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Interpersonal Functioning and Depression:
Reassurance-Seeking, Negative Self-Verification,
and the Integration of Sociotropic and Autonomous Personality Styles

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A dissertation submitted to
the School of Graduate and Postdoctoral Studies of the University of Ottawa
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Table of Contents

Table of Contents	ii
List of Tables	iv
List of Figures	v
Abstract	vi
Introduction	1
Overview	1
Interpersonal Theory of Depression	5
The Reassurance-Seeking Hypothesis	7
Self-Verification Theory	10
Self-Verification Theory in Depression	12
The Integration of Reassurance-seeking and Negative Self-Verification	17
Sociotropic and Autonomous Personality Styles	20
Personality Style and Interpersonal Functioning	21
Limitations of Interpersonal Theory: The Issue of Enduring Relationships	25
Purpose of Study and Hypotheses to be Tested	27
Method	36
Procedure and Participants	36
Measures	40
Results	47
Data Screening	47
Characteristics of the sample	49

Interpersonal functioning and personality styles in depression iii

Correlations among measures	56
Tests of the Moderating Hypotheses	60
Tests of the Causal Path Model	67
Sociotropy Model	69
Autonomy Model	70
Exploratory Analysis	77
Discussion	81
Interpersonal Theory of Depression	81
Findings for Husbands	82
Findings for Wives	86
Interpersonal Theory and Personality Style	87
Sociotropy Model	88
Autonomy Model	91
On-line Research	93
Limitations of the Present Study	95
Summary	98
References	101
Appendix A	115
Appendix B	118
Appendix C	121
Appendix D	131

List of Tables

Table 1	Means and standard deviations for the demographic and study variables.....	51
Table 2	Sample characteristics: Education level.....	52
Table 3	Sample characteristics: Employment status.....	53
Table 4	Sample characteristics: Combined income level.....	54
Table 5	Bivariate correlations among wives' variables.....	57
Table 6	Bivariate correlations among husbands' variables.....	58
Table 7	Bivariate correlations among wives' and husbands' variables.....	59
Table 8	Partner rejection, reassurance-seeking, negative self-verification at Time 1 predicting residual changes in depression from Time 1 to Time 2 in husbands.....	63
Table 9	Partner rejection, reassurance-seeking, negative self-verification at Time 1 predicting residual changes in depression from Time 1 to Time 2 in wives.....	64
Table 10	Goodness-of-fit statistics for husbands and wives for the proposed model.....	72

List of Figures

Figure 1	Path diagram of the sociotropy model.....	32
Figure 2	Path diagram of the autonomy model.....	33
Figure 3	Reassurance-seeking, negative self-verification, partner rejection interaction as a result of residual change scores in depression in husbands.....	65
Figure 4	Reassurance-seeking, negative self-verification, partner rejection interaction as a result of residual change scores in depression in wives.....	66
Figure 5	Standardized estimates for the sociotropy model for wives.....	73
Figure 6	Standardized estimates for the sociotropy model for husbands.....	74
Figure 7	Standardized estimates for the autonomy model for wives.....	75
Figure 8	Standardized estimates for the autonomy model for husbands.....	76
Figure 9	Exploratory model for husbands with standardized estimates.....	79
Figure 10	Reassurance-seeking, negative self-verification, and partner rejection interaction as a result of autonomy scores in husbands.....	80

Abstract

Coyne's (1976a) interpersonal theory outlines a negative cycle of interactions wherein rejection by relationship partners may exacerbate depressive symptoms. Reassurance-seeking and negative self-verification are two theoretically based moderators of the rejection-depression relationship. Sociotropy and autonomy are two personality styles believed to influence individuals' perceptions of social interactions and interpersonal functioning. In this thesis, I attempted to expand on interpersonal theory and to integrate personality styles with interpersonal variables related to depression.

An online community sample of 135 married or cohabiting couples completed a series of measures that assessed depression, interpersonal behaviours, and personality styles. Depression was measured again 3 months later in 78 couples. For husbands, high levels of rejection were always associated with increased depression over time, except when husbands sought neither reassurance nor negative self-verification. This suggests that husbands are generally vulnerable to wives' rejection, except for those who limit communication. This finding was discussed in terms of the demand-withdraw cycle described in marital research. In addition, increased depression was associated with a combination of high levels of reassurance-seeking, negative self-verification, and rejection, consistent with previous research. However, unexpectedly, the highest increase in depression was associated with high levels of reassurance-seeking and rejection, but *low* negative self-verification. Sample differences in relationship duration may explain this finding. For wives, rejection was associated with increased depression only when they sought reassurance. Furthermore, wives who sought reassurance and were not

rejected actually became less depressed. The positive role of support-seeking was discussed.

Testing the integrated theory revealed that the association between sociotropy and depression, in both husbands and wives, was mediated by the combination of reassurance-seeking and rejection. This finding is consistent with Coyne's original interpersonal description of depression and accounts for past research showing an inconsistent relationship between sociotropy and depression. Furthermore, reassurance-seeking in the absence of rejection resulted in reduced change in depression. In contrast, autonomy was not related to interpersonal variables, in both husbands and wives. Exploratory analyses for husbands revealed that the relationship between autonomy and depression is complex.

Finally, this thesis supports the use of internet studies for couples research. Evidence was provided to suggest that the internet is a viable medium for conducting psychological research.

Introduction

Overview

Depression may be conceptualized as an interpersonal phenomenon. There is a wealth of research suggesting that the complaints of depressed individuals are not simply a result of cognitive distortions but arise in the context of conflictual and unsupportive relationships (for reviews, see Barnett & Gotlib, 1988; Gotlib & Hooley, 1988; Gotlib & Whiffen, 1991). Thus, interactions with others can be seen as fundamental in the development, maintenance, and exacerbation of depressive symptoms. Theories have been developed that attempt to describe the nature of the complex interaction system between depressed individuals and others in their environment. Within this work, attention has primarily been given to behaviours exhibited by depressed persons, the reciprocal behaviours of others, and their mutual influences on one another.

The first comprehensive theory in this area is interpersonal theory, developed by Coyne (1976a). The core tenet of this theory is a negative interaction style. Depressed individuals are believed to engage others in their environment in a way that results in a loss of support and consequently an increase in depression. That is, they initially seek support and reassurance from others (Joiner, Alfano, & Metalsky, 1992, 1993; Joiner, Metalsky, Katz, & Beach, 1999) and others attempt to provide comfort. However, through a series of thwarted needs and frustrations on the part of both the depressed individual and others, they instead communicate rejection. The end result is a negative and repetitive interaction cycle that causes depression to be maintained or exacerbated.

Contributing to an understanding of interpersonal theory is self-verification theory. This theory, conceptualized by Swann (1983, 1987), is based on the core assumption that people have firmly held views of themselves and that they want to preserve their self-concepts by seeking confirmatory feedback from others. Individuals are motivated to seek feedback that is consistent with their self-concepts, regardless of whether this information is negative or positive in nature. Efforts have been made to use self-verification theory to explain how depression is maintained and exacerbated (Geisler, Josephs, & Swann, 1996; Swann, Wenzlaff, Krull, & Pelham, 1992; Swann, Wenzlaff, & Tatarodi, 1992). Within this work, it is hypothesized that individuals with depression are determined, like all people, to seek and receive information from others that confirms their self-views. However, because depressed persons are often plagued with a negative self-concept, they desire to confirm images of themselves by seeking negative information from others. This interaction style is believed to perpetuate depressed mood.

A very different approach to the study of depression focuses on personality styles that act as predisposing vulnerabilities to depression. Investigators from different theoretical backgrounds have identified personality features that influence depressed individuals' perceptions of social interactions and interpersonal functioning. Two broad categories of interpersonal styles have been identified. One style—labelled sociotropy or dependency—is related to a high need for affiliation with others, and the other—labelled autonomy or self-criticism—is related to a high need for independence and achievement (e.g., Arieti & Bemporad, 1980; Beck, 1983; Blatt, Quinlan, Chevron, McDonald, & Zuroff, 1982; Blatt & Zuroff, 1992).

This dissertation aims to contribute to our understanding of depression in a number of ways. First, I explore the research testing different aspects of interpersonal theory. I then attempt to expand on this theory by further examining the interpersonal factors that are related to depression. Second, I further develop the interpersonal description of depression by incorporating interpersonal theory and self-verification theory with the depressive personality styles. This work examines how these separate literatures can be combined to provide an expanded description of depression. This thesis makes a novel contribution to the literature by testing how the personality styles relate to interpersonal behaviours implicated in depression, namely excessive reassurance-seeking, negative self-verification, and rejection.

Throughout this dissertation, a distinction is made between self-reported depressive symptoms and clinically diagnosed depression. Many researchers equate distress with clinical symptoms. However, there may be important differences between the two. One view is that the characteristics of mild to severe levels of depression differ in degree along a continuum and that symptoms differ only in severity and persistence (Flett, Vredenburg, & Krames, 1997). A contrasting view is that clinically diagnosed depression is a discrete category and that self-reported distress is distinct from diagnosed depression (Coyne, 1994). Recent evidence from a study conducted by Santor and Coyne (2001) provides compelling evidence for the latter perspective. These authors found that clinically depressed individuals and distressed individuals equated in terms of symptom severity exhibit different depressive symptoms. Symptoms of depressed mood, anhedonia, and suicidality were more likely to be found in depressed than in distressed

individuals with similar levels of symptom severity, and hypochondriasis and middle insomnia were more likely to be found in nondepressed individuals. Throughout this dissertation, a distinction is made between clinically diagnosed depression and depressive symptomatology. The terms “depression” and “depressive symptoms” are used to refer to distress, normally based on self-report measures, whereas “clinical depression” refers to clinically diagnosed depression. Note, however, that the literature in depression has often failed to make this distinction. Efforts were taken to separate distress from clinical symptoms when reviewing the literature.

The review of the literature begins with Coyne’s (1976a) interpersonal theory of depression, followed by Joiner and colleagues’ (Joiner et al., 1992; 1993) elaboration of it, involving the reassurance-seeking component. Following this is a review of self-verification theory with attention given to its application to depression (Giesler et al., 1996; Giesler & Swann, 1999; Swann, Wenzlaff, Krull, & Pelham, 1992; Swann, Wenzlaff, & Tafarodi, 1992). An examination of how the interpersonal conceptualization of depression has evolved in light of empirical and theoretical contributions is provided. Attention is also given to the few studies that have integrated interpersonal theory and self-verification theory. Following this is a delineation of the personality styles related to depression, including a discussion of interpersonal correlates. The review concludes with a discussion of the integration of the personality styles with both interpersonal and self-verification theories. Note that there are other interpersonal theories of depression in the literature (e.g., Andrews, 1989), but these are not reviewed in this dissertation.

Interpersonal Theory of Depression (Coyne, 1976a)

The interpersonal theory of depression, as developed by Coyne (1976a; 1990), hypothesizes that depressed individuals in close relationships engage others in a negative interaction cycle which results in the maintenance and exacerbation of depression. Initially, depressed persons seek support and security from others and others respond by providing reassurance. But, as the support-seeking behaviours persist, others begin to feel angry and resentful about having to provide continual reassurance. At the same time, they are inhibited from expressing feelings of annoyance and hostility because of feelings of responsibility for the well-being of the depressed individual. The depressed individual has difficulties deciphering this mixed message; although others assure him or her of his or her worth, the sincerity and genuineness of their reassurance is not clear. Ultimately, others either avoid or leave the depressed person. Although others attempt to provide assurance to the depressed individual, they instead communicate impatience, hostility, and rejection. Thus, a cycle of negative interactions ensues: The depressed individual persistently seeks support from others, others respond with rejection, and the depressive symptoms continue or worsen. This in turn leads to increased support-seeking and a repetition of the cycle. In this sense, others may respond in ways that unwittingly perpetuate depressed persons' problems.

Empirical investigations have focussed on different aspects of the model. A number of studies support the hypothesis that depressed individuals elicit a greater degree of rejection from others than do nondepressed individuals. Evidence for the rejection hypothesis was found for short-term interactions with strangers in laboratory settings

(Coyne, 1976b; Strack & Coyne, 1983), long-term interactions with spouses (Coyne, Kessler, Tal, Turnbull, Wortman, & Greden, 1987) and roommates (Burchill & Stiles, 1988; Howes, Hokanson, & Lowenstein, 1985), as well as brief interactions with confederates (Hammen & Peters, 1978; Howes & Hokanson, 1979; Stephens, Hokanson, & Welker, 1987). However, some studies involving short-term interactions failed to replicate these findings (i.e., Gotlib & Robinson, 1982; King & Heller, 1984). Marcus and Nardone (1992) conducted a narrative review of the literature and reported that the strongest support for the rejection hypothesis was found when long-term interactions were studied. In addition, a meta-analysis found that the rejection effect was a robust and reliable phenomenon (Segrin & Dillard, 1991). The average effect size across studies was .26 when depression was treated as a dichotomous variable (high and low levels of depression) and .78 when depression was treated as a continuous measure. The depression-rejection relationship was found to be influenced by other variables, such as type of interaction and type of interaction partner. That is, rejection effects were more pronounced in studies involving real interactions as opposed to no actual interaction ($r = .47$ versus $r = .25$) as well in studies where participants interacted with a friend as opposed to a stranger ($r = .52$ versus $r = .26$). Taken together, the findings discussed above support the hypothesis that depressed individuals elicit a greater degree of rejection than nondepressed individuals, particularly in long-term interactions.

Other studies reported results consistent with the tenet that people with depression instill negative affect in significant others (Coyne, 1976a). The meta-analysis conducted by Segrin and Dillard (1991) found moderate support for the hypothesis that depression

induces negative mood in others. A more recent meta-analysis conducted by Joiner and Katz (1999) extended the findings of Segrin and Dillard (1991). This investigation examined the contagion of depressive symptoms, that is, whether symptoms of depression specifically are transmitted to others in the interpersonal milieu. The authors concluded that the contagion of depressive symptoms is a particularly strong and homogenous effect, whereas contagion of negative mood is a slightly weaker effect. Thus, studies support the notion that depressed individuals instill negative affect in others.

