (e.g., “the good mother”; McMullen & Stoppard, 2003).

In contrast to the interaction of the participants who were high in sociotropy and overly-accommodating behaviour which predicted an increase in their depressed mood, an interesting pattern was observed in the interaction between sociotropy and cold/distant interpersonal behaviour. Persons who scored lower in sociotropy had a higher level of depressed mood the more they rated themselves as distancing themselves from others. It would seem that while they were not of a personality type to place a great deal of emphasis on maintaining relationships, they suffer more if they engage in behaviours which serve to isolate them. Conversely, those who are low in sociotropy are happier when they do not isolate themselves. It would seem that those who are low on sociotropy and do not actively distance themselves are happier than those who are low on sociotropy and distance themselves (i.e., “happy hermit” vs “bitter introvert”). This pattern is also true for persons who rate themselves higher on sociotropy, although the slope was not as extreme. When participants value relationships but engage in isolating behaviours, they report higher levels of depressed mood, and this worsens with increasingly distant behaviour.

Thus, in these circumstances, high levels of negative interpersonal behaviour interact with personality factors to worsen a depressed mood. This was true even of interpersonal behaviour that would be considered consistent with sociotropy. This finding lends increasing support to the interpersonal literature and the importance of considering interpersonal factors in our understanding of depression (Gotlib & Hammen, 2002; Joiner, Brown, & Kistner, 2006). Interestingly, how the roommate viewed the person’s
interpersonal behaviour did not predict depressed mood. It would seem that how the person views their own behaviour and how that perception interacts with their personality vulnerability is what allows a certain level of prediction in terms of mood – not their behaviour as observed by another.

The research with respect to the interpersonal nature of depression has been largely conducted by a single research group – T.E. Joiner and colleagues – who have expanded upon Coyne’s initial work on reassurance seeking and rejection (e.g., Joiner, 1996; Joiner, Brown, & Kistner, 2006). Reassurance-seeking has been traditionally linked with the personality trait of dependence (i.e., sociotropy; Zuroff, Sangtor, Mongrain, Auerbach, Levy, & Schaffer, 2005), with no work linked to the autonomous/self-critical personality dimension and its associated interpersonal behaviour. Indeed, in the most recent studies which included aspects of interpersonal behaviour in their examination of the transactional nature of depression, no mention was made of possible interpersonal problems with the exception of dependency, reassurance-seeking, or anxious attachment (Eberhart & Hammen, 2010; Eberhart, Auerbach, Bigda-Peyton, & Abela, 2011). The findings presented here that cold-distant interpersonal behaviour may moderate depressed mood is a new finding in the literature regarding the transactional nature of the etiology of depression, and one that warrants further examination. Such a finding lends support to the clinical work Thomas Lynch and colleagues are currently pioneering which focuses on a particular form of depression in which clients are conceptualized as being emotionally over-controlled (e.g., Lynch, Hempel, & Dunkley, 2015; Lynch, Lazarus, & Cheavens, 2015). Persons experiencing this form of depression are noted as experiencing social isolation, inhibited emotional expression, and “aloof and distant relationships”
(Lynch, Hempel, & Dunkley, 2015). Arguably, reassurance-seeking could be conceptualized as being antithetical to cold/distant interpersonal behaviours, and interpersonal models of depression could therefore be expanded to include the potential impact within a transactional model of such socially isolating interpersonal behaviours.

**Stress Generation and Interpersonal Behaviour**

The preliminary findings in this study shed light on the importance of considering interpersonal factors in our conceptualization of the etiology of depression. Arguably, of the variables considered in the present study, the cognitive personality vulnerabilities of sociotropy and autonomy had the least role to play in the prediction of depressed mood, eclipsed by interpersonal behaviours and stress generation. In the role of stress generation, interpersonal factors, specifically cold and distant interpersonal behaviour, had a significant part to play in the prediction of stressful life events. Participants who rated themselves as having cold/distant interpersonal behaviours experienced significantly more interpersonal and achievement stress events over the 6-8 week period between data collections than did those participants who rated themselves as having more accommodating behaviours.

As there is a clear association between stress and depression in this study and others (e.g., Hammen, 2005), a better understanding of the nature of the interpersonal factors related to stress generation is important. How a person understands and experiences stressful events is an important determinant in how they will react to those events. Their subsequent behaviour may ameliorate, or create more stress. The qualitative
findings from this study represent a novel analytical approach to improving our understanding of the relationship between interpersonal behaviour and stress.

Understanding the personal experience of stress according to interpersonal type and how it links to stress and depression can provide unique insights into behaviour. By analyzing the responses to the Life Events and Difficulties interview according to interpersonal circumplex, a deeper understanding of the connection between stress and an interpersonal way of being was gleaned. From the analysis of the life event stress interviews, a contextual understanding of an individual’s response to stress based on their interpersonal style and behaviour provides a front row perspective on the process of stress generation. Indeed, where a checklist alone would indicate only whether the stressor had occurred, and a Likert scale could indicate the degree of impact, the present analysis of the interviews provides the genesis of an understanding of how increasing stress may evolve based on an interpersonal style.

Eberhart and Hammen (2010) and Eberhart and colleagues (2011) have noted that there are gaps in the interpersonal literature on depression where it is difficult to conceptualize the mechanism through which interpersonal vulnerabilities influence depressed mood. The qualitative analysis in the present study provides means by which we can begin to understand the genesis of such a mechanism. When the responses to the stress interview were organized according to the four quadrants of the interpersonal circumplex, one begins to understand the experience of the individuals who fall within these quadrants, and empathize with the choices they may make based on their interpersonal ways of being in the world. In the face of life stress, those in the friendly-submissive quadrant are characterized by thoughts and behaviours which suggest that
they feel exploited, blamed, self-sacrificing, overwhelmed by their obligations, and uncomfortable asserting their needs. Those in the hostile-nonassertive quadrant appear to react to life stress by being dismissive and withdrawing from others, feeling criticized and being easily offended, and can be disparaging and bitter. Those in the hostile-dominant quadrant had the least to say during their interviews, perhaps reflecting their distant, aloof, private, and even suspicious nature that was reflected in the few responses that they did provide. Finally, those who were in the friendly-dominant quadrant seemed the best equipped to handle life stress as they were more assertive, optimistic, less entrenched in their views, saw problems as being short term and specific to the situation. For example, when participants spoke of their disagreements with family and friends, the responses of participants in the top right hand quadrant (friendly-dominant) contrasted sharply with those in the lower left (cold-nonassertive) quadrant. When participants in the friendly-dominant quadrant spoke of these disagreements, they often went on to state something like, “…well we talked about it, and it is getting better now.” In contrast, participants in the lower left quadrant reported that they withdrew from their friends and family, and complained of feeling blamed or shunned. Certainly, there appear to be patterns with regard to how interpersonal vulnerabilities shape the stressors that are experienced in participants' lives, and these patterns may compound rather than ameliorate the stress. It is important to note that these qualitative observations do not suggest that a particular interpersonal type will generate more stressful situations than another type. Instead it sheds insight into the experience of stress based on the organizational framework of the circumplex model of interpersonal behaviour, and that
this experience may shape decisions regarding how persons with different interpersonal types cope with their stress, leading to the possible generation of more stress.

Understanding a person’s interpersonal behaviours can shed light on the types of stress they experience, how that stress is being experienced, and whether additional stress is being created by the behaviour. It is becoming increasingly evident that there is a role for understanding and changing interpersonal behaviours to improve symptoms of depression and stress. Indeed, Interpersonal Therapy (IPT) has been gaining increasing recognition as being an effective treatment modality for clinical depression (Jakobsen, Hansen, Simonsen, Simonsen, & Glinoud, 2012). Similarly, assertiveness training has long been an integral part of stress management techniques (e.g., Smith, 2002). The qualitative findings presented above suggest that interpersonal therapeutic interventions such as these could potentially help individuals better recognize the patterns by which their interpersonal vulnerabilities shape the stressors they experience in their lives, and change these patterns where they are seen to create more stress rather than resolving it.

Limitations of the Study and Directions for Future Research

Longitudinal research: A cautionary tale.

Attrition of participants is a potential problem for all longitudinal studies, and this problem was also a concern in the present study. Therefore, why such difficulties arose, and the implications for future longitudinal research is discussed.

A review of the methodologies of longitudinal studies involving roommate pairs revealed three areas of challenge. First, the timing of the data collection sessions seems to have an impact on participant retention. Second, financial incentives have a powerful
effect on participation. Finally, whether participants are expected to opt-in or opt-out of data collection sessions is influential. This review is by no means exhaustive, as only studies that were able to retain a high percentage of participants would be deemed publishable, and there are likely many longitudinal studies with uncomfortably high attrition rates and corresponding null results languishing in file drawers (Franco, Malhotra, & Simonovits, 2014; Rosenthal, 1979).

An example of participant attrition may be found in Mongrain et al.’s (2004) longitudinal study involving college roommates. In this study, 104 participants were followed at 3 points: September, February, and April. Only 4 participants declined participation at the second data collection, but by the April data collection, an additional 30 participants had dropped out leaving 67% of the original sample. Data collection times in the present study were in November-December, and then again in February-March-April. Participation was excellent during the first data collection, but declined precipitously at the second data collection, with 20% of the original sample participating. It would seem that the time of year may play a significant role in participation rates in undergraduate students. Many of the students contacted in the present study regarding the second data collection had already earned all the points they required for course credit, and were no longer interested. Others were simply no longer interested, presumably as they were looking ahead to more enjoyable summertime pursuits.

Financial incentives had a very large role to play in participant recruitment and retention for many studies. In a longitudinal study by Wong and Whittaker (1993), no financial incentives were mentioned, and these authors experienced an attrition rate of 69%. Unfortunately, these authors did not mention the time of year of their data
collection periods, so no comparisons could be drawn. The Mongrain et al. (2004) study offered their participants financial incentives of $15 and $20 for the second and third data collections respectively (and still experienced over 30% attrition). In a study of friendships that used roommate pairs, Schofield, Hausmann, Ye, and Woods (2010) had a very high rate of return at their second data collection at 94%. These authors attributed their success to “frequent reminder mailings and [unspecified] financial incentives.” Crocker, Canevello, Breine, and Flynn (2010) also reported a high rate of return (97.5%); however, student participants could earn up to $100 for completing all components of the study. Financial incentive was not a possibility in the present study, but may be an important consideration for future research, particularly when data collection occurs at a time when course credit may no longer hold the same reward - such as at the end of an academic term when students have either maximized their bonus marks, are too busy, or have adopted a more stoic attitude towards their course mark.