The Reassurance-Seeking Hypothesis

Implicit in interpersonal theory is the idea that depressed individuals repeatedly seek support from others, and that it is this behaviour which is aversive to others and which is responsible for others rejecting them (Coyne, 1976a). In this sense, support-seeking is viewed as a mediator between depression and rejection. That is, depression leads to rejection only through support-seeking. A subsequent elaboration of this idea was proposed by Joiner and his colleagues (Joiner et al., 1992; 1993; Joiner & Schmidt, 1998). These researchers proposed that the support seeking behaviour can be conceptualized as excessive reassurance-seeking, which is defined as the tendency to persistently seek assurances from others that one is worthy and lovable regardless of whether such assurance has already been provided. Reassurance is sought to alleviate doubts about self-worth and doubts as to whether others truly care.

Studies have demonstrated associations between reassurance-seeking and depression. One study, conducted by Potthoff, Holahan, and Joiner (1995), assessed self-reported levels of reassurance-seeking and depressive symptoms. An association was

found between concurrent reassurance-seeking and depression. Another study conducted by Joiner and Schmidt (1998) examined depression level and reassurance-seeking scores of young military cadets before and after training. It was found that reassurance-seeking predicted changes in depression over time. Furthermore, cadets whose depression levels increased from Time 1 to Time 2 had higher levels of reassurance-seeking at baseline, controlling for initial depressive symptoms, compared to cadets whose depression levels did not change over time. This study also examined the specificity of reassurance-seeking to depression as opposed to anxiety. The results indicated that excessive reassurance-seeking was specific to increases in depressive symptoms. This is important because it shows that the reassurance-seeking in depressed individuals is a separate phenomenon and not merely a characteristic of psychopathology, such as anxiety (Joiner & Schmidt, 1998).

Joiner and his colleagues (Joiner et al., 1992; 1993) also proposed that reassurance-seeking could be viewed as a moderator that qualifies the magnitude of the depression-rejection relationship. That is, only some individuals with depression seek reassurance, which leads to their rejection. Thus, depression and reassurance-seeking interact to predict rejection. The first study that tested this hypothesis was conducted by Joiner et al. (1992). This study examined reassurance-seeking levels in mildly depressed university students and rejection by their same-gender roommates. Reassurance-seeking scores were found to be associated with concurrent depressive symptoms in both male and female dyads. Contrary to interpersonal theory, however, depression did not predict rejection. What was found instead was that reassurance-seeking moderated the

depression-rejection link. Students with depressive symptoms who engaged in reassurance-seeking at one point in time were more rejected by their same-gender college roommates 5 weeks later. It is important to note that these effects were found in male but not female roommates. Thus, this study showed that depressed men who persistently seek reassurance are more likely to elicit rejection from other men than are depressed men who do not seek reassurance.

Coyne's theory (1976a) also posited that rejection causes depression to worsen. A study conducted by Katz, Beach, and Joiner (1998) was the first to examine the prospective effects of rejection on subsequent increases in emotional distress in a sample of women in a non-cohabiting heterosexual dating relationship. Partner devaluation, identified as a subtle form of rejection, was predictive of future depressive symptoms among high reassurance-seeking, but not low reassurance-seeking women, after controlling for initial level of depression. This study not only provides support for the moderating role of reassurance-seeking, but it also suggests that rejection, when in combination with high levels of reassurance-seeking, further exacerbates depressive symptoms. However, as effects were tested in women in short-term dating relationships only, it is unclear whether results can be generalized to long-term relationships or to depression in men.

In summary, there is evidence to support Coyne's (1976a) interpersonal theory that depressed people are involved in interactions with others that play a role in maintaining and exacerbating their symptoms. Although there have been conflicting findings, there is strong evidence that depressed individuals elicit rejection from others in

the context of long-term relationships (i.e., roommate and marital relationships). There is also support for the tenet that depressed individuals instill negative mood and depressive symptoms in others. Interpersonal theory was elaborated by focussing on the nature of the support-seeking behaviour. Joiner and his colleagues argued that people with depression are rejected, at least in part, because they engage in reassurance-seeking. It was demonstrated that there were associations between depression and reassurance-seeking, and that reassurance-seeking was specific to future depressive, but not anxious, symptoms. Preliminary studies provided support for the moderating role of reassurance-seeking in the depression-rejection link. Evidence was found for the moderating role of reassurance-seeking to predict rejection in a sample of male, but not female, roommate dyads with depressive symptoms. Another study found that rejection, in combination with high reassurance-seeking, resulted in an exacerbation of depression in dating women. These findings suggest that reassurance-seeking moderates the relationship between depression and rejection, but the results are limited because they apply only to same-gender male roommates and short-term dating relationships in women.

Self-Verification Theory

Interpersonal theory can be further elaborated by examining other factors that influence reassurance-seeking behaviours. One finding emerging from the Joiner et al. (1992) study was that depressed individuals who sought reassurance from others were more likely to be rejected if they also had low self-esteem. That is, rejection effects were more pronounced for low- than high-self-esteem participants. This finding suggests that self-concept plays a role in influencing feedback-seeking behaviours among depressed

individuals. Self-verification theory considers the role of self-concept in interpersonal interactions. As developed by Swann (1983, 1987), this theory suggests that one's self-concept has a direct influence on the nature of feedback sought from others. It is derived from theories concerned with self-concept and self-consistency and is based on the notion that people in general are motivated to seek responses from others that are consistent with their self-concepts (Andrews, 1989). As such, people with positive self-views likely seek positive evaluations from others, while those with negative self-views seek negative evaluations.

Self-verification theory (Swann, 1983; 1987) proposes that individuals are motivated to seek feedback that confirms their self-views in order to bolster perceptions of predictability and control. Confirmatory feedback tells people that their perceptions in general—and self-perceptions in particular—are veridical and reliable. Disconfirmatory feedback, on the other hand, explicitly threatens perceptions of predictability and control by calling into question one's most basic form of insight: apprehension of the self. The theory suggests that people are compelled to seek confirmatory feedback and to interact with others who deliver such feedback in order to create better social interactions.

A host of empirical studies support different aspects of self-verification theory in people in general. Both laboratory and field studies support the central tenet of the theory, that people are motivated to preferentially solicit self-confirming feedback (Swann & Read, 1981a, 1981b; Swann, Wenzlaff, Krull, & Pelham, 1992; Swann, Wenzlaff, & Tafari, 1992). Research also has shown that people are more likely to believe feedback that fits as opposed to feedback that does not fit their self-concepts (Swann, Griffin,

Predmore, & Gaines, 1987). Moreover, there is a tendency to attend to self-verifying feedback (Swann & Read, 1981a) and to recall self-verifying feedback (Swann & Read, 1981a) as opposed to feedback that is not self-verifying. In addition, there is evidence that people choose interaction partners who view them as they view themselves (Swann, Hixon, De La Ronde, 1992; Swann, Wenzlaff, Krull, & Pelham, 1992; Swann, Wenzlaff, & Tafariodi, 1992) and that people tend to feel more intimate with partners whose evaluations verify self-views (Swann, De La Ronde, & Hixon, 1994).

Self-verification theory also proposes that the process of seeking self-confirmatory feedback is the same for individuals with either positive or negative self-views (Swann, 1983; 1987). People with positive self-views prefer favourable feedback and interaction partners who provide positive appraisals, while people with negative self-views tend to solicit unfavourable appraisals and are drawn to others who provide such feedback. To illustrate, in a study of married couples, Swann et al. (1992) observed that spouses who saw themselves in unfavourable terms reported greater commitment to their relationship partners if their partners also viewed them negatively. Spouses with positive self-views, however, reported greater commitment to partners who saw them in favourable terms.

Self-Verification Theory in Depression

More recently, self-verification theory has been applied to the interpersonal study of depression (Giesler et al., 1996; Swann, Wenzlaff, Krull, & Pelham, 1992; Swann, Wenzlaff, & Tafariodi, 1992). Because most people possess many positive and some negative self-views, it has been argued that the desire for self-verification usually fosters a search for predominately favourable evaluations. Unfortunately, because depressed

individuals possess relatively negative self-views, often with great tenacity (e.g., Beck, 1967; Gotlib & Hammen, 1992), seeking confirming evaluations means seeking unfavourable feedback. Thus, depression has been hypothesized to be associated with negative self-verification strivings.

Preliminary work testing the application of self-verification theory to depression was conducted by Swann and his colleagues. A number of studies found that participants who are categorized as having mild levels of depression exhibit a preference for unfavourable over favourable feedback as compared to nondepressed participants. Two studies were conducted by Swann, Wenzlaff, Krull, and Pelham (1992) in a sample of undergraduate students. In the first study, nondepressed and mildly depressed individuals were presented with either a favourable, neutral, or unfavourable evaluation, and were subsequently asked how much they wanted to meet their evaluators. In relation to nondepressed participants, mildly depressed individuals showed a preference to meet with the interaction partners who provided an unfavourable evaluation. In the second study (Swann, Wenzlaff, Krull, & Pelham, 1992), mildly depressed and nondepressed participants indicated how they wished their friend or dating partner to appraise them on a number of personal attributes (e.g., intellectual capability, social skills, physical attractiveness). The results showed that mildly depressed individuals wished to be perceived more negatively by others than did nondepressed people. Furthermore, the preferred appraisals of both depressed and nondepressed participants correlated with their self-views.

A third study reported similar findings (Swann, Wenzlaff, & Tafarodi, 1992, Study 1). In this study, mildly depressed participants and nondepressed participants were led to believe they had been evaluated by a potential interaction partner. Some learned that they had been evaluated favourably (i.e., as well adjusted, self-confident, happy, and untroubled), whereas others learned they had been evaluated unfavourably (i.e., as chronically unhappy, unconfident, and uncomfortable around others). Participants chose between staying and interacting with the evaluator or leaving and taking part in another experiment on an unrelated topic. The majority of depressed participants who had been evaluated unfavourably chose to stay and interact with the evaluator, but chose the other experiment when the evaluator appraised them favourably. Nondepressed participants displayed the opposite pattern of preference. This study suggests that depressed people enact self-verification strivings by seeking negative evaluations (i.e., gravitating toward others who appraise them unfavourably) and by eschewing positive evaluations (i.e., avoiding those who appraise them favourably).

This preference is likely motivated by the desire for confirmatory evaluations, according to a study by Swann, Wenzlaff, and Tafarodi (1992, Study 2). In this study, mildly depressed and nondepressed participants were initially exposed to feedback that either disconfirmed or verified their global self-appraisal. All participants were then given the opportunity to solicit feedback regarding their strengths or limitations. Based on self-verification theory, participants in the group whose global self-appraisals had been contradicted by feedback should be particularly motivated to bolster their perceptions of predictability and control by choosing verifying feedback (Swann, 1983; 1987). Indeed,

depressed participants were more likely to solicit information about their weaknesses following exposure to positive (disconfirming) feedback, as compared to negative (confirming) feedback. On the other hand, nondepressed participants were more likely to solicit information about their strengths following exposure to negative (disconfirming) as opposed to positive (confirming) feedback.

Although the research discussed so far examines only those individuals with mild depression levels, there has been preliminary work testing self-verification theory among individuals diagnosed with clinical depression. One study, conducted by Giesler et al. (1996), assessed feedback-seeking style in a sample of participants classified into three groups: high in self-esteem, low in self-esteem, and clinically depressed. Participants were told that two clinical psychologists-in-training were preparing in-depth personality profiles of them on the basis of their earlier responses to a battery of inventories. All participants were given the opportunity to examine the profiles. Because of supposed time constraints, participants were asked to choose the one profile they most wanted to see on the basis of summarized versions of each profile. One summary was favourable (i.e., this person seems well adjusted, self-confident), and one was unfavourable (i.e., the person seems unconfident, uncomfortable around others). After selecting a profile, participants rated how much they wanted to examine each profile. The results showed that the majority of depressed participants chose to examine the negative profile. In contrast, high self-esteem participants preferred the favourable profile and low self-esteem participants preferred the favourable and unfavourable profile equally. Thus, this study suggests that

clinically depressed individuals, as compared to nondepressed individuals with either high or low levels of self-esteem, show a marked display of negative self-verification.

Another study examined the outcome of negative self-verification within the context of on-going relationships. In this study, conducted by Swann, Wenzlaff, Krull, and Pelham (1992, Study 3), pairs of same-gender college roommates were categorized as being nondepressed or mildly depressed. The students' self-concept was measured at the beginning of the semester and their feedback-seeking activities were measured 5 weeks later. At the end of the semester, roommates were assessed regarding their desire and plans to maintain their roommate relationships. The results indicated that mildly depressed individuals were more inclined to solicit unfavourable than favourable feedback from roommates, as opposed to nondepressed participants. Moreover, students with depressive symptoms were poorly appraised by their roommates; by the end of the semester the students in the depressed group were evaluated less favourably than those in the nondepressed group. The roommates of individuals with depression were also inclined to end the roommate relationship, that is, to change to a new roommate. Feedback-seeking behaviours themselves were found to lead to roommates' negative response; the more participants sought unfavourable feedback, the more likely their roommates were to want to change roommates.

Taken together, these studies show that people have a desire for self-verifying feedback; people tend to want feedback that confirms their self-concept, whether it is positive or negative. Because of predominantly negative self-views, it is believed that depression is associated with the unfortunate tendency to seek negative self-verifying

feedback. Laboratory studies demonstrated that, compared to nondepressed individuals, those with mild levels of depression preferred to interact with others who saw them unfavourably, that they preferred to be perceived negatively by friends or dating partners, and that they actively sought negative evaluations and avoided positive ones. One study provided preliminary support for self-verification theory in clinical depression. Finally, depression was reported to be associated with negative self-verification within an on-going relationship which resulted in poor evaluations by others and the desire to reduce the closeness of the relationship.

The Integration of Reassurance-seeking and Negative Self-Verification

Reassurance-seeking and negative self-verification behaviours are similar in that they both influence interactions with others. There is evidence that both are related to rejection among depressed persons. Investigations have examined the integration of these two interpersonal behaviours. It has been theorized that individuals with depression are caught between conflicting and co-existing needs to be consoled by seeking reassurance and to be confirmed by negatively self-verifying (Joiner et al., 1993; Joiner & Metalsky, 1995). Two studies have been conducted which suggest that depression is related to rejection through the combined effects of reassurance-seeking and negative self-verification in samples of same-gender roommates. The first study, conducted by Joiner et al. (1993), assessed levels of depression, reassurance-seeking, and negative self-verification in undergraduate students classified as depressed and nondepressed on the basis of self-report measures of distress. Five weeks later, roommates' appraisals were measured. Results showed that depressed participants reported engaging in more

reassurance-seeking and negative feedback-seeking than did nondepressed participants. In addition, the combination of negative feedback-seeking, reassurance-seeking, and depression predicted future negative evaluations by their roommates.

The second study, conducted by Joiner and Metalsky (1995), expanded on the Joiner et al. (1993) study by assessing changes in rejection over time. Two groups of participants classified as depressed and nondepressed were assessed for level of depression, self-verification, and reassurance-seeking behaviours at Time 1. Roommates' evaluations of participants, as well as their willingness to engage in future interactions, were assessed 3 weeks later. A number of findings were reported. Just as Joiner et al. (1993) found, depressed participants reported engaging in more negative feedback-seeking and more reassurance-seeking than did their nondepressed counterparts. The study also found that the combination of negative feedback-seeking, reassurance-seeking, and depression in male, but not female, participants assessed at Time 1 was predictive of increases in negative evaluation by their roommates 3 weeks later (controlling for Time 1 rejection). Thus, these two studies suggest that reassurance-seeking and negative self-verification moderate the relationship between depression and rejection.

Another study was conducted that tested for the effects of reassurance-seeking and negative self-verification in a sample of patients with clinical depression and their marital or cohabiting partners (Benazon, 1997). In this study, the effects of reassurance-seeking and negative self-verification were tested separately, not in a combined model as in the two studies described above. Also, negative self-verification strivings were assessed in a way unlike previous studies: The discrepancy between patients' appraisals of themselves

and their partners' appraisals of them was used to predict partner support and tolerance. This strategy was based on the view that individuals with negative self-concepts maintain a stable self-concept by actively seeking and often receiving self-verifying information in an effort to close the gap between their own and others' perception of themselves (Swann, Wenzlaff, Krull, & Pelham, 1992). A discordance between one's own and others' views of the self represents a lack of self-verification. Results of the study supported a relationship between reassurance-seeking and partner rejection; reassurance-seeking in patients contributed to negative partner attitudes. However, the study did not support the presence of a relationship between negative self-verification and partner response; a discrepancy between self and other perceptions did not predict negative partner attitudes. It is important to note that Benazon's (1997) study is different from previous studies examining negative self-verification in depression. As opposed to self-verification studies conducted by Joiner and his colleagues, as discussed above, Benazon (1997) did not test for moderating effects of reassurance-seeking and negative self-verification in depression. The results obtained are limited because of this omission.

In summary, there is evidence demonstrating that depression is related to an interpersonal style characterized by both reassurance-seeking and negative self-verification and subsequent rejection by others. Two studies of same-gender roommates showed that both reassurance-seeking and negative self-verification moderate the relationship between depression and rejection. One of the two studies demonstrated that the combination of depression, reassurance-seeking, and negative self-verification predicted increases in rejection over time, but in male dyads only. Another study

examined the effects of reassurance-seeking and negative self-verification separately in the marital context among individuals who were clinically depressed. Although a relationship was found between reassurance-seeking and negative partner attitudes, the results of the study contribute little to the literature because of a failure to test for moderating effects.

Sociotropic and Autonomous Personality Styles

The study of personality constructs related to depression provides a different perspective on the study of depression. There is a well-established body of work which proposes that personality features influence depressed individuals' construals of social interactions and their interpersonal impact on those around them. Writers from both psychoanalytic and cognitive traditions have examined the relationship between depression and personality (e.g., Arieti & Bemporad, 1980; Beck, 1983; Blatt et al., 1982). In each of these schools of thought, two broad personality styles are hypothesized to act as predisposing vulnerabilities in the development of depression. The psychodynamic perspective distinguishes between anaclitic depression, arising from a dependent personality configuration, and introjective depression, arising from a self-critical configuration (Blatt, 1974; Blatt et al., 1982). Dependency is characterized by deep longings to be nurtured and protected and a reliance on others to maintain a sense of well-being. Self-criticism, on the other hand, is characterized by the need to strive for achievement and perfection to overcome feelings of inferiority and failure. From the cognitive-behavioural perspective, two personality dimensions, labelled sociotropy and autonomy, are viewed as influencing symptom patterns and treatment response (Beck,

1983). Sociotropy is described as having a heightened need for affiliation and positive exchanges with others; autonomy is described as having heightened needs for independence and achievement.

There are obvious parallels between autonomy and dependency and between sociotropy and self-criticism configurations. For example, the former personality construct reflects an excessive investment in personal relationships and the latter reflects an excessive investment in achievement over personal closeness. Moreover, both theories stress a vulnerability to depression in the face of stressful life events. Although the literature suggests that sociotropy and dependency are generally overlapping concepts (Coyne & Whiffen, 1995), it appears that there are important differences between autonomy and self-criticism, which have been highlighted by improved measures developed in recent years (Alden & Bieling, 1996). The following discussion combines the findings for sociotropy and dependency together, but discusses the literature for autonomy and self-criticism separately.

Personality Style and Interpersonal Functioning

A distinct pattern of interpersonal features is associated with sociotropy and dependency. Individuals with a sociotropic style report being more concerned about the maintenance of interpersonal relatedness than do autonomous individuals (Bieling & Alden, 1998). This investment in interpersonal relations is expressed in valuing emotional closeness; men and women with high levels of dependency indicate they prefer intimacy-oriented romantic partners and report intense feelings of love for their partners (Zuroff & de Lorimer, 1989). However, sociotropy and dependency also are associated with fear of

loss of love. This personality style is related to an anxious attachment style, which is characterized by a fear of abandonment (Zuroff & Fitzpatrick, 1995). Dependency in men and women also was found to be related to lower levels of achievement and independence strivings (Mongrain & Zuroff, 1995), suggesting that individuals with this style are preoccupied with interpersonal goals at the expense of achievement-related goals. In relationships with others, they have difficulty being assertive and assume too much responsibility (Alden & Bieling, 1996; Fichman, Koestner, & Zuroff, 1994). Sociotropy in clinically depressed individuals in intimate relationships was related to reporting of one's own behaviour as demanding and partner's behaviour as withdrawing (Lynch, Robins, & Morse, 2001). There is some evidence that this perception reflects real differences in relationships. For instance, women with a dependent style were found to be married to partners who are emotionally withdrawn (Whiffen & Aube, 1999).

The literature reports different interpersonal correlates for autonomy and self-criticism. Findings are presented first for autonomy, then self-criticism. One study, conducted by Bieling and Alden (1998), found that individuals with an autonomous style, as compared to those with a sociotropic style, were more concerned about issues related to self-definition (i.e., orientation to goals, being controlled by others, separating oneself from others, and maintaining strict self-standards). Autonomy was reported to be associated with lower levels of trust and self-disclosure, and with a fearful-avoidant attachment style characterized by ambivalence about intimacy (Zuroff & Fitzpatrick, 1995). Autonomy was also associated with a self-reported inability to experience warm and intimate feelings toward others or to get along with others (Alden & Bieling, 1996).

Finally, in a sample of clinically depressed individuals in intimate relationships, autonomy was related to the reporting of one's own behaviour as withdrawing and partners' behaviour as demanding (Lynch et al., 2001).

Self-criticism is reported to be related to a high investment in achievement strivings at the expense of interpersonal goals (Mongrain & Zuroff, 1995). This feature likely contributes to problems in relationships. One study found that individuals with a self-critical style have difficulty being sociable and see themselves as being controlling in their interactions with others (Fichman et al., 1994). Furthermore, they experience their daily interactions with others as being more unpleasant (Zuroff, Stotland, Sweetman, Craig, & Koestner, 1995), and they report less satisfaction in romantic relationships (Zuroff & de Lorimier, 1989). In an observational study, it was reported that women with a self-critical style were rated as more hostile and less loving than other women in interactions with their boyfriends (Mongrain, Vetteese, Shuster, & Kendal, 1998). Individuals with a self-critical style were found to be married to partners who criticize them (Whiffen & Aube, 1999). In addition, both men and women report being less trusting of attachment figures (Whiffen, Aube, Thompson, & Campbell, 2000), and the result is an avoidance of intimacy and closeness, and a more socially isolated, achievement-oriented life (Mongrain & Zuroff, 1995).

Alden and Bieling (1996) examined differences in interpersonal correlates between autonomy and self-criticism. They reported that autonomy displayed a stronger correlation with a "coldness" variable than did self-criticism. Thus, greater autonomy was associated with the inability to experience warm and intimate feelings toward others or to

get along with others. Also, compared to self-criticism, autonomy was associated with a denial of attention-seeking, intrusive, or gregarious behaviours. In general, self-criticism and autonomy were found to share similar interpersonal correlates, but those for self-criticism did not centre around an inability to experience warm and intimate feelings toward others. Furthermore, self-criticism was identified as more interpersonally complex than autonomy. In this thesis, I will be dealing almost exclusively with the concept of autonomy.

How might sociotropy and autonomy be implicated in the interpersonal interactions described in the previous section (i.e., reassurance-seeking and negative self-verification)? Sociotropy is associated with an investment in positive interchange with others, including the need for acceptance, intimacy, and support. The literature describes individuals with high levels of sociotropy as being apprehensive about the possibility of being disapproved of by others and as anxiously attached in their relationships. Their self-worth is based on interpersonal relationships. In interactions with others, they are likely to engage in behaviours designed to seek nurturance. High levels of sociotropy may be related to the tendency to seek excessive reassurance because of the high value placed on relationships and the need to pursue support from others. Seeking reassurance may be perceived as a way of increasing security in relationships as well as bolstering self-worth. Therefore, it can be predicted that sociotropy is related to depression through reassurance-seeking behaviours.

Descriptions of autonomy are associated more with achievement needs than with maintaining secure relationships. Self-worth is sustained through individuality.

Individuals with this style tend not to feel close to others. They are apprehensive about failing or being defeated, and tend to invoke self-blame for having defaulted on obligations. They are likely to be very concerned about internal standards and the standards of others, and therefore, in interactions with others, would be concerned whether others see them as they see themselves. Therefore, as opposed to individuals with a sociotropic style, it can be predicted that autonomy is related to depression through negative self-verification.

Limitations of Interpersonal Theory: The Issue of Enduring Relationships

One significant limitation of the literature on interpersonal theory is that the majority of empirical work has focussed on non-enduring relationships. For example, early support for the theory was demonstrated in fleeting contacts between strangers (i.e., Coyne, 1976b; Strack & Coyne, 1983; Swann, Wenzlaff & Tafari, 1992). Although these findings are valuable, they tell us very little about interactions in the context of more meaningful relationships. It has been argued that there are not many parallels between relationships with close others and relationships with strangers in terms of interpersonal functioning (Coyne, 1999). Therefore, investigations of interpersonal theory among strangers may not adequately capture the interactions of persons with depressive symptoms as they truly occur in relationships with important others. This is particularly concerning because these theories are often applied to understanding the development of depression in the context of enduring relationships, such as long-term romantic relationships. In recognition of this limitation, studies have expanded to include more meaningful relationships, such as those between roommates. Support for interpersonal

theory has been found among same-gender university roommates (Joiner et al., 1992; 1993; Joiner & Metalsky, 1995; Swann, Wenzlaff, Krull, & Pelham, 1992). Although this dyad represents a moderately close relationship, it can be argued that it is not an especially meaningful and enduring one. For instance, it is likely that the level of commitment is not especially high, and individuals may be unconcerned about the survival of the association. Furthermore, roommates may not strongly value their relationship, and may care little about how their interactions influence one another. These interactions are probably dissimilar to those with significant others suggesting a need to explore interpersonal interactions in more enduring dyads. This is particularly true in light of findings showing that aspects of interpersonal theory are most strongly supported when long-term interactions were studied (Marcus & Nardone, 1992; Segrin & Dillard, 1991).

Some efforts have been taken to explore interpersonal theory among romantic couples. A small number of investigations examining the self-verification theory using samples of nondepressed romantic partners have been conducted (Katz & Beach, 1997; Katz, Beach, & Anderson, 1996; Swann et al., 1994). To date, only two studies have examined interpersonal theory of depression in romantic relationships. In the first, conducted by Katz et al. (1998), partners were in a non-cohabiting dating relationship lasting at least 1 month. The second, conducted by Benazon (1997) as described earlier, is limited because it neglected to test for moderation. Therefore, there appears to be a need to continue investigations of interpersonal theories of depression in the context of important and enduring relationships with significant others, such as marital relationships.

Purpose of Study and Hypotheses to be Tested

This review presented both theory and empirical evidence to support an interpersonal view of depression. Coyne (1976a) outlined a negative cycle of interactions implicated in the maintenance and exacerbation of depressive symptoms. One important component in the cycle is rejection from others. The current review provided strong evidence that depression is associated with rejection, particularly in long-term relationships. An elaboration of interpersonal theory proposed that depression is associated with the persistent seeking of reassurance about one's worth. It was hypothesized that those individuals with depression who seek reassurance become rejected by others, and thus reassurance-seeking has been conceptualized as a behaviour that moderates the relationship between depression and rejection. Empirical support has been demonstrated for this hypothesis for same-gender male dyads, but not female ones. In addition, interpersonal theory suggests that rejection causes depression to worsen. This assertion was supported by a single study. In that study, rejection was predictive of increased depression among high reassurance-seeking, but not low reassurance-seeking, women in a short-term dating relationship.