Participants in the present study were asked to indicate at the Time 1 data collection for their permission to contact them for the second data collection, in effect, “opting-in” to further participation in the study. This is in contrast to studies listed above in which participants were expected to participate in longitudinal data collection from the outset of the study, and had to “opt out” of further participation. Several studies indicated that they repeatedly contacted participants regarding follow-up data collection by mailouts, telephone calls, and emailings (e.g. Crocker et al., 2010; Schofield et al., 2010). In the present study, such approaches were considered unduly coercive, as was direct financial incentive to participants (even if it had been a viable option for the researcher). Participants were contacted once by their chosen method (i.e., telephone or
email), and then followed up once if no response was received within a week of the initial contact. While the timing of the data collection is a modification that could be easily considered in future longitudinal work, dealing with the ethical implications of financial compensation and perceived participant coercion are not as straightforward. This is the crux of the issue for many researchers and ethics review boards: ensuring that no harm comes to participants while maintaining a strong research design. Indeed, this research may serve as a cautionary tale to researchers considering longitudinal research.

Sample characteristics.

There are three main concerns regarding the sample in this study. First, as the current sample is comprised of university undergraduate students, it represents a young, highly educated, largely Caucasian, economically, culturally, and educationally privileged sample. Therefore it cannot be assumed that the findings would generalize to a more ethnically or racially diverse group, or to persons of lower socioeconomic status or education level. Second, as discussed previously, this research is based on a smaller than ideal sample size due to difficulties retaining participants for the second data collection. This smaller sample size did not allow for an examination of the omnibus hypothesis examining the Transactional Model of depression (Zuroff et al., 2004). Research and replication is needed with larger samples, more diverse samples, and clinical samples in order to increase confidence in the significant findings that were observed, and to allow testing of the omnibus hypothesis. Finally, individuals who chose to participate in the study may have differed in notable ways from those who did not. This is particularly true of those who chose to participate in the Time 2 sample. From the demographic information noted from the Time 2 sample, this group contained proportionally more
women, who were slightly younger and had lived together for slightly less time than their Time 1 counterparts. Indeed, when examining the scatterplot of Time 2 participants in Figure 13, one can see that there are a disproportionate number of participants in the friendly-submissive quadrant, and of these participants, 89% are women. This quadrant is characterized by people who are interpersonally more accommodating, and therefore more likely to participate in psychological research studies. Indeed, researchers have long been aware of the potential differences in attitudes and personality variables in undergraduate research participants, as well as difficulties in achieving a gender balance (Bernard & Walsh, 2002; Evans & Donnerstein, 1974). A more ideal sample would represent participants of both genders from all quadrants of the interpersonal circle.

Measurement issues.

There are several measurement issues that could be improved in future replications. First, although not as sensitive, a checklist style life event measure given at the Time 1 data collection could provide a baseline measurement of stress that would allow for some cross-sectional analysis of the data. In the present study, time and resource constraints made it difficult to conduct stress interviews at both data collections for the number of participants required for adequate statistical power, and optimism regarding participant retention resulted in the decision to only collect stress data at the second data collection. This should be guarded against in future replications by including a checklist measure. Second, more information should be gathered during the stress interviews to allow for a richer qualitative analysis of the participants’ perceptions of the stressful events they experienced. Third, in order to fully investigate whether cognitive
personality vulnerabilities are influenced by interpersonal problems over time, the Personal Style Inventory (PSI; Robins et al., 1994) should also be administered at the second data collection. This would afford a more thorough examination of the Transactional model. Finally, as reviewed earlier, consideration should be given to the type of measure used to assess interpersonal behaviour of participants, as a circumplex-based measure in a questionnaire-based study may not be sensitive enough. Given the qualitative findings in the present study, a measure which affords adequate sensitivity in the detection of the nuances of interpersonal behaviour associated with depression appears to be most relevant. Indeed, similar integrative longitudinal studies have demonstrated significant results examining the interpersonal behaviour of reassurance-seeking, rather than of those behaviours more specifically associated with personality (Priel & Shahar, 2000; Shahar et al., 2004). However, the present findings support the notion that there may be more interpersonal behaviours than reassurance-seeking involved in the downward spiral of depression. Indeed, the interesting preliminary findings with respect to cold/distant behaviours and overly-accommodating behaviours, coupled with the varied responses to stress based on a person’s interpersonal way of being noted in the qualitative analysis, suggest that there may be a variety of interpersonal behaviours that contribute to an increase in depressed mood. Methodological improvements to prevent high rates of attrition may address concerns that are being erroneously attributed to measurement problems.
Conclusions

Despite the inability to analyze the full Transactional Model of Depression as posited by Zuroff and colleagues (2004), a number of important findings emerged from the present study. First, the results regarding the Congruency Hypothesis lend more weight to more recent findings: that is, the relationship between the broad cognitive personality types of sociotropy and autonomy and interpersonal and achievement stress is not as straightforward as originally conceived. Indeed, it is more likely that certain aspects of these cognitive personality factors, interacting with specific types of stressors, which cause vulnerable persons to experience increases in depressed mood. Second, in this study, interpersonal factors emerged as being important in both the prediction of depressed mood and in the conceptualization of how stress is experienced. Indeed, significant findings were noted with respect to the interactions between cognitive personality vulnerabilities and the interpersonal behaviours associated with those vulnerabilities in the prediction of depressed mood. Similarly, interpersonal behaviours, specifically cold/distant behaviours, were predictive of increased stress over time in both interpersonal and achievement stress domains. Qualitative analysis of the stress interviews revealed unique associations between interpersonal types and the type of stressors experienced by participants. These findings lend support to the importance of increasing our understanding of interpersonal factors in our conceptualization of stress and depressed mood.
References


Appendix A

Questionnaires

Mood and Roommate Relationships

Thank you for participating

First you need to create a code that will allow your questionnaire package to be matched to your roommate while maintaining confidentiality. Follow these instructions carefully:

1. On the first two lines, put the last two digits of your room number. For example, if your room number was 403, you would write 0 then 3.

2. On the second two lines, put the 4th and 7th digits of your residence room phone number. For example, if your phone number was 555-1234, you would write 1 and then 4.

Therefore, the code number in this example would be 0 3 1 4.

YOUR CODE NUMBER IS:

<table>
<thead>
<tr>
<th>2nd last digit room #</th>
<th>last digit room #</th>
<th>4th digit phone #</th>
<th>7th digit phone #</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
</tbody>
</table>
1. Gender: Male    Female    (please circle)

2. How old are you? ____________ years

3. How would you best describe your race/ethnicity?

______________________________

4. What is your Faculty (e.g. Arts, Science, etc)?

______________________________

5. What year are you currently in (please circle)?

\[
\begin{array}{cccccc}
\_ & 1 & 2 & 3 & 4 & 5 & 6 \\
\end{array}
\]

6. How many years have you lived in residence?

1 2 3 4 5 6

7. What lifestyle is your current residence (please check one)?

____ all female
____ all male
____ co-ed

8. How long have you known your present roommate? _____ years_____ months

9. How long have you lived with your present roommate? _____ years_____ months
**Name:**
**Marital Status:**
**Age:**
**Sex:**
**Occupation:**
**Education:**

**Instructions:** This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and then pick out the **one statement** in each group that best describes the way you have been feeling during the **past two weeks, including today**. Circle the number beside the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number for that group. Be sure that you do not choose more than one statement for any group, including Item 16 (Changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

### 1. Sadness
- 0  I do not feel sad.
- 1  I feel sad much of the time.
- 2  I am sad all the time.
- 3  I am so sad or unhappy that I can't stand it.

### 2. Pessimism
- 0  I am not discouraged about my future.
- 1  I feel more discouraged about my future than I used to be.
- 2  I do not expect things to work out for me.
- 3  I feel my future is hopeless and will only get worse.

### 3. Past Failure
- 0  I do not feel like a failure.
- 1  I have failed more than I should have.
- 2  As I look back, I see a lot of failures.
- 3  I feel I am a total failure as a person.

### 4. Loss of Pleasure
- 0  I get as much pleasure as I ever did from the things I enjoy.
- 1  I don't enjoy things as much as I used to.
- 2  I get very little pleasure from the things I used to enjoy.
- 3  I can't get any pleasure from the things I used to enjoy.

### 5. Guilty Feelings
- 0  I don't feel particularly guilty.
- 1  I feel guilty over many things I have done or should have done.
- 2  I feel quite guilty most of the time.
- 3  I feel guilty all of the time.

### 6. Punishment Feelings
- 0  I don't feel I am being punished.
- 1  I feel I may be punished.
- 2  I expect to be punished.
- 3  I feel I am being punished.

### 7. Self-Dislike
- 0  I feel the same about myself as ever.
- 1  I have lost confidence in myself.
- 2  I am disappointed in myself.
- 3  I dislike myself.

### 8. Self-Criticalness
- 0  I don't criticize or blame myself more than usual.
- 1  I am more critical of myself than I used to be.
- 2  I criticize myself for all of my faults.
- 3  I blame myself for everything bad that happens.

### 9. Suicidal Thoughts or Wishes
- 0  I don't have any thoughts of killing myself.
- 1  I have thoughts of killing myself, but I would not carry them out.
- 2  I would like to kill myself.
- 3  I would kill myself if I had the chance.