Negative self-verification, taken from self-verification theory, is another behaviour thought to be involved in the interpersonal cycle. Here, depression is viewed as being associated with the tendency to seek feedback confirming negative self-views. Laboratory studies demonstrated that mildly depressed individuals, compared to nondepressed individuals, desire to interact with others who view them unfavourably. Similar studies showed that they prefer to be perceived negatively by close others, and

that they actively seek negative over positive evaluations. Preliminary research has examined the integration of reassurance-seeking and negative self-verification into interpersonal theory. Results show that these behaviours moderate the relationship between depression and rejection over time, but for male dyads only, not female ones. These findings suggests that men with depression who seek both reassurance and negative self-verification will be rejected by other men.

One purpose of the current study was to further examine interpersonal theory of depression in an attempt to extend previous research. To address the limitations of research on non-enduring relationship pairs, as discussed in the previous section, the current study involved a sample of heterosexual married or cohabiting partners. This is one of the first studies in the interpersonal investigation of depression to have done so. Furthermore, following from Katz et al. (1998), prospective effects of rejection were investigated. That is, I investigated whether the combination of reassurance-seeking and rejection resulted in increases in depression. Building on work by Joiner and colleagues (Joiner et al., 1993; Joiner & Metalsky, 1995) who demonstrated an association between seeking reassurance and seeking negative feedback, negative self-verification was integrated into the model. Thus, I hypothesized that the combination of reassurance-seeking, negative self-verification, and partner rejection would predict increases in depression over time. In addition, all two-way interactions between the factors of reassurance-seeking, negative self-verification, and rejection were tested to see if they were associated with increases in depression.

As previously noted, past research found evidence for a moderating role of reassurance-seeking and negative self-verification in same-gender male dyads only. It is not clear whether this gender difference is a result of behaviours on the part of the depressed individual, the response of the partner, or because of another unrelated factor, such as expectations based on gender roles. Because of this, it is difficult to estimate effects in opposite-gender marital relationships and therefore, in this study no predictions were made regarding gender. However, Katz et al. (1998) found moderation effects for reassurance-seeking in dating women. Thus, at a minimum, reassurance-seeking combined with rejection can be hypothesized to predict depression in women.

This review also demonstrated that there are distinct interpersonal features associated with sociotropic and autonomous personality styles. The relationship of these personality styles to the interpersonal behaviours may contribute to a better understanding of why people become depressed. Thus, a second goal of this dissertation was to build personality theory into the interpersonal model described above (Joiner et al., 1993; Joiner & Metalsky, 1995; Katz et al., 1998) to create a more complete and unified model. As described earlier, sociotropy was shown to be related to an investment in interpersonal relationships and a need for acceptance and support. I argued that individuals with this style would be apt to engage in behaviours designed to seek nurturance, and thus would seek reassurance. Combining this hypothesis with interpersonal theory, I therefore predicted that sociotropy would be related to the combination of reassurance-seeking and rejection, which in turn would lead to increased depression. In contrast, the review of past studies showed that autonomy was related to achievement needs over the maintenance of

secure relationships. I argued that autonomous individuals would be concerned about internal standards and, in interpersonal interactions, would tend to negatively self-verify. Combining this hypothesis with interpersonal theory, I therefore predicted that autonomy would be related to the combination of negative self-verification and rejection, and that this would in turn lead to increased depression. Because these hypotheses have not been previously tested, again, no predictions regarding gender were made.

Relationships among observed and unobserved variables can be illustrated in a path diagram. Diagrams of the hypothesized unified models appear in Figures 1 and 2. Main effects are included in the models. In a typical path diagram, observed variables are represented by rectangles or squares, and unobserved variables are represented by circles. There are two kinds of variables in a model, endogenous and exogenous (Klem, 1995; Loehlin, 1998). The values of endogenous variables are explained by one or more the other variables in the model. That is, they have causal sources within the diagram. In contrast, the values of exogenous variables are taken as given—the model does not attempt to explain them. That is, they do not receive causal inputs from any other variables in the model. In path diagrams, causal influences are represented by unidirectional straight arrows and correlations and covariances are represented by bidirectional arrows. A plus sign indicates positive causation. Endogenous variables have associated error terms (i.e., unobserved variables) whereas exogenous variables are assumed to be measured without error (Klem, 1995). Based on the discussion above, the model a priori specified the endogenous and exogenous variables. It is predicted that there will be direct paths from sociotropy to the reassurance-seeking X rejection interaction, and from this interaction to

residual depression. It is also predicted that there will be direct paths from autonomy to the negative self-verification X rejection interaction, and from this to residual depression.

It is important to note that no differences are expected between baseline and prospective measures of depression. There is no expectation that symptoms will increase overall. Instead, some individuals will display a pattern of behaviours that result in the predicted increase, which is what the current study aims to assess. It is also likely that some individuals will exhibit a decrease in symptoms, and others will not change at all.

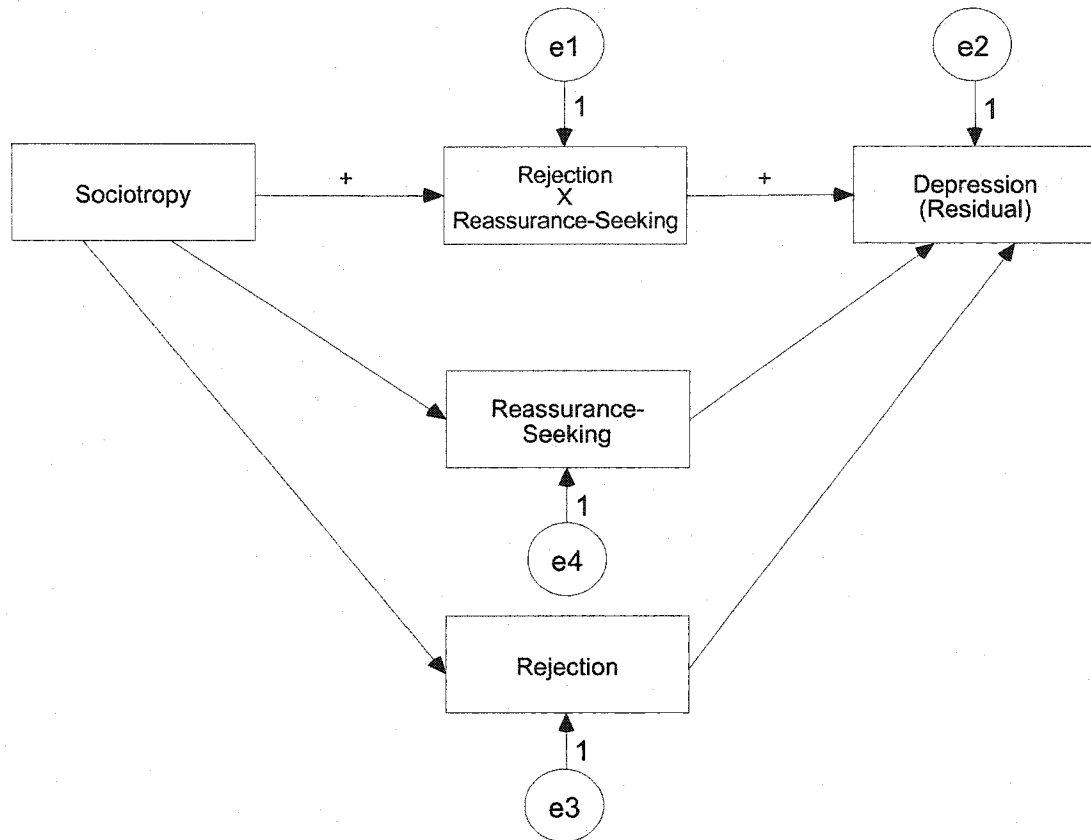


Figure 1. Path diagram of the sociotropy model. Only hypothesized paths are indicated with hypothesized path valences.

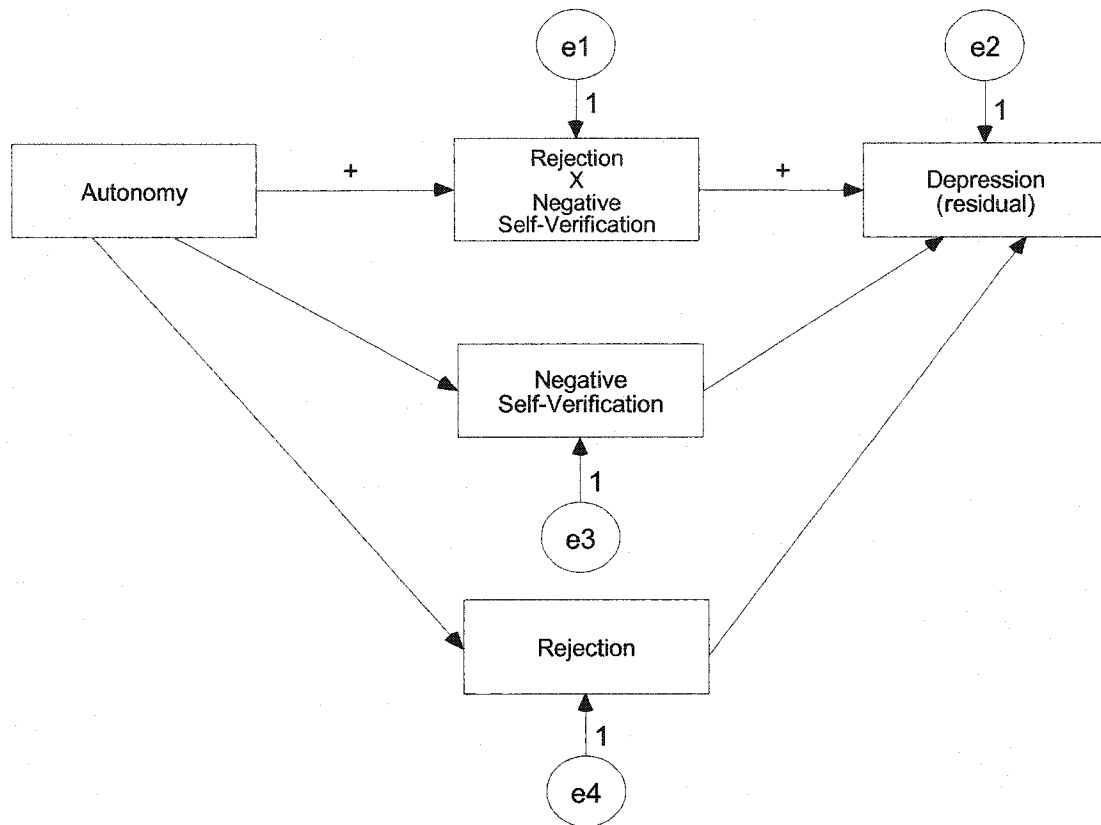


Figure 2. Path diagram of the autonomy model. Only hypothesized paths are indicated with hypothesized path valences.

This study also takes into account a methodological consideration found to be problematic in previous studies: the assessment of negative self-verification. This behaviour has been assessed in a variety of ways in previous studies. One method examines the discrepancy between partner and self appraisals (Katz & Beach, 1997; Katz et al., 1996). In this case, perceived partner appraisals are subtracted from self-appraisals. However, the use of such difference scores is controversial (Cronbach & Furby, 1970). A better way of measuring negative feedback-seeking would be to assess how individuals wish to be evaluated by others. For example, participants have been assessed as to how they would want others to rate them on self-attributes (Swann, Wenzlaff, Krull, & Pelham, 1992), on the degree to which they wanted to receive feedback pertaining to strengths or weaknesses (Giesler et al., 1996), or their intent to seek feedback from others in a number of domains (Joiner, 1995; Joiner & Metalsky, 1995; Joiner et al., 1993). Because self-verification theory states that people are motivated to seek feedback from others to confirm their self-concepts (Giesler et al., 1996; Giesler & Swann, 1999; Swann, Wenzlaff, Krull, & Pelham, 1992), it seems that the question of interest is whether individuals choose to seek either positive or negative feedback. For this reason, in the current study, negative self-verification was assessed by measuring the extent to which individuals seek negative information about themselves from others.

Finally, the current study employs a methodology that takes advantage of internet technology to achieve a heterogeneous sample. Participants were recruited on-line and subsequently completed study measures posted on web pages created for the study. This allowed for diversity in geography as well as in background variables. Furthermore, on-

line research allows for a degree of anonymity that often cannot be found in other research methods. This benefit likely reduces the influence of demand characteristics, on the part of both the participant and the researcher, and encourages candid responding by participants. The feasibility of internet studies for psychological research has grown in the past few years (Smith & Senior, 2001), and a number of studies have examined the experimental validity of this methodology. One investigation found an almost perfect correlation between results from participants recruited on-line versus those recruited from a university environment (Krantz, Ballard, & Scher, 1997), while another study found that on-line studies replicated existing "paper-and-pencil" studies (Smith & Leigh, 1997). Furthermore, a recent study by Pettit (2002) noted no difference in response set effects between on-line questionnaires and paper-and-pencil questionnaires. That is, there were no differences in item nonresponse, random responding (when participants haphazardly provide responses without reading the questions), response error (when a response to an item has been generated but the response cannot be used, because of illegible handwriting, for example), acquiescence (characterized by responses that show agreement with a question regardless of the question's content), and extreme responding (when participants favour the anchors of a scale). In fact, on-line administration was shown to produce significantly fewer errors than paper-and-pencil questionnaires. These findings suggest that no different results should be expected from on-line studies versus more traditional studies. Instead, using the internet to conduct research yields several benefits.

Method

Procedure and Participants

This study was administered over the internet. The methodology used was based on recommendations provided in the literature on conducting online behavioural science research (i.e., Smith & Leigh, 1997; Schaefer & Dillman, 1998). Notices about the study (see Appendix A) were posted on various internet sites, internet newsgroups, and e-mail lists that were directed to married and cohabiting couples, such as lists with topics related to relationship and parenting issues. The notice included a brief description of the study and the requirements for participation. Also provided was the web address for the internet site that was created specifically for this study where interested individuals could visit to receive more detailed information about the study. In order to participate, couples were required to have met specific inclusionary criteria, which are as follows: a) Both partners must be willing to participate; b) They must be married or cohabiting in a heterosexual relationship for at least 2 years. This criterion was included to ensure that couples are involved in an enduring relationship; c) Both partners must be between the ages of 18 and 65. This age criterion was chosen to ensure that participants completing questionnaires were adults, but that they were not elderly. It is likely that interaction patterns related to depression are unique for very young and for older couples, and so should not be included in the current analysis; d) Both partners must be available for retesting in 3 months. Active involvement in either psychopharmacological or psychological treatment for depression was not an exclusionary consideration for research participation. Each participant was entered in a draw for \$100 at the completion of all parts of the study.

Participation in the study proceeded in the following manner: Individuals who visited the study website were provided with detailed information about the study, including information regarding confidentiality and anonymity (see Appendix B; note that the study website has been removed from the server and a temporary sample website can be found at aix1.uottawa.ca/~varshney/intro.htm). Individuals who were interested in participating were instructed to click on a link that would take them to another web page where they could complete the study. In order to ensure anonymity but to permit the pairing of couples' responses, participants were asked to provide an easy-to-remember code (such as a child's name or a pet's name). They were informed that this code would be used by the researchers to pair responses. Because participants had to be contacted 3 months later for the follow-up, they were also asked to provide their email address. Asking for participants to supply their email address was also used as a method of indicating informed consent. That is, participants were told that by providing their email address, they were giving informed consent.

Participants were then asked to complete a number of demographics questions and measures described below (see Appendix C). Responses were recorded using either pull-down menus or radio buttons. After completion of the items, participants were then instructed to click on a "submit" button. Doing this emailed responses to the experimenter and took participants to a final web page. This page thanked them for their participation and asked them to invite their partner to participate in the study—with links to the beginning of the study—if they had not done so already (see Appendix D). If the participant's partner had not submitted their responses to the questionnaire within 1 week,

the participant was sent an email to remind them to invite their partner to participate (see Appendix A).

Participants were contacted 3 months later by e-mail following the completion of the initial questionnaires to invite them to complete the Time 2 questionnaire. An invitation letter was sent to each participant (see Appendix A). The email included a link to another WWW site where the study was posted. The Centre for Epidemiologic Studies–Depression Scale, Revised, was the measure completed at Time 2. If participants had not submitted their responses within a week of the initial email, the letter was resent as a reminder.

The study protocol was reviewed and approved by the Research Ethics Board at the University of Ottawa. Care was taken to preserve anonymity and confidentiality of participants' responses. However, the internet is a unique research environment because recruiting volunteers must be performed differently than it is with traditional methods and because participants, in most cases, do not directly interact with the researcher. As such, research over the internet provides for some additional ethical considerations. A number of unique ethical guidelines directly related to internet research have been proposed by Smith and Leigh (1997) to ensure that participants receive fair treatment. These issues were considered in the current study, and are briefly described here. First, there must be a reasonable expectation that potential readers of the notice are capable of giving informed consent (i.e., be over 18 years of age). For the current study, recruitment notices were posted to internet sites (websites, newsgroups, and email lists) that were targeted to adult populations in terms of the topics of discussion. When possible, list or newsgroup

moderators were contacted to determine the appropriateness of the study to the readers of the list and to get permission to post the notice. Second, a reasonable method to obtain informed consent electronically needs to be in place. One way of accomplishing this, as recommended by Smith and Leigh (1997), is to ask participants to indicate their consent by providing their email address. In the current study, participants were asked to provide their email addresses, and they were notified that by typing in their email address they were giving informed consent. Third, it is important to allow a participant to withdraw at any time without penalty. In the current study, it is indicated on the information page that participants can discontinue the study at any time by simply leaving the website the same way they would any website in which they are not interested. Fourth, the issue of anonymity and security of data is particularly important in a networked environment. The web site for the current study was placed in a secure web server located on the University of Ottawa server, where all information was encrypted. The server was highly secure (128 bit SSL encryption) which made it virtually impossible for anyone to access the data. This was the same server used by the university to obtain sensitive material from students, such as social insurance numbers. The anonymity of participants was further protected in the current study by identifying data with unique identifier codes known only to the experimenter and meaningless to others.

At Time 1, a total of 385 participants (232 women and 153 men) completed the questionnaires posted on the study web site. Because the analyses require data from both partners, only completed responses from couples were considered. This resulted in a total of 270 participants, or 135 couples (with 115 individual responses from 97 women and 18

men). Of the 270 participants who were invited to participate in the study at Time 2, 182 participants responded (84 men and 98 women; 68% response rate). Thirteen individuals were not reachable because of problems with email addresses (either they had provided an incorrect email address or their email address had changed). Again, because the analyses require data from both partners, participants whose partner did not respond were deleted (20 husbands and 6 wives failed to respond when their partners had). This resulted in a total of 156 participants, or 78 couples. This sample size was deemed adequate based on power analyses (Cohen, 1992; 1988) and on the recommended requirements for conducting path analyses (Klem, 1995).

Couples who participated at both Time 1 and Time 2 were compared with those who did not participate at Time 2. Couples who participated in both parts of the study did not differ significantly from the remaining couples on any of the variables. Although both married and cohabiting couples participated in the study, for ease of communication, male and female partners will be referred to as husbands and wives, respectively, in this dissertation.

Measures

The following measures (see Appendix C) were administered to couples at Time 1:

Feedback-Seeking Questionnaire (FSQ; Swann, Wenzlaff, Krull, & Pelham, 1992). Negative self-verification strivings were assessed using the FSQ. This measure assesses participants' tendency to seek feedback from others within five self-relevant domains: intellectual, social, musical and artistic, athletic abilities, and physical

attractiveness. Items from the FSQ are based on the short form of the Self-Attribute Questionnaire (SAQ-S; Pelham & Swann, 1989). Each domain is made up of six questions reworded to be specific to romantic partners. Of the six, three are framed negatively (e.g., "What is some evidence you have seen that your partner doesn't have very good social skills?") and three are framed positively (e.g., "What is some evidence that your partner has good social skills?"). Participants are asked to choose two of six questions within each domain which they would like their partners to answer if they wanted to "learn more about themselves." Thus, participants select a total of 10 questions, 2 from each of the 5 domains. A feedback-seeking score is calculated by tallying the number of negative questions selected. The resulting scale can range from 0 to 10, with higher scores representing more negative self-verification.

The internal consistency of the FSQ is below adequate levels; the coefficient alpha for the FSQ has been reported to be .63 in a sample of university student roommates (Joiner et al., 1993). However, this measure is the only one of its kind to assess negative feedback-seeking, and is the measure that has been used in the majority of studies examining this issue (Joiner et al., 1993; Swann, Wenzlaff, Krull, & Pelham, 1992). In the present sample, the internal consistency was comparable. Coefficient alpha was .66 for husbands and .68 for wives. Despite its low reliability, several studies have supported its construct validity. That is, it has been found to relate to relevant variables in theoretically meaningful ways (Swann & Read, 1981; Swann, Pelham, & Krull, 1989; Swann, Wenzlaff, Krull, & Pelham, 1992).

The Depressive Interpersonal Relationships Inventory: Reassurance-Seeking Subscale (DIRI-RS; Joiner et al., 1992; 1993). Excessive reassurance-seeking was assessed using the reassurance-seeking subscale of the DIRI. This measure assesses tendencies toward reassurance-seeking, operationalized as the tendency to ask others whether they “truly care” (e.g., “Do you find yourself often asking the people you feel close to how they truly feel about you?”). The reassurance-seeking subscale consists of 4 items, each rated on a 7-point scale. Thus, subscale scores can range from 1 to 7, with higher scores representing a stronger interest in and tendency to seek reassurance. The psychometric properties of this scale are excellent. Coefficient alpha was .88 for a sample of university students (Joiner et al., 1992; 1993), and .90 for a sample of dating women (Katz et al., 1998). The criterion and construct validity has been supported by past work. For example, elevated scores have been shown to be predictive of observable reassurance-seeking behaviour in laboratory situations (Joiner & Metalsky, 1997).

The present study includes a version of the DIRI-RS reworded such that it applied specifically to the seeking of reassurance within romantic relationships (e.g., “Do you find yourself often asking your partner how he or she truly feels about you?”) as used in a previous study (Benazon, 2000). The coefficient alpha for the reworded measure was reported to be .85 in a sample of married and cohabiting couples (Benazon, 2000). In the present sample, the DIRI-RS was internally consistent for both husbands and wives, with alpha coefficients of .90 for husbands and .86 for wives.

The Rosenberg Partner-Esteem Questionnaire (RPEQ; Rosenberg, 1965; Swann, Wenzlaff, Krull, & Pelham, 1992). The SEQ-P was used in this study to assess rejection

of depressed participants. This index may be viewed as “that aspect of rejection involving negative evaluation of the target’s worth as a person” (Joiner et al., 1992, p. 167). This inventory includes the 10 items of Rosenberg’s original scale, reworded such that participants complete it with regard to the esteem in which they hold targets. Each item is rated on a 5-point scale, and items are summed. Thus, scores can range from 10-50. Scoring is reversed such that higher scores reflect a more negative view of individuals by their partners. Representative items include: “I feel that my partner has a number of good qualities,” “My partner is a person of worth and value,” and “I wish I could have more respect of my partner” (reverse-coded). Good reliability for this measure has been reported. In samples of roommates, coefficient alpha ranged from .82 to .86 (Joiner et al., 1992; 1993) and in a sample of dating partners, coefficient alpha was .82 (Katz et al., 1998). Coefficient alpha in the current study was .84 for husbands and .82 for wives.

Personal Style Inventory (PSI; Robins, Ladd, Welkowitz, Blaney, Kutcher, & Diaz, 1994). Personality style was assessed using the PSI. This measure consists of two 24-item sets, one measuring sociotropic and the other autonomous personality styles, each scored on a 1 to 6 scale of agreement. Sociotropy consists of three subscales: concern over what others think, dependency, and pleasing others. Autonomy consists of three subscales: perfectionism/self-criticism, need for control, and defensive separation. The PSI has been found to demonstrate excellent psychometric qualities. Coefficient alpha for the sociotropy and autonomy subscales was .90 and .86 respectively; test-retest reliability for the sociotropy and autonomy subscales was .80 and .70 respectively (Robins et al., 1994). The PSI also has been reported to have good construct validity (Robins et al.,

1994). Furthermore, the Sociotropy and Autonomy scales have a low correlation with one another (.18), indicating that they are largely independent dimensions (Robins et al., 1994).

It has been recommended that 4 items from the perfectionism/self-criticism subscale be omitted because a confirmatory factor analysis found that these items were comparably related to both sociotropy and autonomy total scores (Bagby, Parker, Joffe, Schuller, Gilchrist, 1998). Thus, in order to maximize the distinction between the two dimensions, these items were omitted in the current study. Furthermore, a factor analysis of the PSI by Bagby et al., (1998) indicates that the measure can be further shortened to 24 items (12 items in each dimension). In order to shorten administration time, the scale was modified in accordance with Bagby et al.'s (1998) analyses. The items retained were those that were most strongly related to each of the two personality types. For the sociotropy dimension, items that were retained were those that had factor loadings above .55. For the autonomy dimension, items that were retained were those that had factor loadings above .40. For the current study, the shortened form of the PSI was internally consistent. For the sociotropy subscale, coefficient alpha was .88 for both husbands and wives. For the autonomy subscale, coefficient alpha was .80 for husbands and .82 for wives.

The following measure was administered to participants at both Time 1 and at Time 2.

Center for Epidemiologic Studies–Depression Scale, Revised (CES-D, Revised; Radloff, 1977; Santor & Coyne, 1997). Depression was assessed in the current study

using the CES-D. This instrument was originally developed as a measure of depressive symptoms in adults residing in the community. The revised scale consists of 9 items rated on a 4-point scale according to the frequency with which symptoms were experienced during the preceding week and are summed to compute a total score. In a recent article, Smith, McCarthy, and Anderson (2000) discussed the development of short forms where the revised CES-D was one of the 12 forms reviewed. The developers of the revised CES-D appear to have met almost all of the 11 requirements outlined by Smith et al. (2000), as described in Santor and Coyne (1997). Thus, the revised CES-D is an acceptable measure of depressive symptoms.

Representative items of the revised CES-D include: "I felt that I could not shake off the blues even with help from my family or friends" and "I felt that everything I did was an effort." The revised version of the CES-D has been found to demonstrate good internal consistency. Coefficient alpha was .87 for a sample of primary care patients (Santor & Coyne, 1997). Furthermore, total scores on the 9-item revised scale correlated .93 with total scores from the original 20-item version (Santor & Coyne, 1997). In the current study, the CES-D was internally consistent for both husbands and wives. At Time 1, alpha coefficients were .85 for husbands and .87 for wives. At Time 2, alpha coefficients were .85 for husbands and .89 for wives.

Background Information:

Descriptive information was obtained from couples. This includes participants' age, gender, country of residence, relationship status (married or cohabiting), years married or cohabiting, number of times married or in a cohabiting relationship,

educational status, employment status, couples' combined annual income, and number of children.

Results

Data Screening

Cases where both partners completed all measures were used in the analysis. Prior to analyses, data were first examined visually for patterns that may suggest random responding by participants. There were no cases of random responding. Next, all variables were examined through various SPSS programs for accuracy of transformation of data into data file, missing values, and fit between the variable distributions and the assumptions of multivariate analyses. Data were then assessed for missing items on the study measures. Participants who failed to respond to an entire measure or who missed many items on one measure were removed from the analysis. Thus, data from 5 couples were removed. In 1 case, the participant failed to complete the majority of measures; in 2 cases, the participant failed to respond to an entire measure; and in 2 other cases, the participant failed to respond to many items on one measure. Otherwise, there were few missing values and they seemed to be randomly distributed. In cases in which a participant was missing 1 item on a particular measure, the sample mean for that item was substituted. Of this missing data, most couples had only 1 datum missing ($n = 27$), and a few had 2 ($n = 10$) or 3 values missing ($n = 1$).