### 10. Crying
- 0  I don't cry anymore than I used to.
- 1  I cry more than I used to.
- 2  I cry over every little thing.
- 3  I feel like crying, but I can't.
<table>
<thead>
<tr>
<th>11. Agitation</th>
<th>17. Irritability</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>I am no more restless or wound up than usual.</td>
</tr>
<tr>
<td>1</td>
<td>I feel more restless or wound up than usual.</td>
</tr>
<tr>
<td>2</td>
<td>I am so restless or agitated that it's hard to stay still.</td>
</tr>
<tr>
<td>3</td>
<td>I am so restless or agitated that I have to keep moving or doing something.</td>
</tr>
<tr>
<td>0</td>
<td>I am no more irritable than usual.</td>
</tr>
<tr>
<td>1</td>
<td>I am more irritable than usual.</td>
</tr>
<tr>
<td>2</td>
<td>I am much more irritable than usual.</td>
</tr>
<tr>
<td>3</td>
<td>I am irritable all the time.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>12. Loss of Interest</th>
<th>18. Changes in Appetite</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>I have lost interest in other people or activities.</td>
</tr>
<tr>
<td>1</td>
<td>I am less interested in other people or things than before.</td>
</tr>
<tr>
<td>2</td>
<td>I have lost most of my interest in other people or things.</td>
</tr>
<tr>
<td>3</td>
<td>It's hard to get interested in anything.</td>
</tr>
<tr>
<td>0</td>
<td>I have not experienced any change in my appetite.</td>
</tr>
<tr>
<td>1a</td>
<td>My appetite is somewhat less than usual.</td>
</tr>
<tr>
<td>1b</td>
<td>My appetite is somewhat greater than usual.</td>
</tr>
<tr>
<td>2a</td>
<td>My appetite is much less than before.</td>
</tr>
<tr>
<td>2b</td>
<td>My appetite is much greater than usual.</td>
</tr>
<tr>
<td>3a</td>
<td>I have no appetite at all.</td>
</tr>
<tr>
<td>3b</td>
<td>I crave food all the time.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>13. Indecisiveness</th>
<th>19. Concentration Difficulty</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>I make decisions about as well as ever.</td>
</tr>
<tr>
<td>1</td>
<td>I find it more difficult to make decisions than usual.</td>
</tr>
<tr>
<td>2</td>
<td>I have much greater difficulty in making decisions than I used to.</td>
</tr>
<tr>
<td>3</td>
<td>I have trouble making any decisions.</td>
</tr>
<tr>
<td>0</td>
<td>I can concentrate as well as ever.</td>
</tr>
<tr>
<td>1</td>
<td>I can't concentrate as well as usual.</td>
</tr>
<tr>
<td>2</td>
<td>It's hard to keep my mind on anything for very long.</td>
</tr>
<tr>
<td>3</td>
<td>I find I can't concentrate on anything.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14. Worthlessness</th>
<th>20. Tiredness or Fatigue</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>I do not feel I am worthless.</td>
</tr>
<tr>
<td>1</td>
<td>I don't consider myself as worthwhile and useful as I used to.</td>
</tr>
<tr>
<td>2</td>
<td>I feel more worthless as compared to other people.</td>
</tr>
<tr>
<td>3</td>
<td>I feel utterly worthless.</td>
</tr>
<tr>
<td>0</td>
<td>I am no more tired or fatigued than usual.</td>
</tr>
<tr>
<td>1</td>
<td>I get more tired or fatigued more easily than usual.</td>
</tr>
<tr>
<td>2</td>
<td>I am too tired or fatigued to do a lot of the things I used to do.</td>
</tr>
<tr>
<td>3</td>
<td>I am too tired or fatigued to do most of the things I used to do.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>I have as much energy as ever.</td>
</tr>
<tr>
<td>1</td>
<td>I have less energy than I used to have.</td>
</tr>
<tr>
<td>2</td>
<td>I don't have enough energy to do very much.</td>
</tr>
<tr>
<td>3</td>
<td>I don't have enough energy to do anything.</td>
</tr>
<tr>
<td>0</td>
<td>I have not noticed any recent change in my interest in sex.</td>
</tr>
<tr>
<td>1</td>
<td>I am less interested in sex than I used to be.</td>
</tr>
<tr>
<td>2</td>
<td>I am much less interested in sex now.</td>
</tr>
<tr>
<td>3</td>
<td>I have lost interest in sex completely.</td>
</tr>
</tbody>
</table>

NOTICE: This form is printed with both blue and black ink. If your copy does not appear this way, it has been photocopied in violation of copyright laws.
Personal Style Inventory-II

Here are a number of statements about personal characteristics. Please read each one carefully, and indicate whether you agree or disagree, and to what extent, by circling a number.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Slightly Disagree</th>
<th>Agree</th>
<th>Slightly Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I often put other people’s needs before my own.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>2. I tend to keep other people at a distance.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>3. I find it difficult to be separated from people I love.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>4. I am easily bothered by other people making demands of me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>5. I am very sensitive to the effects I have on the feelings of other people.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>6. I don’t like relying on others for help.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7. I am very sensitive to criticism by others.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>8. It bothers me when I feel that I am only average and ordinary.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>9. I worry a lot about hurting or offending other people.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>10. When I’m feeling blue I don’t like to be offered sympathy.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>11. It is hard for me to break off a relationship even if it is making me unhappy.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>12. In relationships, people are often too demanding of one another.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>
13. I am easily persuaded by others. 1 2 3 4 5 6
14. I usually view my performance as either a complete success or a complete failure. 1 2 3 4 5 6
15. I try to please other people too much. 1 2 3 4 5 6
16. I don’t like people to invade my privacy. 1 2 3 4 5 6
17. I find it difficult if I have to be alone all day. 1 2 3 4 5 6
18. It is hard for me to take instructions from people who have authority over me. 1 2 3 4 5 6
19. I often feel responsible for solving other people’s problems. 1 2 3 4 5 6
20. I often handle big decisions without telling anyone else about them. 1 2 3 4 5 6
21. It is very hard for me to get over the feeling of loss when a relationship has ended. 1 2 3 4 5 6
22. It is hard for me to have someone dependent on me. 1 2 3 4 5 6
23. It is very important for me to be liked or admired by others. 1 2 3 4 5 6
24. I feel badly about myself when I am not actively accomplishing things. 1 2 3 4 5 6
25. I feel I have to be nice to other people. 1 2 3 4 5 6
26. It is hard for me to express admiration or affection. 1 2 3 4 5 6
<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
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<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>27.</td>
<td>I like to be certain that there is somebody close I can contact in case something unpleasant happens to me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>28.</td>
<td>It is difficult for me to make a long-term commitment to a relationship.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>29.</td>
<td>I am too apologetic to other people.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>30.</td>
<td>It is hard for me to open up and talk about my feelings and other personal things.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>31.</td>
<td>I am very concerned with how people react to me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>32.</td>
<td>I have a hard time forgiving myself when I feel I haven’t worked up to my full potential.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>33.</td>
<td>I get very uncomfortable when I’m not sure whether or not someone likes me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>34.</td>
<td>When making a big decision, I usually feel that advice from others is intrusive.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>35.</td>
<td>It is hard for me to say “no” to other people’s requests.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>36.</td>
<td>I resent it when people try to direct my behavior or wishes.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>37.</td>
<td>I become upset when something happens to me and there is nobody around to talk to.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>38.</td>
<td>Personal questions from others usually feel like an invasion of my privacy.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>39.</td>
<td>I am most comfortable when I know my behavior is what others expect of me.</td>
<td>1</td>
<td>2</td>
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</tr>
<tr>
<td><strong>40.</strong> I am very upset when other people or circumstances interfere with my plans</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td><strong>41.</strong> I often let people take advantage of me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td><strong>42.</strong> I rarely trust the advice of others when making a big decision.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td><strong>43.</strong> I become very upset when a friend breaks a date or forgets to call me as planned.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td><strong>44.</strong> I become upset more than most people I know when limits are put on my personal independence and freedom.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td><strong>45.</strong> I judge myself based on how I think others feel about me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td><strong>46.</strong> I become upset when others try to influence my thinking on a problem.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td><strong>47.</strong> It is hard for me to let people know when I am angry with them.</td>
<td>1</td>
<td>2</td>
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<td>4</td>
<td>5</td>
</tr>
<tr>
<td><strong>48.</strong> I feel controlled when others have a say in my plans.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
**IIP-64 Question Sheet**

People have reported having the following problems in relating to other people. Please read the list below, and for each item, consider whether it has been a problem for you with respect to any significant person in your life. Then fill in the numbered circle that describes how distressing that problem has been.

The following are things you find hard to do with other people.

<table>
<thead>
<tr>
<th>It is hard for me to:</th>
<th>Not at all</th>
<th>A little bit</th>
<th>Moderately</th>
<th>Quite a bit</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Trust other people</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.</td>
</tr>
<tr>
<td>2. Say &quot;no&quot; to other people</td>
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<td>2.</td>
</tr>
<tr>
<td>3. Join in on groups</td>
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<td>3.</td>
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<tr>
<td>4. Keep things private from other people</td>
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<tr>
<td>5. Let other people know what I want</td>
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<td>5.</td>
</tr>
<tr>
<td>6. Tell a person to stop bothering me</td>
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<td>6.</td>
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<tr>
<td>7. Introduce myself to new people</td>
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<tr>
<td>8. Confront people with problems that come up</td>
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<td>8.</td>
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<tr>
<td>10. Let other people know when I am angry</td>
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<td>10.</td>
</tr>
<tr>
<td>11. Make a long-term commitment to another person</td>
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<td>11.</td>
</tr>
<tr>
<td>12. Be another person's boss</td>
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<td>12.</td>
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<tr>
<td>13. Be aggressive toward other people when the situation calls for it</td>
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<td></td>
<td>13.</td>
</tr>
<tr>
<td>15. Show affection to people</td>
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<td>15.</td>
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<tr>
<td>16. Get along with people</td>
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<td>16.</td>
</tr>
<tr>
<td>17. Understand another person's point of view</td>
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<tr>
<td>18. Express my feelings to other people directly</td>
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<td>18.</td>
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<tr>
<td>19. Be firm when I need to be</td>
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<td>19.</td>
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<tr>
<td>20. Experience a feeling of love for another person</td>
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<td>20.</td>
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<tr>
<td>22. Be supportive of another person's goals in life</td>
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<td>22.</td>
</tr>
<tr>
<td>23. Feel close to other people</td>
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<td></td>
<td>23.</td>
</tr>
<tr>
<td>25. Argue with another person</td>
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<td>25.</td>
</tr>
<tr>
<td>27. Give a gift to another person</td>
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<td></td>
<td></td>
<td>27.</td>
</tr>
<tr>
<td>28. Let myself feel angry at somebody I like</td>
<td></td>
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<td>28.</td>
</tr>
<tr>
<td>29. Put somebody else's needs before my own</td>
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<td>29.</td>
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<tr>
<td>30. Stay out of other people's business</td>
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<td>30.</td>
</tr>
<tr>
<td>31. Take instructions from people who have authority over me</td>
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<td>31.</td>
</tr>
<tr>
<td>32. Feel good about another person's happiness</td>
<td></td>
<td></td>
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<td>32.</td>
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<tr>
<td>33. Ask other people to get together socially with me</td>
<td></td>
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<td></td>
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<td>33.</td>
</tr>
</tbody>
</table>

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192
It is hard for me to:

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Almost Never</th>
<th>Rarely</th>
<th>Occasionally</th>
<th>Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>34. Feel angry at other people</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>35. Open up and tell my feelings to another person</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>36. Forgive another person after I've been angry</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>37. Attend to my own welfare when somebody else is needy</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>38. Be assertive without worrying about hurting the other person's feelings</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>39. Be self-confident when I am with other people</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

The following are things that you do too much.

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Almost Never</th>
<th>Rarely</th>
<th>Occasionally</th>
<th>Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>40. Fight with other people too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>41. I feel too responsible for solving other people's problems</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>42. I am too easily persuaded by other people</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>43. I open up to people too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>44. I am too independent</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>45. I am too aggressive toward other people</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>46. I try to please other people too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>47. I clown around too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>48. I want to be noticed too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>49. I trust other people too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>50. I try to control other people too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>51. I put other people's needs before my own too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>52. I try to change other people too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>53. I am too gullible</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>54. I am overly generous to other people</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>55. I am too afraid of other people</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>56. I am too suspicious of other people</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>57. I manipulate other people too much to get what I want</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>58. I tell personal things to other people too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>59. I argue with other people too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>60. I keep other people at a distance too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>61. I let other people take advantage of me too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>62. I feel embarrassed in front of other people too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>63. I am affected by another person's misery too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>64. I want to get revenge against people too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
IIP-64: Roommate Version

People have reported the following problems in relating to other people. Please read the list below, and for each item consider whether you have observed these behaviours in your roommate with respect to any significant person in their lives. Then circle the appropriate number to describe how distressing that problem has been.