With respect to demographic information, there were few missing values. However, many participants failed to respond to the item asking about the number of times married or in a cohabiting relationship. Data were missing from 11 husbands and 8 wives. Thus, this variable was removed from the analysis. Where participants had missing data on years married or cohabiting, relationship status, and income, the missing values

were inferred from their partner's data. This affected 6 couples. There were only 5 couples with information missing on variables that could not be inferred from partner data. One wife left out information on employment status, 2 husbands left out information on number of children, and 2 couples left out information on relationship status. Because the omission of this information was infrequent and random, the data of these participants were retained.

Next, variables were examined for normality. Skewness and kurtosis values provided by SPSS frequencies, as well as the histograms for the variables to be included in the analysis, indicated that the scores for both husbands and wives were within reasonable limits, with some exceptions. Both husbands' and wives' scores were positively skewed and kurtotic for the RPEQ at both Time 1 and at Time 2. Husbands' and wives' scores were positively skewed for the DIRI-RS and for the CES-D at both Time 1 and at Time 2. Following recommendations by Tabachnick and Fidell (2001), scores on these measures were transformed. Log transformations of the RPEQ and the CES-D scores for both husbands and wives improved normality. There were no transformations that were able to improve normality for the DIRI-RS scores for both husbands and wives, and therefore it was not transformed in the current analyses. However, this is not a significant concern as the scores for this measure were only slightly skewed and kurtotic. With larger samples, the statistically significant skewness and kurtosis does not deviate enough from normality to make a substantive difference in the analysis (Tabachnick & Fidell, 2001).

Scores on the variables were examined for outliers. Although there were 4 cases that were initially identified as outliers (2 husbands and 1 wife had high z scores on the rejection variable, 1 husband had high z scores on the depression variable at Time 1), the impact of these cases was reduced after scores on the variables were transformed, as described above. One case was identified through Mahalanobis distance as a multivariate outlier. This case was removed from further analyses. Evaluation of multicollinearity was assessed using the SPSS collinearity diagnostic. No multicollinearity was evident. The final sample consisted of 129 couples at Time 1 and 74 couples at Time 2.

Characteristics of the sample

Table 1 describes the demographic characteristics of the sample. The majority of the sample consisted of residents of the United States (77%). Another 15% were residents of Canada and 5% were residents of the United Kingdom. Additionally, there was one couple each from South Africa, New Zealand, and Russia. The majority of the couples were married (79%) and had been living together for an average of 9.5 years ($SD = 8.4$). The mean age for wives was 33 years ($SD = 10.0$) with a range from 18 to 59 years. The mean age for husbands was 35 years ($SD = 10.2$) with a range from 21 to 62 years.

Participants were generally well-educated. Education status is reported in Table 2.

Approximately 40% of both husbands and wives reported having at least a college diploma or a bachelor's degree. More husbands than wives were employed outside of the home. Employment status is reported in Table 3. Eighty-six percent of husbands and 47% of wives indicated that they were currently employed. Thirty percent of wives identified themselves at a stay-at-home parent, whereas only 2% of husbands identified themselves

this way. Very few participants were unemployed (2% and 4% in husbands and wives, respectively). Income level is reported in Table 4. Fifty-six percent of couples indicated having a combined income of at least \$45 000.

Table 1

Means and standard deviations for the demographic and study variables

	Wives		Husbands		t	p
	Mean	SD	Mean	SD		
Duration of marriage/cohabitation (years)	9.58	8.64	9.58	8.64	-	-
Age (years)	33.01	10.06	34.84	10.21	-3.77	.000
Number of children ¹	2.46	1.27	2.47	1.26	0.16	.874
T1 Depressive symptoms (CES-D) ²	15.81	1.39	15.65	1.37	-0.44	.657
T2 Depressive symptoms (CES-D) ²	15.52	1.40	14.8	1.35	-1.04	.299
Reassurance-seeking (DIRI-RS)	11.72	5.94	10.54	6.08	1.55	.124
Negative self-verification (FSQ)	2.79	1.91	3.47	2.04	-3.08	.000
Rejection (RPEQ) ²	15.57	1.37	15.74	1.39	0.21	.830
Sociotropy (PSI-SOC)	46.44	10.57	38.77	11.01	5.99	.000
Autonomy (PSI-AUT)	41.16	8.92	43.47	8.98	2.42	.017

Notes. CES-D = Centre for Epidemiologic Studies-Depression Scale, Revised; DIRI-RS = Depressive Interpersonal Relationship Inventory;

Reassurance-Seeking Subscale; FSQ = Feedback-Seeking Questionnaire; RPEQ = Rosenberg Partner-Esteem Questionnaire; PSI-SOC = Personal Style Inventory, Sociotropy Subscale; PSI-AUT = Personal Style Inventory, Autonomy Subscale; T1 = Time 1; T2 = Time 2.

¹ Calculated for couples with children only (n = 89).² Means and standard deviations are for non-transformed scores. T-values assessed on transformed scores.

Table 2

Highest education level attained (percentages)

Level	Wives	Husbands
Grade school	0.8	0.8
High school	11.5	14.6
Technical diploma	2.3	3.8
Some college	43.1	36.2
College diploma	11.5	13.1
Bachelor's degree	20.0	17.7
Professional degree	0.8	1.5
Master's degree	6.2	8.5
Ph.D.	3.1	1.5
Other	0.8	2.3

Table 3

Employment status (percentages)

Status	Wives	Husbands
Employed	46.9	86.2
Unemployed	3.8	2.3
Unemployed and not looking for work	4.6	0.8
Student	13.8	5.4
Stay-at-home parent	30.0	2.3
Retired	0.8	2.3
Missing	0.8	—

Table 4

Combined income level (percentages)

Level	Couples
Under \$14 000	3
\$15 000 - \$29 000	20
\$30 000 - \$44 000	21
\$45 000 - \$59 000	21
\$60 000 - \$74 000	16
Over \$75 000	19

Table 1 also shows the means and standard deviations on the measured variables for the couples included in the analyses. Reassurance-seeking scores on the DIRI-RS were comparable to those reported previously in couples (Benazon, 2000). Likewise, negative self-verification scores on the RPEQ were comparable to samples of university roommates (Joiner et al., 1993; Joiner & Metalsky, 1995) as were rejection scores on the RPEQ (Joiner et al., 1993). Normative scores were not available for the autonomy and sociotropy dimensions of the shortened version of the PSI used in the current study. In terms of depression, on the short form of the CES-D, Santor and Coyne (1997) describe a simplified scoring scheme that can be used to identify cases of clinical depression. In this manner, items are dichotomously weighted: Items are scored as 0 if participants select 1 or 2 as their response, and 1 if they select 3 or 4. Individuals with a cutpoint of 4 and over can be generally classified as depressed. Mean scores, using this scheme, were comparable to those obtained by Santor and Coyne (1997). In the current study, 18% of wives and 20% of husbands had scores that would classify them as being depressed.

Paired *t*-tests (see Table 1) revealed significant differences between husbands and wives on some of the variables being tested. There was a significant difference in ages; husbands were older than wives, as expected. Additionally, wives scored significantly higher than husbands on the sociotropy dimension and husbands scored significantly higher than wives on the autonomy dimension of the PSI. These gender differences are consistent with previous findings (Robins et al., 1994). Husbands scored significantly higher than women on the FSQ, indicating that husbands are more likely to seek negative feedback than are wives.

It is important to note that an overall change in depressive symptoms from Time 1 to Time 2 was not anticipated. Some individuals were expected to display an increase in depression from one time to the other, others a reduction, whereas others would change little. There was no significant change in scores for either husbands or wives in depression from Time 1 to Time 2, as expected.

Correlations among measures

The zero-order correlations among the variables for husbands and wives are reported in Tables 5, 6, and 7. Only correlations relevant to the hypotheses are discussed. Reassurance-seeking on the DIRI-RS and negative self-verification on the FSQ were not significantly correlated for either husbands or wives. This is consistent with the conceptualization of the two measures as distinct. As expected, for both husbands and wives, correlations between reassurance-seeking and negative self-verification and both partner rejection and depression were low or non-significant, which suggests the possibility of moderation effects.

Sociotropy was significantly correlated with depression at both Time 1 and Time 2 for wives but not for husbands. This gender difference in personality style is consistent with previous findings (Robins et al., 1994). Autonomy was correlated with depression only at Time 1 for both husbands and wives. As expected, sociotropy in both husbands and wives was significantly correlated with reassurance-seeking but not with negative self-verification. However, for both husbands and wives, autonomy was correlated with neither reassurance-seeking nor negative self-verification.

Table 5

Bivariate correlations among wives' variables

Measure	1	2	3	4	5	6	7
1. T1 CES-D	—						
2. T2 CES-D	.556**	—					
3. DIRI-RS	.323**	.242*	—				
4. FSQ	.276**	.080	.011	—			
5. RPEQ	.288**	.303**	.137	.153	—		
6. PSI-SOC	.439**	.246*	.396**	.088	.103	—	
7. PSI-AUT	.347**	.084	.088	.119	.147	.175*	—

Notes. CES-D = Centre for Epidemiologic Studies–Depression Scale, Revised; DIRI-RS = Depressive

Interpersonal Relationship Inventory: Reassurance-Seeking Subscale; FSQ = Feedback-Seeking

Questionnaire; RPEQ = Rosenberg Partner-Esteem Questionnaire; PSI-SOC = Personal Style Inventory,

Sociotropy Subscale; PSI-AUT = Personal Style Inventory, Autonomy Subscale; T1 = Time 1; T2 = Time 2.

* $p < .05$; ** $p < .01$.

Table 6

Bivariate correlations among husbands' variables

Measure	1	2	3	4	5	6	7
1. T1 CES-D	—						
2. T2 CES-D	.604**	—					
3. DIRI-RS	.201*	.285*	—				
4. FSQ	.136	.197	.051	—			
5. RPEQ	.195*	.448**	.058	.080	—		
6. PSI-SOC	.131	.175	.314**	.149	.130	—	
7. PSI-AUT	.251**	.216	.099	-.011	.046	.009	—

Notes. CES-D = Centre for Epidemiologic Studies–Depression Scale, Revised; DIRI-RS = Depressive

Interpersonal Relationship Inventory: Reassurance-Seeking Subscale; FSQ = Feedback-Seeking

Questionnaire; RPEQ = Rosenberg Partner-Esteem Questionnaire; PSI-SOC = Personal Style Inventory,

Sociotropy Subscale; PSI-AUT = Personal Style Inventory, Autonomy Subscale; T1 = Time 1; T2 = Time 2.

* $p < .05$; ** $p < .01$.

Table 7

Bivariate correlations among wives' and husbands' variables

Measure	Wife T1 CES-D	Wife T2 CES-D	Wife DIRI-RS	Wife FSQ	Wife RPEQ	Wife PSI-SOC	Wife PSI-AUT
Husband T1 CES-D	.105	.161	.062	.154	.101	.163	.038
Husband T2 CES-D	.240*	.270*	.122	.155	.373**	.272*	.081
Husband DIRI-RS	.072	-.074	-.046	.077	.178*	.000	.146
Husband FSQ	.073	.089	-.029	.253**	.065	.003	-.059
Husband RPEQ	.242**	.285*	.127	.176*	.259**	.208*	.122
Husband PSI-SOC	.079	.000	.074	.053	.069	.065	.235**
Husband PSI-AUT	.168	.011	.135	.003	.162	.165	.266**

Notes. CES-D = Centre for Epidemiologic Studies–Depression Scale, Revised; DIRI-RS = Depressive Interpersonal Relationship Inventory;

Reassurance-Seeking Subscale; FSQ = Feedback-Seeking Questionnaire; RPEQ = Rosenberg Partner-Esteem Questionnaire; PSI-SOC = Personal Style

Inventory, Sociotropy Subscale; PSI-AUT = Personal Style Inventory, Autonomy Subscale; T1 = Time 1; T2 = Time 2. * $p < .05$; ** $p < .01$.

Tests of the Moderating Hypotheses

To test the moderating hypotheses, the analytic framework for testing moderator effects using multiple regression analyses described by Baron and Kenny (1986) and others (Holmbeck, 1997; Pedhazur, 1982) was employed. Moderation implies that the causal relationship between two variables varies as a function of a third variable (Baron & Kenny, 1986). To test for moderation, a statistical analysis must therefore test for the presence of a significant differential effect of the independent variable on the dependent variable as a function of the moderator. In regression equations, this is done by adding the product (i.e., interaction term) of the continuous independent and moderator variables to the regression equation, and testing for its significance while the other variables are controlled. The predictor and moderator main effects are entered into the equation first, followed by the interaction terms between the predictor and moderators.

Following this method, the hypothesized interaction between partner rejection, reassurance-seeking, and negative self-verification was used to predict changes in depression. Predictors were entered into the regressions in a hierarchical fashion. Depression scores at Time 1 were entered first into the regression equation, thereby creating residual change scores in depression from Time 1 to Time 2. This controls for baseline depression (Joiner & Metalsky, 1995). Next, Time 1 depression, partner rejection, reassurance-seeking, and negative self-verification were entered as main effects into the regression equation. This was followed by the set of two-way interactions. Finally, the three-way interaction term was entered.

The assumption of homogeneity of covariance was also tested in the current analysis based on the recommendation of Joiner (1994) who underscores the statistical necessity of testing this assumption in studies using baseline symptoms scores to assess prospective increases in symptomatology. In both husbands and wives, the assumption was satisfied.

As can be seen in Table 8, in the husbands' data, the rejection X reassurance-seeking X negative self-verification three-way interaction significantly predicted residual changes in depression from Time 1 to Time 2 ($t = 2.76, p < .01$). This equation accounts for 55% of the variance of husbands' change in depressive symptoms. The three-way interaction in the wives' data, as can be seen in Table 9, was not significant ($F = 1.39, ns$). Instead, as expected, the partner rejection X reassurance-seeking two-way interaction was significant ($t = 2.46, p < .05$). The partner rejection X negative self-verification interaction was not significant ($t = 1.89, p = .06$), nor was the reassurance-seeking X negative self-verification interaction ($t = 1.40, p = .17$).

To depict the interaction effects, following Cohen and Cohen (1983), residual change scores for depression were predicted by inserting specific values for predictor variables (i.e., one standard deviation above and below the mean) into the regression equation associated with the regression analyses reported in Tables 8 and 9. The results of the descriptive analyses are presented in Figures 3 and 4. As can be seen in Figure 3, for husbands, high rejection was always associated with increased depression except when husbands neither sought reassurance nor negatively self-verified. In addition, high reassurance-seeking, high rejection, and high negative self-verification were related to

increases in depression. This is consistent with previous research. However, the greatest change in depression was associated with husbands being high in both reassurance-seeking and rejection, but with lower negative self-verification scores. It is important to note that it is not known whether the groups (i.e, the different combinations of high and low levels of the variables) differ significantly.

For wives, as can be seen in Figure 4, high rejection was associated with increased depression only when wives sought reassurance from their husbands. Wives who sought reassurance and were not rejected by their husbands experienced decreases in depression over time.

Table 8

Partner rejection, reassurance-seeking, negative self-verification at Time 1 predicting residual changes in depression from Time 1 to Time 2 in husbands

Order of entry in set	Predictors in set	R^2	ΔR^2	F	Beta	t
1	Baseline Dep (T1)	.36	.36	41.29***	.572	5.98***
2	Main effects Rej (T1) RS (T1) NSV(T1)	.47	.10	4.36**	-1.27 -7.05 -6.14	2.70** 2.87** 3.06**
3	Two-way interactions Rej X RS Rej X NSV RS X NSV	.49	.03	1.23	8.05 6.14 8.31	2.88** 3.02** 2.80**
4	Three-way interaction Rej X RS X NSV	.55	.05	7.63**	-9.14	2.76**

Notes. Dep = Depression; Rej = Partner rejection; RS = Reassurance-seeking; NSV = Negative self-

verification; ΔR^2 = change in R^2 when variable entered into equation; F = F-value associated with change in

R^2 ; Beta = standardized beta weights; t = t-value for within set predictors.

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

Table 9

Partner rejection, reassurance-seeking, negative self-verification at Time 1 predicting residual changes in depression from Time 1 to Time 2 in wives

Order of entry in set	Predictors in set	R^2	ΔR^2	F	Beta	t
1	Baseline Dep (T1)	.31	.31	32.30***	.52	4.26***
2	Main effects Rej (T1) RS (T1) NSV(T1)	.35	.05	1.58	.03 -2.02 1.82	.11 2.20* 1.90
3	Two-way interactions Rej X RS Rej X NSV RS X NSV	.43	.08	2.96*	2.36 -1.86 -.40	2.30* 1.89 1.40
4	Three-way interaction Rej X RS X NSV	.44	.02	1.93	-3.86	1.39

Notes. Dep = Depression; Rej = Partner rejection; RS = Reassurance-seeking; NSV = Negative self-

verification; ΔR^2 = change in R^2 when variable entered into equation; F = F-value associated with change in

R^2 ; Beta = standardized beta weights; t = t-value for within set predictors.

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

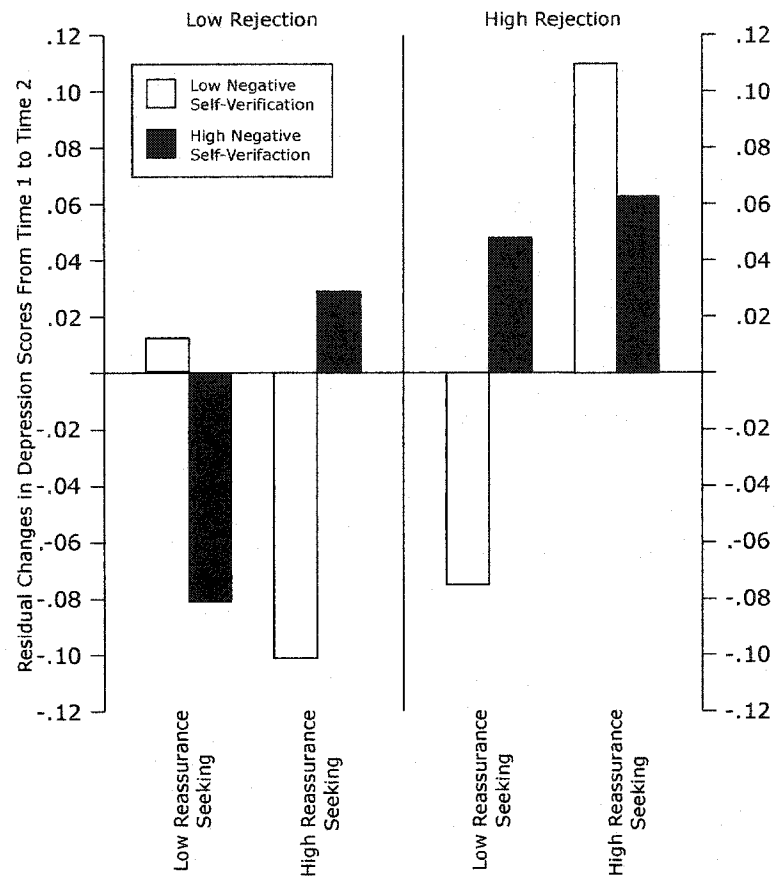


Figure 3. Reassurance-Seeking, Negative Self-Verification, Partner Rejection Interaction as a result of residual change scores in Depression in Husbands

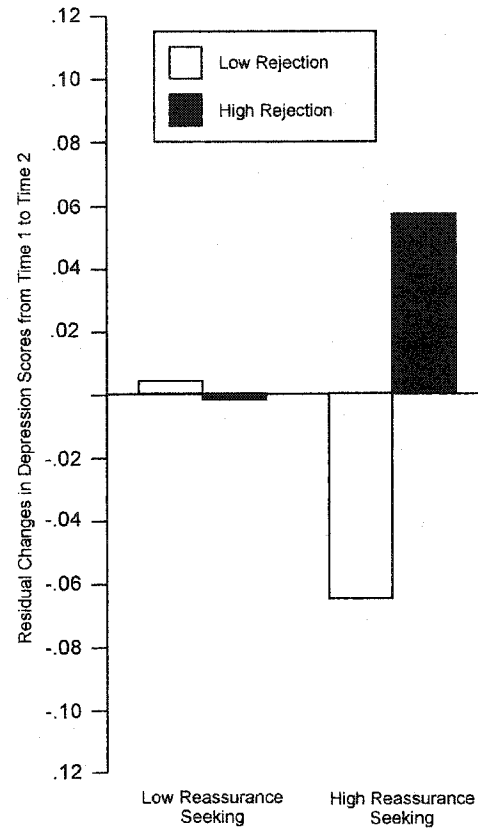


Figure 4. Reassurance-Seeking and Partner Rejection Interaction as a result of residual change scores in Depression in Wives.

Tests of the Causal Path Models

The a priori unified models were tested separately for husbands and wives using the program Analysis of Moment Structures (AMOS; Arbuckle, 1999). The maximum likelihood (ML) method was used for the estimation of parameters. Several fit statistics were used to assess the goodness-of-fit between the model and the sample data. The chi-square (χ^2) goodness-of-fit index was initially examined. A significant chi-square reflects statistically significant discrepancies between the observed covariances and the covariances implied by the fitted model. As with all inferential statistics, however, such statistical significance may not reflect discrepancies that are large enough to be of concern. With large samples, substantial trivial discrepancies can lead to the rejection of an otherwise highly satisfactory model; with small samples, chi-square can be nonsignificant even with models with a poor fit (Loehlin, 1998). Consequently, a variety of other fit indices were examined that take into account different aspects of fit, such as model of comparison and parsimony. The indices considered in the current analysis were the Goodness-of-Fit Index (GFI), the Comparative Fit Index (CFI), the Adjusted Goodness-of-Fit Index (AGFI), and the Root Mean Square Error of Approximation (RMSEA).

The GFI is a measure of the relative amount of variance and covariance in the sample covariance matrix that is jointly explained by the population covariation matrix. The AGFI is similar to the GFI, but takes parsimony into consideration. That is, the AGFI takes into account the number of unknowns used to achieve that fit by including the model's degrees of freedom in its calculation. The GFI and the AGFI are absolute indices

of fit because they compare the hypothesized model with no model at all. Both indices range from 0 to 1.00, and values close to 1.00 are indicative of a good fit (Byrne, 2001).

The CFI is a revision of a previously commonly-used fit statistic, the Normed Fit Index (NFI), which takes sample size into account. It is an incremental or comparative index of fit because it compares the hypothesized model to a baseline model (i.e., independence or null model). Values for the CFI range from zero to 1.00, and values above .90 and close to .95 are representative of a well-fitting model (Hu & Bentler, 1999).

The RMSEA has recently been considered as possibly one of the most informative fit statistics. It is a population-based index that represents the magnitude of the discrepancies between the implied and actual covariances. A value of 0 indicates a perfect fit, a value of .05 or less is an indication of a close fit, and a value greater than .10 indicates a poor fit (Browne & Cudek, 1993). There are many benefits to the RMSEA (see Byrne, 2001; Loehlin, 1998). First, because it is a population-based index, it is relatively insensitive to sample size. Population-based indices are based on estimates of the error of approximation, which are independent of sample size. Second, it has an explicit parsimony adjustment. Third, it is possible to obtain confidence intervals for the RMSEA. Whereas a wide confidence interval suggests that the estimated discrepancy value is imprecise, thereby negating any possibility to determine accurately the degree of fit in the population, a narrow confidence interval suggests good precision of the RMSEA value in reflecting model fit in the population. It is also possible to test a hypothesis of close fit, that in the population the root-mean-square error of approximation for the model

is .05 or less. That is, it tests the hypothesis that the RMSEA is “good” in the population. Finally, the RMSEA can be used to test a null hypothesis of poor fit by examining the upper limit of the 90% confidence interval—whether it is below the level for acceptable fit.

The above fit statistics were used to determine the fit of the models to the data. The models were tested to include main effects, as illustrated in Figures 1 and 2.

Sociotropy Model

Fit indices for husbands and wives for the sociotropy model are indicated in Table 10. In general, all fit indices for both husbands and wives were poor, including the GFI, the CFI, the AGFI, the RMSEA, and particularly the RMSEA probability test. This is likely because one main effect in the model contributes little to the prediction of depression and the other is negatively related to depression.

Fit of individual parameters were also assessed. Parameter estimates that are significant at the .05 level are considered important (Byrne, 2001). For both wives and husbands (Figures 5 and 6, respectively), standardized regression weights from sociotropy to the interaction term (rejection X reassurance) to depression were all significant. Weights for the reassurance-seeking main effect were also significant, but not for the rejection main effect. It is notable that the weight from reassurance-seeking to depression was negative. Reassurance-seeking can be seen as functioning as a supressor variable because it suppresses variance that is irrelevant to prediction of depression and also enhances the effect of the interaction in predicting depression (Tabachnick & Fidell, 2001). This variable is defined as a supressor variable because the simple correlation and

beta weight have opposite signs. Therefore, this suggests that reassurance-seeking on its own (i.e., without partner rejection) results in decreases in depression.

When the model was tested without main effects, fit indices indicated a good fit of the model to the data for both husbands and wives. Results are reported for wives first, then husbands. For wives, the GFI and the CFI suggest an excellent fit, and the AGFI and the RMSEA suggest a very good fit. In addition, the RMSEA probability test indicates a reasonable fit. Standardized regression weights for all parameters were significant. For husbands, the GFI, the CFI, and the AGFI all reflect an excellent fit. The RMSEA indicates a perfect fit. In addition, the RMSEA probability test suggests a close fit. The husbands sociotropy model is illustrated in Figure 6. Standardized regression weights for all parameters were significant.

Autonomy Model

Fit indices for both husbands and wives for the autonomy model indicate a poor fit of the model to the data, as indicated in Table 10. Results are reported for wives first, then husbands. For wives, all fit measures indicate a poor fit, including the GFI, the CFI, the AGFI, the RMSEA, and particularly the RMSEA probability test. The wives autonomy model is illustrated in Figure 7. The standardized regression weights for the path from negative self-verification X rejection was significant, but the path from autonomy to negative self-verification was not. The path from autonomy to rejection was marginally significant.

For husbands, similarly, all fit measures indicate a poor fit, including the GFI, the CFI, the AGFI, the RMSEA, and the RMSEA probability test. The husbands autonomy

model is illustrated in Figure 8. The standardized regression weights for the path from rejection X depression was marginally negatively significant, and the path from negative self-verification to depression was significant.

Table 10

Goodness-of-fit statistics for husbands and wives for the proposed models

	χ^2	N	GFI	CFI	AGFI	RMSEA	CI (RMSEA)	pCF (RMSEA)
Sociotropy model: with main effects								
Husbands	81.41***	74	.680	.067	.181	1.050	.995-1.148	.000
Wives	79.61***	74	.704	.107	.188	1.038	.943-1.136	.000
Sociotropy model: without main effects								
Husbands	.359	74	.997	1.000	.980	.000	.000-.260	.584
Wives	1.590	74	.986	.973	.915	.090	.000-.340	.248
Autonomy model								
Husbands	81.58***	74	.700	.001	.187	1.051	.956-1.149	.000
Wives	88.98***	74	.644	.065	.172	1.098	1.003-1.196	.000
Exploratory model for husbands	.406	74	.996	1.000	.978	.000	.00-.265	.561

Note: GFI = Goodness of Fit Index; CFI = Comparative Fit Index; AGFI = Adjusted Goodness of Fit Index; RMSEA = Root Mean Square Error of

Approximation, CI (RMSEA) = Confidence interval for the RMSEA; pCF (RMSEA) = probability test of close fit for the RMSEA.