The following are things your roommate finds hard to do with other people:

**It is hard for my roommate to:**

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>A little bit</th>
<th>Moderately</th>
<th>Quite a bit</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Trust other people</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. Say “no” to other people</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. Join in on groups</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. Keep things private from other people</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. Let others know what s/he wants</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. Tell a person to stop bothering them</td>
<td>0</td>
<td>1</td>
<td>2</td>
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<td>4</td>
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<tr>
<td>7. Introduce them to new people</td>
<td>0</td>
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<tr>
<td>8. Confront people with problems that come up</td>
<td>0</td>
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</tr>
<tr>
<td>9. Be assertive with another person</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10. Let others know when they are angry</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11. Make a long term commitment to another person</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12. Be another person’s boss</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13. Be aggressive toward other people when the situation calls for it</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14. Socialize with other people</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15. Show affection to people</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
It is hard for my roommate to:

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>A little bit</th>
<th>Moderately</th>
<th>Quite a bit</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>16. Get along with people</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>17. Understand another person’s point of view</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>18. Express their feelings to other people directly</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>19. Be firm when they need to be</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>20. Experience a feeling of love for another person</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>21. Set limits on other people</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>22. Be supportive of another person’s goal</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>23. Feel close to other people</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>24. Really care about other people’s problems</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>25. Argue with another person</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>26. Spend time alone</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>27. Give a gift to another person</td>
<td>0</td>
<td>1</td>
<td>2</td>
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<td>4</td>
</tr>
<tr>
<td>28. Let themselves feel angry at somebody they like</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>29. Put somebody else’s need before their own</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>30. Stay out of other people’s business</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>31. Take instructions from people who have authority over them</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>32. Feel good about another person’s happiness</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>33. Ask other people to get together socially with them</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
**It is hard for my roommate to:**

<table>
<thead>
<tr>
<th>Question</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>34. Feel angry at other people</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>35. Open up and tell his/her feelings to another person</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>36. Forgive another person after s/he has been angry</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>37. Attend to his/her own welfare when somebody else is needy</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>38. Be assertive without worrying about hurting the other person’s feelings</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>39. Be self-confident when s/he is with other people</td>
<td>0 1 2 3 4</td>
</tr>
</tbody>
</table>

The following are things that your roommate does too much:

<table>
<thead>
<tr>
<th>Question</th>
<th>Rating</th>
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</thead>
<tbody>
<tr>
<td>40. S/he fights with other people too much</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>41. S/he feels too responsible for solving other people’s problems</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>42. S/he is too easily persuaded by other people</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>43. S/he opens up to people too much</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>44. S/he is too independent</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>45. S/he is too aggressive toward other people</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>46. S/he tries to please other people too much</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>47. S/he clowns around too much</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>48. S/he wants to be noticed too much</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>49. S/he trusts other people too much</td>
<td>0 1 2 3 4</td>
</tr>
</tbody>
</table>
The following are things that your roommate does too much:

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>A little bit</th>
<th>Moderately</th>
<th>Quite a bit</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>50. S/he tries to control other people too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>51. S/he puts other people’s needs before his/her own too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
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<td>4</td>
</tr>
<tr>
<td>52. S/he tries to change other people too much</td>
<td>0</td>
<td>1</td>
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<td>4</td>
</tr>
<tr>
<td>53. S/he is too gullible</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>54. S/he is overly generous to other people</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>55. S/he is too afraid of other people</td>
<td>0</td>
<td>1</td>
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<td>3</td>
<td>4</td>
</tr>
<tr>
<td>56. S/he is too suspicious of other people</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>57. S/he manipulates other people to get what s/he wants</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>58. S/he tells personal things to too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>59. S/he argues with other people too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>60. S/he keeps other people at a distance too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
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<td>4</td>
</tr>
<tr>
<td>61. S/he lets other people take advantage of him/her too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>62. S/he feels embarrassed in front of other people too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>63. S/he is affected by another person’s misery too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>64. S/he wants to get revenge against other people too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
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<td>4</td>
</tr>
</tbody>
</table>
Appendix B
LIFE EVENT SURVEY INTERVIEW

Please indicate whether each of the following events happened to you in the last 6 weeks.

1. Did poorly on or failed an exam or major project in an important course (i.e. grade less than C).
   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

2. Received a negative reaction from family or friends about not doing well in school (e.g. yelled at; called “dumb”, silent treatment; parents refused to pay tuition because of poor grades, etc.)
   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

3. Failed to achieve an important school related goal that does not involve GPA (e.g. did not get into orchestra; athletic team, etc.)
   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

4. Not accepted into major or college of choice because grades were too low.
   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

5. Put down by one or more teachers or TAs (e.g. ridiculed or called names in front of others).
   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

6. Got caught cheating on an exam, and there were severe consequences (e.g. flunked course, expelled, etc.).
   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

7. Dropped out of school because of unfortunate circumstances (e.g. not doing well, money problems, family problems).
   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

8. Failed a course.
   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks
9. Put on academic probation or earned an overall semester GPA of less than 2.0.

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

10. Very behind (by at least 2 weeks of work) in one or more important courses.

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

11. Negative consequences from studying for long periods of time (e.g. exhaustion; ill health; loss of friends; etc.).

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

12. Do not have enough time to do well in school, personal life, and job (if have job) (e.g. have to work long hours at job and have no time to study; study so much have no time to see boyfriend or girlfriend, etc.).

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

13. Have one or more classes with extremely undesirable features (e.g. professor hard to understand, TA or professor unavailable for questions, etc.).

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

14. Do not understand a significant amount of the material in one or more important courses (e.g. did not understand more than just one reading or lecture).

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

15. Dislike major or school in general, but have to stay (e.g. forced by parents to stay; have no skills to get a job, etc.).

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

16. Not doing as well in school as another family member or friend (e.g. perform less well than a friend or spouse even though work as hard; doing worse in school than parent did, etc.).

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks
17. Quit job because of negative aspects of job, not because of going back to school (e.g. quit after fight with boss, or because of poor working conditions; etc.).

   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

18. Laid off or fired from job.

   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

19. Unable to find work and want a job very much for financial or career reasons.

   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

20. Job has one or more undesirable features (e.g. dull, dangerous, etc.).

   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

21. Significant negative change in financial circumstances (e.g. large amount of money or valuables lost or stolen; loss of financial support; etc.)

   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

22. For at least 2 weeks, or for any duration if it caused an emergency, did not have enough money for one or more necessities and had to do without them (or, when living with family, family does not have enough money for one or more necessities). Necessities are health care, food, housing, necessary clothing.

   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

23. Significant fight or argument with close family member (parent, sibling, etc) that led to a serious consequence such as self or family member crying, temporary loss of privileges for self, etc.

   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

24. Family member (brother or sister or parent) got in serious trouble (with law; in school; at work; with parents, etc.).

   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

25. Got caught doing something disapproved of by parents, or parents found evidence of something they disapproved of (e.g. parents found drugs in room; parents found birth control devices, etc.).

   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks
26. Death of close family members or close friend.

____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

27. Frequent (at least once a week) fights or disagreements with one or more family members.

____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

28. Often put down by parents or shown dislike (e.g. called names, parents play favourites or make unfavourable comparisons between self and siblings, receive blame, family problems – parents say “we would be better off without you”).

____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

29. Frequent pressure and/or manipulation by parents – including pressure to agree with them (e.g. parents threaten to withdraw finances for disobeying; parents say “You don’t love me if don’t agree with them, etc.) or pressure to achieve things that could not or did not want to achieve (e.g. pressure to be a star athlete even though would rather concentrate on other interests, punished if do not excel at school, etc.)

____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

30. Parents infringe of privacy or freedoms (e.g. go through belongings, excessive questioning, overly strict, excessively protective, etc.).

____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

31. Frequent problems associated with living at home (e.g. too much time on chores, long distance to school, distracted by siblings, etc.).

____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

32. Parental absence lasting at least one month (e.g. due to military, jail term, job, etc.).

____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

33. Parent who wishes to be employed has been out of work for at least one month.

____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

34. Family member has significant medical or emotional problems that has lasted at least two weeks (e.g. heart disease, depression, excessive use of alcohol or drugs, etc.)

____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks
35. Interactions with parents lack pleasant features because rarely receive love, respect, or interest from parents (e.g. rarely receive compliments or praise from parents, rarely say “I love you,” parents do not listen or show interest, rarely call or write, etc.) or because time with parents is rarely spent in fun activities (e.g. discussion with parents are rarely fun; don’t go to fun places, etc.).

____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

36. Got in serious trouble with the law (e.g. arrested, spent time in jail, lost driver’s license)

____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

37. Left home to attend college and relationships with friends or family have changed for the worse (e.g. growing apart from friends etc.).

____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

38. Significant fight or argument with roommate that led to a serious consequence such as self or roommate crying, physical fight, leaving the room for the night, etc.

____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

39. Property violated by roommate (e.g. roommate stole money; damaged something intentionally, etc.)

____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

40. Frequently (at least once a week) cannot complete schoolwork or other important tasks because roommate is so noisy.

____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

41. Frequently (at least once a week) put down or made fun of by roommate.

____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

42. Unable to find roommate even though need one for financial or companionship reasons.

____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks
43. Live in poor conditions such as apartment, house, dorm, etc. that is overcrowded (e.g. more than two people in a bedroom) or is very dirty, rundown, or has many bugs or rodents.

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

44. Live alone and see other people less often than would like.

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

45. Significant fight or argument with friend other than roommate that led to a serious consequence such as self or friend crying, name calling, physical fight, etc.

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

46. Hurt by friend or peer (not physically) (e.g. insulted by friend or peer, confidence betrayed by friend, etc.) or made fun of or put down by friend or peer (e.g. called names etc.).

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

47. Hurt a friend or peer (not physically) (e.g. insulted a friend or peer, betrayed a friend’s confidence, called peer names, etc.).

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

48. Unwanted break-up of relationship with close friend.

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

49. Close friend moved away.

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

50. Friend experienced serious setback or failure (e.g. fired from job, GPA less than 2.0, lost an important competition, etc.).

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

51. Friend got in serious trouble (with law, in school, with parents, etc.).

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks
52. Death of pet to whom you were close or attached (e.g. death of your dog).
   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

53. Friends do not get along with each other.
   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

54. Close friend has serious medical or emotional problem that has lasted at least one month (e.g. asthma, serious injury, excessive use of alcohol or drugs, etc.).
   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

55. Have fewer friends than would like, or rarely sought out by others for activities or friendship (e.g. rarely called by others and asked to do something fun, etc.).
   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

56. Have no one to confide in.
   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

57. One or more friends are too domineering (e.g. always insists on getting his or her own way, insists on making most of the decisions, etc.).
   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

58. Rarely receive affection, respect, or interest from friends (e.g. rarely receive compliments or praise from friends, friends do not listen or take interest, etc.).
   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

59. Receive blame for problems between self and friends, or for friends’ personal problems (e.g. friend says things such as “My problems are because of you,” or, “I would be better off if you weren’t here.”).
   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

60. Significant fight or argument with boyfriend/girlfriend/spouse that led to a serious consequence such as self or boyfriend/girlfriend/spouse crying, leaving, common residence for one night, etc.
   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

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61. Unwanted final break up of relationship with boyfriend/girlfriend/spouse.
   _____ NO did not occur in the past 6 weeks   _____ YES did occur in past 6 weeks

62. While still involved with boyfriend/girlfriend/spouse, he or she had sex with another person.
   _____ NO did not occur in the past 6 weeks   _____ YES did occur in past 6 weeks

63. Received negative reaction (e.g. insulting comment) about boyfriend/girlfriend/spouse from an important person (e.g. parent, close friend, etc.).
   _____ NO did not occur in the past 6 weeks   _____ YES did occur in past 6 weeks

64. Boyfriend/girlfriend/spouse experienced serious setback or failure (e.g. fired from job, GPA less than or equal to 2.0, lost an important competition, etc.).
   _____ NO did not occur in the past 6 weeks   _____ YES did occur in past 6 weeks

65. Boyfriend/girlfriend/spouse got in serious trouble (with law, in school, etc.).
   _____ NO did not occur in the past 6 weeks   _____ YES did occur in past 6 weeks

66. Living apart from boyfriend/girlfriend/spouse due to school or career reasons (e.g. boyfriend/girlfriend/spouse goes to another school or lives in another city).
   _____ NO did not occur in the past 6 weeks   _____ YES did occur in past 6 weeks

67. Separated from boyfriend/girlfriend/spouse because of conflict, but final breakup of the relationship has not occurred.
   _____ NO did not occur in the past 6 weeks   _____ YES did occur in past 6 weeks

68. Boyfriend/girlfriend/spouse has significant medical or emotional problem for at least two weeks (e.g. heart disease, depression, excessive use of alcohol or drugs, etc.).
   _____ NO did not occur in the past 6 weeks   _____ YES did occur in past 6 weeks

69. Even though get along with boyfriend/girlfriend/spouse, often feel that he or she is not the “right” person.
   _____ NO did not occur in the past 6 weeks   _____ YES did occur in past 6 weeks
70. Receive peer pressure to date or to be in a stable couple’s relationship even though do not want to.

____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

71. Date less often than would like, or want a boyfriend/girlfriend/spouse but do not have one.

____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

72. Rarely receive love, respect, or interest from boyfriend/girlfriend/spouse (e.g. rarely receive compliments or praise, boyfriend/girlfriend/spouse rarely or never say “I love you,” boyfriend/girlfriend/spouse does not listen or take interest, etc.).

____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

73. Rarely spend time with boyfriend/girlfriend/spouse in fun activities (e.g. time together mainly involves business matters or doing chores; rarely have fun discussion together, etc.).

____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

74. Receive blame for problems between self and boyfriend/girlfriend/spouse or his/her personal problems (e.g. he/she says things such as “My problems are because of you,” “I would be better off if you weren’t here,” or “It’s your fault we don’t get along better,” etc.)

____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

75. Boyfriend/girlfriend/spouse is too domineering (e.g. he/she always insist on getting his/her way, insists on making most of the decisions, etc.).

____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

76. Dating partner(s) only interested in sex and not in other aspects of establishing a relationship (e.g. date only wants to have sex, not interested in talking, movies, dancing, dinner, etc., unless it leads to sex).

____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

77. Receive negative comments, or rarely receive praise about physical or sexual attractiveness or sexual performance.

____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks
78. Serious illness or injury from dieting (e.g. hospitalized, fainting from hunger, metabolism problems, etc.)

_____ NO did not occur in the past 6 weeks  _____ YES did occur in past 6 weeks

79. Frequently restrict activities or dress because of appearance (e.g. do not go swimming because do not want others to see body, avoid meeting people because of fear of receiving negative comments about appearance, etc.)

_____ NO did not occur in the past 6 weeks  _____ YES did occur in past 6 weeks

80. Frequently teased, ridiculed, or put down for appearance.

_____ NO did not occur in the past 6 weeks  _____ YES did occur in past 6 weeks

81. Serious negative consequences of drug or alcohol use (e.g. got arrested, divorce, medical problems, hospitalization, etc.) or frequent (at least once a week) loss of control over behavior (in work, school, relationships, etc.).

_____ NO did not occur in the past 6 weeks  _____ YES did occur in past 6 weeks

82. Failed at attempt to quit or reduce use of drugs, alcohol, or cigarettes.

_____ NO did not occur in the past 6 weeks  _____ YES did occur in past 6 weeks

83. Receive frequent negative comments about cigarette, drug, or alcohol use.

_____ NO did not occur in the past 6 weeks  _____ YES did occur in past 6 weeks

84. Receive frequent peer pressure to use drugs, alcohol, or cigarettes (e.g. do not like to take drugs but majority of friends get high often, rejected or ridiculed by friends if don’t use drugs, etc.).

_____ NO did not occur in the past 6 weeks  _____ YES did occur in past 6 weeks

85. Minor illness or injury (e.g. cold, sprained ankle, etc) or frequent temporary physical illnesses (e.g. headaches, menstrual cramps, recurrent bladder infections, dental problems, etc.)

_____ NO did not occur in the past 6 weeks  _____ YES did occur in past 6 weeks
86. Serious illness, accident, or injury resulting in, or likely to result in permanent disability (e.g. blindness, loss of use of leg, etc.) or in a serious consequence (e.g. accident or illness requiring hospitalization, illness requiring missing at least 2 weeks of work or school, etc.).

____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

87. Chronic disease or pain for at least two weeks (e.g. arthritis, diabetes, allergies, pain from illness or injury, etc.).

____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

88. Frequent side effects from medication.

____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

89. Loss of virginity which was completely or partially unwanted.

____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

90. Performed sexual activities for cash or other favours (e.g. taken out to a nice restaurant, or left a little extra cash in return for sex, etc.)

____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

91. Sexual difficulties lasting at least one month while sexually active (e.g. sex is painful, cannot maintain an erection, lack of pleasure from sex, etc.)

____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

92. Boyfriend/girlfriend/spouse had sexual difficulties lasting at least one month while sexually active (e.g. sex is painful, cannot maintain an erection, lack of pleasure from sex, etc.)

____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

93. Engage in sex much less often or much more often than would like.

____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

94. Receive peer pressure to engage in sexual activities even though do not want to.

____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks
95. Witnessed an accident or act of violence.

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

96. Received verbal threats of violence from a stranger or non-stranger (e.g. family member, friend, etc.).

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

97. Apartment, house, or room broken into.

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

98. Family member (other than self) victim of accident or violent crime.

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

99. Family member (other than self) physically abused or sexually abused by another family member.

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

100. Physically beaten by other person (beating more serious than a single hit with hand or object).

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

101. Pressured or forced by another person to engage in unwanted sexual activity (e.g. raped, pressured by non-violent threats such as being fired, teacher offered good grades for sex or threatened to give a bad grade for refusing sex, person continues with sexual activity in spite of complaint or protest, etc.)

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

102. Frequently receive unwanted physical or sexual contact or attention from another person (e.g. boss, teacher, friend or family member often makes unwanted physical contact or says obscene things, often receive obscene phone calls, etc.)

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

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103. Because of risk or danger, must make special arrangements or avoid activities at night (e.g. frequently stay home and miss activities rather than risk being out at night, often ask others for a ride or to be an escort at night, sometimes leave work early to catch the bus, etc.)

__ NO did not occur in the past 6 weeks  __ YES did occur in past 6 weeks

104. Must live in or travel through an area that is unsafe in the day and/or night and do nothing to reduce the risk or danger (e.g. do not have the money to move to a safer area, must walk alone because there is on one to walk home with after work at night).

__ NO did not occur in the past 6 weeks  __ YES did occur in past 6 weeks

105. Worked on something for school which did not enjoy working on or which did not care about.

__ NO did not occur in the past 6 weeks  __ YES did occur in past 6 weeks

106. Had a project or assignment for a class overdue.

__ NO did not occur in the past 6 weeks  __ YES did occur in past 6 weeks

107. Performed poorly on a minor school or school-related project or assignment (not on an important project or assignment) (e.g. did poorly on a minor quiz, could not answer a question the teacher had asked, did poorly in athletics, etc.).

__ NO did not occur in the past 6 weeks  __ YES did occur in past 6 weeks

108. Was bothered with administrative hassles or “red tape” in school.

__ NO did not occur in the past 6 weeks  __ YES did occur in past 6 weeks

109. Worked on something on the job which did not enjoy working on or which did not care about.

__ NO did not occur in the past 6 weeks  __ YES did occur in past 6 weeks

110. Was criticized or negatively evaluated about work on the job.

__ NO did not occur in the past 6 weeks  __ YES did occur in past 6 weeks

111. Had a project or assignment overdue.

__ NO did not occur in the past 6 weeks  __ YES did occur in past 6 weeks
112. Performed poorly on a task or work at home (e.g. cooked something that tasted bad).
   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks
113. Was bothered by administrative hassles or “red tape” at work.
   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks
114. Lied to a family member
   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks
115. Asked something by a family member, friend, or boyfriend/girlfriend/spouse that could not, or did not want to answer.
   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks
116. Asked something by a family member, friend, or boyfriend/girlfriend/spouse that could not, or did not want to answer.
   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks
117. Did something embarrassing in presence of family member.
   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks
118. Family member did something that I am ashamed about.
   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks
119. Was misunderstood or misquoted by family member.
   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks
120. Had something break or run poorly (e.g. car or appliance, etc).
   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks
121. Was out in very bad weather, or drove under bad conditions (e.g. was out in extreme heat or cold, drove in snow, heavy traffic, etc.)
   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks
122. Pet misbehaved (e.g. made a mess, etc.)
   ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks
123. Was awakened while trying to sleep.

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

124. Did something that did not want to do in order to please a friend, roommate, or boyfriend/girlfriend/spouse.

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

125. Lied to a friend, roommate, or boyfriend/girlfriend/spouse.

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

126. Lied to by a friend, roommate, or boyfriend/girlfriend/spouse.

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

127. Did something embarrassing in presence of friend, roommate, boyfriend/girlfriend/spouse.

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

128. Friend, roommate, or boyfriend/girlfriend/spouse did something that I am ashamed about.

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

129. Friend, roommate, or boyfriend/girlfriend/spouse borrowed money or personal belongings.

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

130. Was misquoted or misunderstood by friend, roommate, or boyfriend/girlfriend/spouse.

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks

131. Spent some time with people who do not share my interests or did something uninteresting with a friend.

   ____ NO did not occur in the past 6 weeks   ____ YES did occur in past 6 weeks
132. Had an unpleasant medical or dental appointment.

    ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

133. Hit or slapped by another person (with hand or object) leading to no serious consequences.

    ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

134. Got in minor trouble with the law (e.g. traffic violation, warning for disorderly conduct, etc.)

    ____ NO did not occur in the past 6 weeks  ____ YES did occur in past 6 weeks

135. Did any other negative or stressful EVENT (remember, events have occurrences) happen in the past 6 weeks? Indicate on line below.

EVENT:  
__________________________________________________________________________

136. Did any other negative or stressful SITUATION (remember, situations have duration) happen to you in the last 6 weeks? Indicate on the line below.

SITUATION:  
__________________________________________________________________________
Life Event Survey Probe

If YES: Number of occurrences of this event in each of the 2 WEEK periods during the past 6 weeks

<table>
<thead>
<tr>
<th></th>
<th>First 2 weeks</th>
<th>Middle 2 weeks</th>
<th>Last 2 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 1 2 3 or more</td>
<td>0 1 2 3 or more</td>
<td>0 1 2 3 or more</td>
<td></td>
</tr>
</tbody>
</table>

1. Can you tell me more about the event?

2. What were the reasons/causes of the event?

3. What happened after the event?

4. Think about the event. Before it happened, how sure were you that it would happen? Would you say that you were…

   Absolutely sure 4
   Very sure 3
   Fairly sure 2
   Not very sure 1
   It was completely unexpected 0

5. Which of the following terms best describe how you saw the event at the time it occurred? Would you say it was…

   Very good 1
   Fairly good 2
   Both good and bad 3
   Neither good nor bad 4
   Fairly bad 5
   Very bad 6

6. How much control do you believe you had over the event?

   Completely under your control 1
   Mostly under your control 2
   That you shared control equally with others 3
   That it was mostly under the control of others 4
   It was completely out of your control 5
Appendix C

Sample Residence Poster

VOLUNTEERS NEEDED
Mood and Roommate Relationships

We will be visiting your residence on:

DATE: ______________________________________

TIME: ______________________________________

PLACE: ______________________________________

TAKE A STUDY BREAK: PIZZA AND POP WILL BE PROVIDED!

If you are enrolled in Introductory Psychology, you are also eligible to earn your bonus points!

Both you and your roommate need to participate. I will ask you both to fill out a questionnaire now, and again next semester. The follow-up session will also include a brief interview. I am interested in mood, personality, interpersonal styles and stress.

If the above time is not convenient for you, please contact me at h56pg@unb.ca or at 488-8105 so we can make other arrangements. THANKS!

Lorna Scott
h56pg@unb.ca
488-8105

Lorna Scott
h56pg@unb.ca
488-8105

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h56pg@unb.ca
488-8105

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488-8105

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Mood and Roommate Relationship Study

Who is doing this study?
Lorna Scott, a Ph.D. student in clinical psychology, under the supervision of Dr. David Clark.

Who can participate?
All roommate pairs in the UNBF residence system.

What will participation involve?
You and your roommate will be asked to fill out anonymous questionnaires now, and then complete questionnaires and a brief interview again in 2 months’ time. I will be asking questions about your mood, personality, interpersonal style, and life stressors.

How long does it take?
The first questionnaire will take about 30-45 minutes to complete, and the follow-up questionnaire and interview approximately 60 minutes. If your are enrolled in Introductory Psychology, you are eligible for up to 4 bonus points.

How can I sign up or find out more?
Visit the Experimental Sign-Up System (EPS) online at: http://csrc.psyc.unb.ca/EPS/
Appendix D

INTRODUCTION TO RESEARCH PROJECT – PART I

Title of Project: Mood and Roommate Relationship Study

Principal Investigators: Lorna Scott
Department of Psychology, UNB
Tel: 488-8105
Email: h56pg@unb.ca

Dr. David Clark
Department of Psychology, UNB
Tel: 452-6224
Email: clark@unb.ca

DIRECTIONS

The following pages contain questions that deal with your feelings, attitudes, behaviours, and personality. The questionnaire battery consists of many different questionnaires. Each questionnaire has its own set of instructions describing how it should be completed. Please carefully read the instructions for each questionnaire before you begin answering the questions. Ideally, your roommate will also be participating in this study, however you are still welcome to participate without your roommate.

Since the questionnaires ask about personal matters, there are no right or wrong answers. You are asked to read each question carefully and then make a quick decision on your answer. Please work as quickly as you can, reading each question and providing honest answers to the questions.

If you are enrolled in Introductory Psychology, you will receive two participation points for taking part in this questionnaire portion of the study. As explained to you earlier, your participation is completely voluntary. You are free to leave at any time without losing your participation points. Also, you may choose not to answer any question(s) if you so desire. Your identity will be kept confidential, and your answers will be used only for the purposes of this research project. You will still receive your points if your roommate is not participating.

The questions or statements contained in these questionnaires focus on your evaluation of yourself and your roommate. Given the personal nature of the material, issues or emotions about yourself may be raised that you have not yet fully explored. As well you may find that completing these questionnaires provides you with a greater awareness of yourself. Please do not hesitate to contact the researcher or any of the contact numbers provided on your consent or debriefing form should you feel the need to discuss any aspect of the study.

If you would like to participate in the second part of this study, please ensure that you have provided the researcher with your contact information on the spaces provided on the consent form. Part 2 of the study involves completing a questionnaire package very similar to the one you are about to complete, and a 20-30 minute interview regarding life stressors.

Thank you for agreeing to take part in this study, your participation is gratefully appreciated.
INTRODUCTION TO RESEARCH PROJECT – PART II

Title of Project: Mood and Roommate Relationship Study
Principal Investigators: Lorna Scott
Dept. of Psychology, UNB
Tel: 488-8105
Email: h56pg@unb.ca

Dr. David Clark
Dept. of Psychology, UNB
Tel: 452-6224
Email: clark@unb.ca

DIRECTIONS

Thank you for agreeing to participate in the second half of the Mood and Roommate Relationship Study. This portion of the study consists of two parts, and the order of these parts may vary. You will be asked to complete a questionnaire package similar to the one you have already completed. You will also be invited to participate in an interview with respect to life stressors you may have experienced recently. Your roommate will also be asked to complete the questionnaires and interview. Should your roommate decline to participate, you are still welcome to.

The following pages contain questions that deal with your feelings, attitudes, behaviours, and personality. The questionnaire battery consists of many different questionnaires. Each questionnaire has its own set of instructions describing how it should be completed. Please carefully read the instructions for each questionnaire before you begin answering the questions. Since the questionnaires ask about personal matters, there are no right or wrong answers. You are asked to read each question carefully and then make a quick decision on your answer. Please work as quickly as you can, reading each question and providing honest answers to the questions.

If you are enrolled in Introductory Psychology, you will receive one participation point for taking part in the questionnaire portion of the study, and an additional one participation point for participating in the interview. As explained to you earlier, your participation is completely voluntary. You are free to leave at any time without losing your participation points. Also, you may choose not to answer any question(s) if you so desire. Your identity will be kept confidential, and your answers will be used only for the purposes of this research project. You will still receive your points if your roommate is not participating.

Given the personal nature of the material in the questionnaires and interview, issues or emotions about yourself may be raised that you have not yet fully explored. As well you may find that completing these tasks provides you with a greater awareness of yourself. Please do not hesitate to contact the researcher or any of the contact numbers provided on your debriefing form should you feel the need to discuss any aspect of the study.

Thank you for agreeing to take part in this study, your participation is gratefully appreciated.
Appendix E

CONSENT FORM – PART I

Title of Project: Mood and Roommate Relationship Study

Principal Investigators: Lorna Scott  
Dept. of Psychology, UNB  
Tel: 488-8105  
Email: h56pg@unb.ca  
Dr. David Clark  
Dept. of Psychology, UNB  
Tel: 452-6224  
Email: clark@unb.ca

This study is being conducted by Lorna Scott, a Ph.D. candidate in Clinical Psychology at the University of New Brunswick, under the supervision of Dr. David A. Clark, a psychology professor at the University of New Brunswick, and a licensed clinical psychologist. This is a study about some of the personal, interpersonal, and situational factors that contribute to depressed mood. As participants, you and your roommate will be invited to complete questionnaires now, and then again in approximately eight weeks’ time. You will also be asked to participate in a brief interview during the second data collection. Please indicate below if you are willing to be contacted for the second half of this study, and if so, provide your telephone number and/or email address so that you may be reached for an appointment.

The questionnaires you are being invited to fill out now will ask you about your current mood, aspects of your personality, your interpersonal style, and the interpersonal style of your roommate. You may find that some of these questions will be of a personal and/or sensitive nature. However, this study is confidential, so please do not put your name of student number anywhere on the questionnaire. Consent forms will be stored separately from your questionnaire. You will also be asked to provide a code for your questionnaire so that it can be matched to your roommate’s questionnaire. This code will be composed of numbers that both you and your roommate will know, but will not be obvious to the researchers. Only the researchers will have access to your completed questionnaire. It is not possible to match student ID numbers to individual questionnaires; student numbers will be used only to provide participants who are enrolled in Introductory Psychology with credit for participating in the study. Your questionnaires will be stored in a locked research lab to ensure their confidentiality for up to eight years in accordance with Canadian Psychological Association research guidelines, after which time all questionnaires will be destroyed.

While it is important that you answer all of the questions, you may decide, for reasons of your own, that you do not wish to respond to some of the questions. I would also like to remind you that if you agreed to participate in the study you are also free to discontinue (i.e. by not completing the questionnaire and/or by leaving) at any time without penalty and without question. If you decide to discontinue your participation you will still receive your participation point(s) if you are enrolled in Introductory Psychology.

It is expected that this portion of the study will take less than one hour to complete. Introductory Psychology students will receive two bonus points for each hour of participation. It is expected that the follow-up portion of the study will again take one hour to complete, and again, Introductory Psychology students may earn two bonus points for each
hour of participation. You will receive your points even if your roommate declines to participate.

It is not expected that you will experience any harm from your participation. The potential benefits of participating include learning more about psychological research and about one’s own response to standardized questions on feelings, thoughts, and relationships.

This study has been reviewed and has received ethics approval from the Research Ethics Board at the University of New Brunswick. You are free to contact Dr. Daniel Voyer, Department of Psychology Research Ethics Chairperson (453-4974 or voyer@unb.ca) if you have any concerns of questions about your participation in this study. You are also free to contact Lorna Scott or David Clark should you wish to discuss any aspect of the study or its impact on your.

Thank you for your assistance in this research project.

I agree to participate in a study conducted by Lorna Scott (Ph.D. Candidate) and Dr. David Clark on the impact of personal, interpersonal, and situational factors that contribute to depressed mood. I have made this decision based on the information I have read in the Introductory Sheet and Consent Form and have had all my questions about participating in the experiment addressed by the experimenter. I understand that I may withdraw this consent at any time by declaring this intention to the experimenter. I realize that I will not incur any penalty or lose my participation point for withdrawing my consent. I also understand that this project has been evaluated and received ethics clearance by the Research Ethics Board at the University of New Brunswick. If you have any concerns about this study, you can contact the Chairperson of the UNB Research Ethics Board, Dr. Peter Kepros (kepros@unb.ca).

If you are willing to participate in this experiment, please sign both copies of the Consent Form and keep one copy for your records.

Participant’s Name (please print): ________________________________

Participant’s Signature: ________________________________

Participant’s Student Number: ________________________________

Date: ________________________________

Please check if applicable:

___ YES! I am interested in participating in the second half of this study. A phone number or email address at which I can be reached to schedule an appointment is:

____________________________________________________________________
CONSENT FORM – PART II

Title of Project: Mood and Roommate Relationship Study

Principal Investigators: Lorna Scott
Dept. of Psychology, UNB
Tel: 488-8105
Email: h56pg@unb.ca

Dr. David Clark
Dept. of Psychology, UNB
Tel: 452-6224
Email: clark@unb.ca

This study is being conducted by Lorna Scott, a Ph.D. candidate in Clinical Psychology at the University of New Brunswick, under the supervision of Dr. David A. Clark, a psychology professor at the University of New Brunswick, and a licensed clinical psychologist. This is a study about some of the personal, interpersonal, and situational factors that contribute to depressed mood. As participants, you and your roommate will be invited to participate in a brief interview and fill in a questionnaire similar to the one you completed in Part I.

The questionnaires you are being invited to fill out now will ask you about your current mood, aspects of your personality, your interpersonal style, and the interpersonal style of your roommate. You may find that some of these questions will be of a personal and/or sensitive nature. However, this study is confidential, so please do not put your name or student number anywhere on the questionnaire. Consent forms will be stored separately from your questionnaire. You will also be asked to provide a code for your questionnaire so that it can be matched to your roommate’s questionnaire. This is the same code that was used in Part I of this study. Only the researchers will have access to your completed questionnaire. It is not possible to match student ID numbers to individual questionnaires; student numbers will be used only to provide participants who are enrolled in Introductory Psychology with credit for participating in the study. Your questionnaires will be stored in a locked research lab to ensure their confidentiality for up to eight years in accordance with Canadian Psychological Association research guidelines, after which time all questionnaires will be destroyed.

While it is important that you answer all of the questions, you may decide, for reasons of your own, that you do not wish to respond to some of the questions. I would also like to remind you that if you agreed to participate in the study you are also free to discontinue (i.e. by not completing the questionnaire and/or by leaving) at any time without penalty and without question. If you decide to discontinue your participation you will still receive your participation point(s) if you are enrolled in Introductory Psychology.

It is expected that this portion of the study will take less than one hour to complete. Introductory Psychology students will receive two bonus points for each hour of participation. It is expected that the follow-up portion of the study will again take one hour to complete, and again, Introductory Psychology students may earn two bonus points for each hour of participation. You will receive your points even if your roommate declines to participate.
It is not expected that you will experience any harm from your participation. The potential benefits of participating include learning more about psychological research and about one’s own response to standardized questions on feelings, thoughts, and relationships.

This study has been reviewed and has received ethics approval from the Research Ethics Board at the University of New Brunswick. You are free to contact Dr. Daniel Voyer, Department of Psychology Research Ethics Chairperson (453-4974 or voyer@unb.ca) if you have any concerns about your participation in this study. You are also free to contact Lorna Scott or David Clark should you wish to discuss any aspect of the study or its impact on you.

Thank you for your assistance in this research project.

I agree to participate in a study conducted by Lorna Scott (Ph.D. Candidate) and Dr. David Clark on the impact of personal, interpersonal, and situational factors that contribute to depressed mood. I have made this decision based on the information I have read in the Introductory Sheet and Consent Form and have had all my questions about participating in the experiment addressed by the experimenter. I understand that I may withdraw this consent at any time by declaring this intention to the experimenter. I realize that I will not incur any penalty or lose my participation point for withdrawing my consent. I also understand that this project has been evaluated and received ethics clearance by the Research Ethics Board at the University of New Brunswick. If you have any concerns about this study, you can contact the Chairperson of the UNB Research Ethics Board, Dr. Peter Kepros (kepros@unb.ca).

If you are willing to participate in this experiment, please sign both copies of the Consent Form and keep one copy for your records.

Participant’s Name (please print): __________________________________________

Participant’s Signature: _______________________________________________

Participant’s Student Number: ___________________________________________

Date: ________________________________________________________________
Appendix F

PARTICIPATION FEEDBACK – 1

Title of Project: Mood and Roommate Relationship Study

Principal Investigators: Lorna Scott  
Dept. of Psychology, UNB  
Tel: 488-8105  
Email: h56pg@unb.ca

Dr. David Clark  
Dept. of Psychology, UNB  
Tel: 452-6224  
Email: clark@unb.ca

Thank you for participating in this study. The purpose of this study is to look at how personality, interpersonal behaviours, and life event stress interact on depressed mood. There are three models of interest being examined. First, Beck’s (1983, 1987) cognitive vulnerability model suggests that depression results from the interaction of vulnerable personality types and negative life events. Second, Coyne’s (1976) interactional model suggests that the negative interpersonal behaviours of depressed individuals ultimately result in rejection from others which contributes to the maintenance of their depression. Finally, Hammen (1991) suggested that depressed and/or people who are vulnerable to depression may generate an increased level of personal stress that ultimately contributes to the onset and recurrence of depression. The present study combines these three theories in the model outlined by Zuroff et al. (2004) to examine the question of whether cognitively vulnerable individuals who experience stress and difficult interpersonal relationships become more depressed over time. To do this, the interaction of cognitive personality vulnerability, negative interpersonal interactions, and stress in the prediction of depressive symptoms will be examined in the contest of the university residence roommate relationship.

The results of this study will be used to help up better understand the nature of the onset and recurrence of depression, a mental health problem that currently affects a large number of young adults – and appears to be on the rise. This knowledge will ultimately aid in the treatment and prevention of depression.

If you are interested in reading more about this topic, these readings may be of interest to you:


Resource List

Some participants may find themselves wanting to discuss with a supportive person, feelings or issues that arise out of participation in this study. Below is a list of resources, or please feel free to contact the researchers.

Resources for UNB/STU Students: Resources for Fredericton and area:

UNB Counselling Services: 453-4820 CHIMO Telephone Help-Line: 450-4357
Student Health Centre: 453-4837 Fredericton Mental Health Centre: 453-2132
PARTICIPATION FEEDBACK – II

Title of Project: Mood and Roommate Relationship Study

Principal Investigators: Lorna Scott Dr. David Clark
Dept. of Psychology, UNB Dept. of Psychology, UNB
Tel: 488-8105 Tel: 452-6224
Email: h56pg@unb.ca Email: clark@unb.ca

Thank you for participating in this study. The purpose of this study is to look at how personality, interpersonal behaviours, and life event stress interact on depressed mood. Depression can be a significant problem for college students. University can offer exciting new experiences and challenges, but it can also be a stressful time that can make you sad. When this sadness lasts for days or weeks, interfering with social and academic functioning, it may be that you are experiencing clinical depression. Depression can affect your mood, thoughts, and behaviour. It can change your eating habits, how you feel and think about things, your ability to work and study, and how you interact with people. Even milder forms of depression can have a significant impact on your ability to function.

There are many factors that are believed to contribute to depression. It appears that it is a combination of genetic, psychological, and environmental factors involved in the onset of clinical depression. This study is interested in the psychological and environmental factors that are unique for college students. Namely, how the personalities of the roommates, how they interact with each other, and the types of stresses they are experiencing in their lives all play a role in predicting whether a persona becomes more depressed. The two personality types of relevance to this study are called sociotropy and autonomy. Persons who are sociotropic are characterized as having a high need for love, acceptance, and approval from others, and fear abandonment and rejection from those they are close to. Autonomous individuals, in contrast, are characterized as having a high need for success and achievement, are highly concerned with independence and self-reliance, and have a marked lack of concern for others. Persons with such personalities are thought to be more vulnerable to depression when they experience a stressful event which is a “trigger” for their personality type. For example, a person who is highly sociotropic would be more likely to become depressed following an event with social implications such as a fight with a friend, whereas an autonomous person may be more vulnerable following an achievement event such as failing a class.

The social context in which a depressed person operates also plays a significant role – particularly in the maintenance of depressed mood. Signs of depression such as withdrawal, irritability, and hopelessness, put a strain on relationships. Because depression can affect the way a person interacts with others, living with a person who is
depressed can be very challenging. Family and friends can be very much affected by depression. In fact, those living with someone who is depressed are believed to be much more likely to become depressed themselves. This may also be true for roommates, a possibility that this study is investigating.

The results of this study will be used to help us better understand the nature of the onset and recurrence of depression, an mental health problem that currently affects a large number of young adults – and appears to be on the rise. This knowledge will ultimately aid in the treatment and prevention of depression.

If you are interested in reading more about this topic, these readings may be of interest to you:


**Resource List**

Some participants may find themselves wanting to discuss with a supportive person, feelings or issues that arise out of participation in this study. Below is a list of resources, or please feel free to contact the researchers.

<table>
<thead>
<tr>
<th>Resources for UNB/STU Students</th>
<th>Resources for Fredericton and area</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNB Counselling Services: 453-4820</td>
<td>CHIMO Telephone Help-Line: 450-4357</td>
</tr>
<tr>
<td>Student Health Centre: 453-4837</td>
<td>Fredericton Mental Health Centre: 453-2132</td>
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### Appendix G

Table K1

*Hierarchical Regression Analysis Predicting Time 2 Depression Scores using Time 1 Predictors with Achievement and Interpersonal Stress*

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Depression Scores (BDI-II) (a)</th>
<th>(r)</th>
<th>(\beta)</th>
<th>(sr)</th>
<th>(R^{2\text{chg}})</th>
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</table>

Final \(R^2\) .70

*Note. n = 59; *\(p<.05\). **\(p<.01\). ***\(p<.001\)*
Appendix H

Mail :: INBOX: REB File # 2005-120

Date: Mon, 17 Oct 2005 20:04:41 -0000
From: Peter Kepros <PKepros@nbnet.nb.ca>
To: "Ms. Lorna Scott" <lscott@unb.ca>
Cc: "Dr. D. Clark" <dclark@unb.ca>, "Mr. Rande Mortal" <rmortal@unb.ca>
Subject: REB File # 2005-120

Dear Mr. Scott,

As Chair of the Research Ethics Board (REB), I have reviewed your application (Cognitive Vulnerabilities to Depression in an Interpersonal and Stress Generation Context—REB #2005-120) for its compliance with Tri-Council Policy (TCP) and with UNB Policy (UNBP). On the basis of the review, I consider your project to be eligible for expedited review since any risk to participants that might exist appears not to exceed the "minimal risk" outlined in TCP.

I am pleased to inform you that, in my opinion, your project appears to be in compliance with TCP and UNBP. Accordingly, please consider this E-mail to represent notification of REB approval of your project. Formal approval will be sent from the Office of the Vice-President (Research) in a few days.

Please note that, in the future, if you find that you must make any changes to your protocol, any such changes must be considered and approved by the REB before they are implemented.

Best wishes for the successful completion of your research project.

Peter Kepros, Ph.D.
Professor and Dean Emeritus and Chair
UNB Research Ethics Board

e-mail: kepros@unb.ca or pkepros@nbnet.nb.ca or ethics@unb.ca

Telephone: 453-5189 (work) 459-3078 (home)

CIRRICULUM VITAE

LORNA SCOTT

I. PERSONAL INFORMATION

Department Address: Psychology Department
University of New Brunswick
Bag Service #45444
Fredericton, NB E3B 6E4
Tel: (506) 453-4707

Home Address: 365 Upper Hampstead Road
Upper Hampstead, NB E5M 1X3
Tel: (506) 488-8105

Email: lornascott@live.ca

Citizenship: Canadian

II. EDUCATION

1997-2011; 2016 Ph.D., Clinical Psychology
University of New Brunswick
CPA accredited program
Supervisor: Carmen Poulin, Ph.D.

1995-1997 B.A. Psychology, First Class Honours
Brock University, St. Catharines, Ontario
Supervisor: Nancy DeCourville, Ph.D.

1990-1994 B.Sc. Biology
University of Victoria, Victoria, British Columbia

Honours and Awards

1999-2002 Social Sciences and Humanities Research Council Graduate Fellowship,
$17,000 per annum.

1998-1999 University of New Brunswick Arts Faculty Graduate (Ph.D.) Assistantship
(awarded annually through competition)
$10,250 per annum.

1997-1998 University of New Brunswick Arts Faculty Graduate (M.A.) Assistantship
(awarded annually through competition)
$9,200.00 per annum.
1995-1997      Dean’s List, Brock University
1996-1997       In-course Scholarship, Brock University, $1500.00.

Theses and Comprehensives:

2016          Cognitive vulnerabilities to depression in an interpersonal and stress
generation context. Ph.D. thesis under Carmen Poulin, Ph.D., Department
of Psychology, University of New Brunswick.

2003          Where is the community in clinical psychology? Comprehensive project
under Janet Stoppard, Ph.D. Department of Psychology, University of
New Brunswick.

1997          The effect of life event change, attitudes toward menopause, and
menopausal stage on menopausal symptom reporting. B.A. thesis under
Nancy DeCourville, Ph.D., Psychology Department, Brock University.

III. CLINICAL TRAINING AND EXPERIENCE

Clinical Experience:

Lorelei Walsh Park and Associates, Oromocto, New Brunswick
Dates:       August 2006 – August 2011
Position:    Psychological Associate
Responsibilities: Providing individual therapy and comprehensive assessments with
children, adolescents and adults presenting with anxiety, mood,
traumatic stress and coping issues, and personality disorders in a
private practice setting.
Supervisor:  Lorelei Walsh Park, Ph.D., L.Psyc.

Predoctoral Clinical Internship, University of Manitoba, Winnipeg, Manitoba
Dates:       September 2004 – August 2005
Position:    Psychology Intern
Hours:       2000 hours

The Predoctoral Clinical Internship at the University of Manitoba consisted of 2 major (3
days/week) and 2 minor rotations (1 day/week). An additional one day per week was
devoted to educational seminars and case conferences. This internship site is accredited
by both the American Psychological Association and the Canadian Psychological
Association.
St. Boniface General Hospital, Winnipeg – Major Rotation
Dates: September 1, 2004 – February 28, 2005
Assessment experience included adult inpatient psychiatric consultations, as well as outpatient assessments covering a wide range of mental health (e.g. anxiety, mood, and personality disorders) and health (e.g. pain, adjustment to illness) concerns. Also provided outpatient cognitive-behavioural and interpersonal therapeutic interventions in the adult and elderly populations, including co-facilitating a 12-week therapy group for depression, based on the Changeways™ program.
Supervisor: Hal Walbridge, Ph.D., C.Psych.

Children’s Hospital, Child Development Clinic, Winnipeg – Minor Rotation
Dates: September 1, 2004 – February 28, 2005
Conducted comprehensive assessments of young children (ages 3 – 11), and provided short-term play-therapy and behavioural interventions with children and their families. Primary presenting concerns included Alcohol Related Neurodevelopmental Disorders, Attention Deficit Hyperactivity Disorder, Learning Disorders, Childhood Depression, and Childhood Traumas.
Supervisor: Valerie Kamaya-Miyakawa, Ph.D., C.Psych.

Interlake Regional Health Authority, Selkirk, MB – Major Rotation
Dates: March 1 – August 31, 2005
Provided psychological services on a consultative basis for multiple health centres in a rural setting. Responsibilities included conducting comprehensive cognitive and personality assessments for children, adolescents, and adults, as well as therapeutic interventions for individuals, couples, and families. Consultation and training for community mental health workers was also provided.
Supervisor: Karen Dyck, Ph.D., C.Psych.

Selkirk Mental Health Centre, Selkirk, MB – Minor Rotation
Dates: March 1 – August 31, 2005
The focus of the rotation was to provide diagnostic assessments for the severely mentally ill in an adult psychiatric inpatient setting. Primary presenting concerns included psychotic, mood, personality, and anxiety disorders.
Supervisor: Susan Holm, Ph.D. C.Psych.
Dr. Everett Chalmers Hospital, Fredericton, New Brunswick
Dates: November 2002 – March 2004
Position: Psychometrist II
Responsibilities: For the first 12 months (parental leave position), the focus of the position was on the psychological assessment and treatment of adult cancer patients in a regional oncology clinic. Assessment experience included cognitive and personality assessments with cancer in- and outpatients. Therapy experience included cognitive-behavioural and interpersonal interventions with patients and their families, including end-of-life issues. The following 6 months (a second parental leave position) was a health psychology position, the focus of which was primarily on the treatment of complex pain disorders and health anxiety. Throughout both contracts, I facilitated a Stress Management psychoeducational group for cardiac inpatients.
Supervisor: Dean Snow, Ph.D., L.Psyc.

Joan Wright & Associates, Fredericton, New Brunswick
Dates: June 2002 - present
Position: Psychological Associate
Responsibilities: Individual therapy and assessment with adolescents and adults presenting with anxiety disorders, mood disorders, sexual abuse issues, and stress and coping issues in a private practice setting.
Supervisor: Joan Wright, Ph.D., L.Psyc.

Joan Wright & Associates, Fredericton, New Brunswick
Dates: September 2001 – June 2002
Position: Clinical Practicum III
Responsibilities: Focus of practicum was on therapeutic interventions and assessment with adolescents and adults presenting with anxiety disorders, mood disorders, and stress and coping issues.
311 hours
Supervisor: Joan Wright, Ph.D., L.Psyc.

Community Mental Health Services, Saint John, New Brunswick
Position: Clinical Practicum II
Responsibilities: Focus of practicum was on psychological assessment and treatment of children and adolescents. Provided short-term individual therapeutic interventions to children and adolescents receiving outpatient mental health services. Also provided cognitive and personality assessments for the acute child/adolescent team, including assessments relating to anxiety, depression and Attention Deficit/Hyper-Activity Disorder.
345 hours
Supervisor: Jean Craven, Ph.D., L.Psyc.
Dr. Everett Chalmers Hospital, Fredericton, New Brunswick

Dates: May 1999 – August 1999
Position: Clinical Practicum I
Responsibilities: Focus of practicum was on the psychological assessment and treatment of psychiatric adult in-patients. Assessment experience included cognitive and personality assessment relating to anxiety, depression, PTSD, and psychosis. Therapy experience included cognitive-behavioural interventions, as well as facilitating the Relaxation Therapy group for psychiatric in-patients. I also participated in Stress Management, Mind over Mood, and Self-Esteem out-patient groups.
460 hours
Supervisor: Wendy Rogers, Ph.D., L.Psyc.

IV. RESEARCH ACTIVITIES

Research Experience

2000-2003 Research Assistant
University of New Brunswick & Dr. Everett Chalmers Hospital, Fredericton.
Referral characteristics, decision-making, and outcome variables that affect utilization of psychological services in the treatment of breast cancer. Responsible for conducting and analyzing chart reviews and interviews with women undergoing treatment for breast cancer.
Supervisors: David A. Clark, Ph.D., L.Psyc.
Rama Gupta-Rogers, Ph.D. L.Psyc.

1999-2003 Research Project II
University of New Brunswick
The development of a measure of affect regulation. Data was collected from 245 undergraduate students in an attempt to develop a measure of mood regulation styles.
Supervisor: David A. Clark, Ph.D., L.Psyc.

1998-2001 Human Sexuality Research Group
University of New Brunswick
Activities include: reviewing articles for scholarly journals, discussions of topics relevant to the area of human sexuality, offering input and feedback regarding group members’ research projects.
1997-1998  **Research Project I**  
University of New Brunswick  
An exploratory study of mood regulation in college students. Responsible for conducting, analyzing, and reporting findings from semi-structured interviews with 50 undergraduate students regarding the cognitive and behavioural strategies they use for regulating their moods.

**Publications and Proceedings**


**Presentations**


**Non-Refereed Publications**


**Invited Presentations**


Scott, L. (2000, January). *Results of the University of New Brunswick residences survey regarding mental health and suicide risk.* January Jam training session for Residence Staff, University of New Brunswick, Fredericton, NB.

V. TEACHING EXPERIENCE

Courses Taught

Jan – April 2000  **Inferential Statistics for Psychology Students**
As required for my teaching apprenticeship I was responsible for teaching Inferential Statistics to 40 undergraduate students. Responsibilities included designing the course syllabus, lectures, computer labs, examinations and assignments, as well as marking and assigning grades.
Supervisor: Barry Spinner, Ph.D.

Teaching Assistantships

1998-2000  **Tutorial Leader – Human Sexuality**  
University of New Brunswick
Responsible for facilitating discussion and leading activities with groups of approximately 20 undergraduate students. Topics included: sexual communication, AIDS, sexual violence, sex and aging, and sex therapy.

1997-1998  **Introductory Psychology Co-ordinator**  
University of New Brunswick
Responsible for tracking research credit points for over 1000 Introductory Psychology undergraduate students, as well as designing midterm and final exams.

1996-1997  **Tutorial Leader – Psychology of Women**  
Brock University, St. Catherines, ON.
Responsible for facilitating discussion with groups of approximately 15 undergraduate students. Topics included: gender roles, images of women, aging, marriage, and motherhood.

1995-1997  **Laboratory Demonstrator – Biology, A Human Perspective**  
Brock University, St. Catherines, ON.
Responsible for teaching basic biological principles to undergraduate Arts students, as well as grading lab reports. Topics included: Mendelian genetics, mitosis and meiosis, human anatomy and physiology, cancer, and AIDS.

**Laboratory Demonstrator – Botany**  
Brock University, St. Catherines, ON.
Responsible for teaching plant anatomy, reproduction, taxonomy, and ecology to groups of approximately 20 undergraduate biology students. Also responsible for marking lab reports.