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

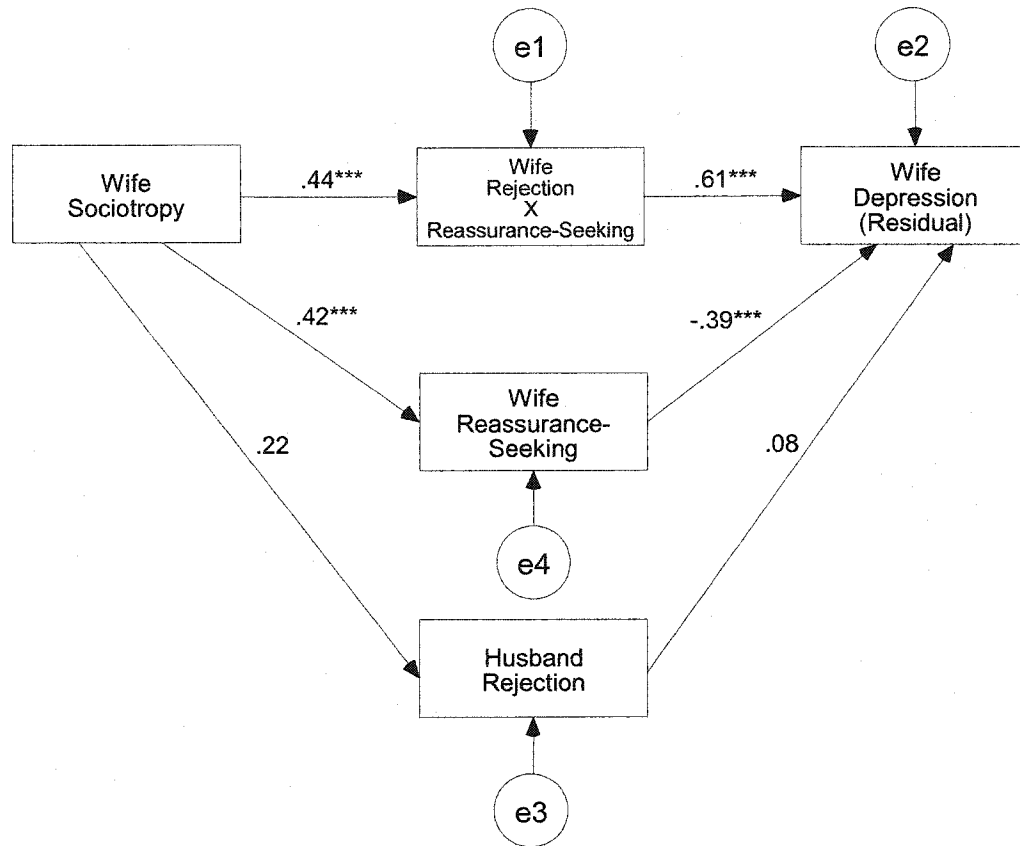


Figure 5. Standardized estimates for the sociotropy model for wives.

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

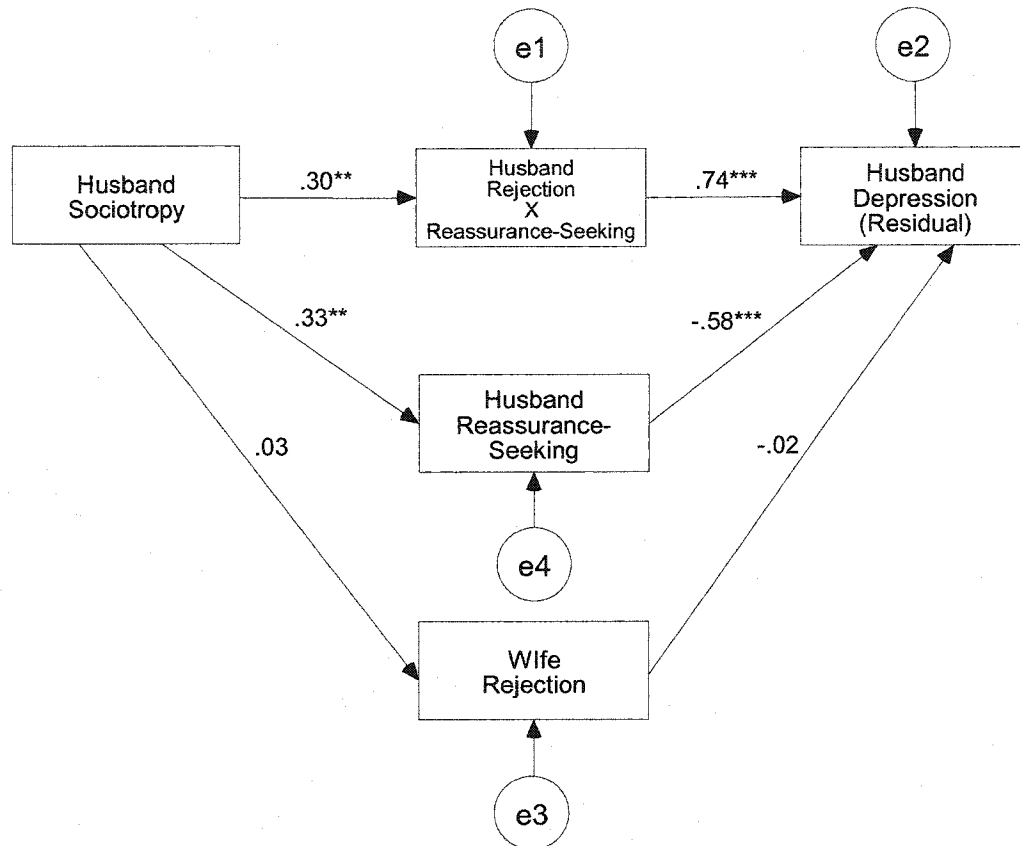


Figure 6. Standardized estimates for the sociotropy model for husbands.

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

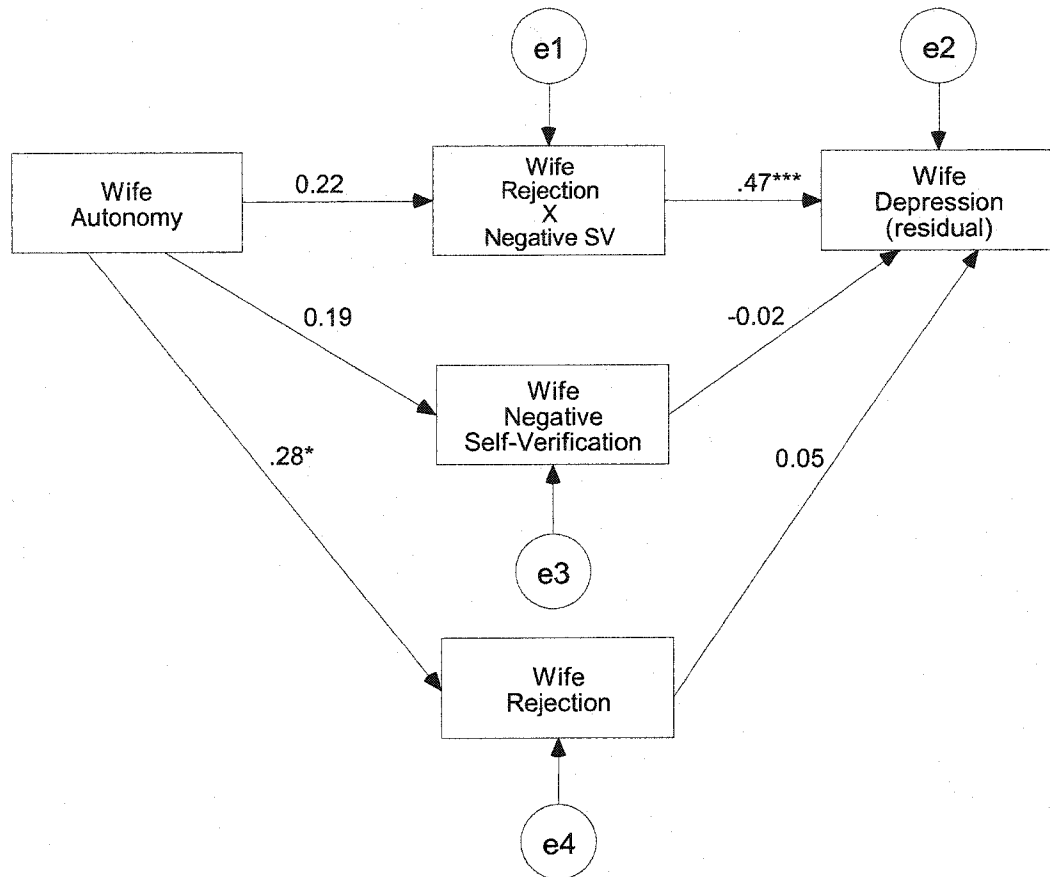


Figure 7. Standardized estimates for the autonomy model for wives.

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

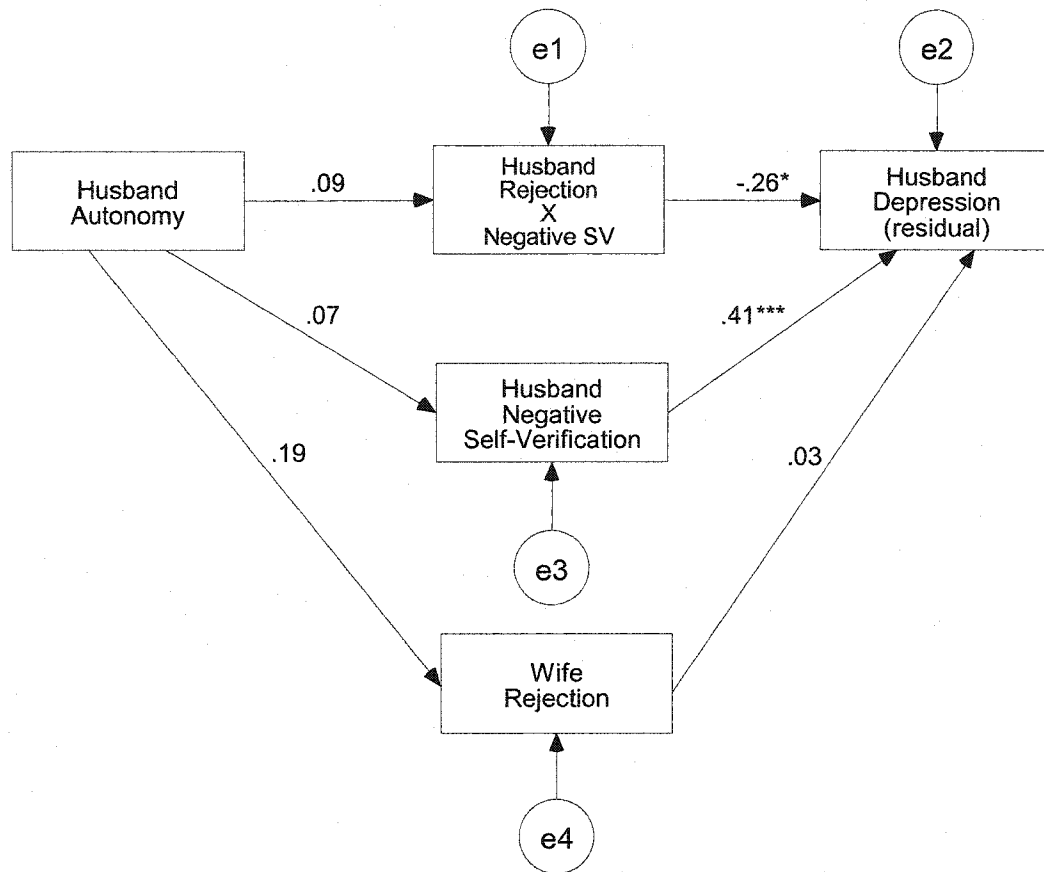


Figure 8. Standardized estimates for the autonomy model for husbands.

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

Exploratory Analysis

Because autonomy failed to predict the interpersonal behaviours as hypothesized, an additional exploratory analysis was conducted. Research suggests that in men, high levels of reassurance-seeking and negative self-verification, in combination with depression, predict rejection (Joiner et al., 1993; Joiner & Metalsky, 1995). This combination of interpersonal behaviours is likely depressogenic (Coyne, 1976a; Katz et al., 1998). Thus, it is possible that autonomy is related to depression only when there are high levels of both reassurance-seeking and negative self-verification present. This model is illustrated in Figure 9, and was tested in husbands only. Fit indices, as noted in Table 10, reflect a good fit of the model to the data. The GFI, CFI, and AGFI values all reflect an excellent fit. The RMSEA value indicates a perfect fit and the RMSEA probability test suggests a close fit. Standardized regression weights for all parameters were significant.

This model shows that autonomy predicts the interaction of rejection, reassurance-seeking, and negative self-verification, which in turn predicts change in depression. Recall that the post-hoc analysis of the three-way interaction term in the previous set of analyses revealed that, in husbands, high levels of rejection and reassurance-seeking but low levels of negative self-verification predicted an increase in depression. Thus, to understand the interaction in the current analysis in greater detail, the interaction term predicted by autonomy was decomposed in a similar manner as conducted earlier (Cohen & Cohen, 1983). The descriptive analysis, as can be seen in Figure 10, shows that autonomy is not associated with the combination of variables that was previously shown to predict the greatest increase in depression (low negative self-verification, high

reassurance-seeking, and high rejection). Instead, the highest levels of autonomy were associated with high negative self-verification, high reassurance-seeking, and high rejection. This suggests that the role of autonomy in men is complex.

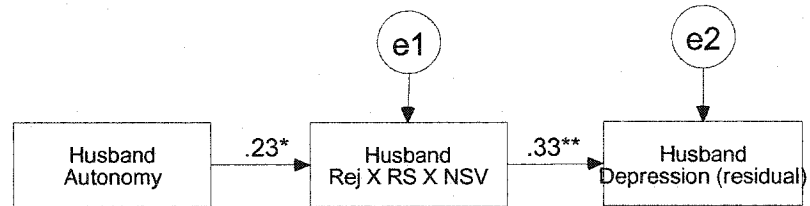


Figure 9. Exploratory model for husbands with standardized estimates.

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

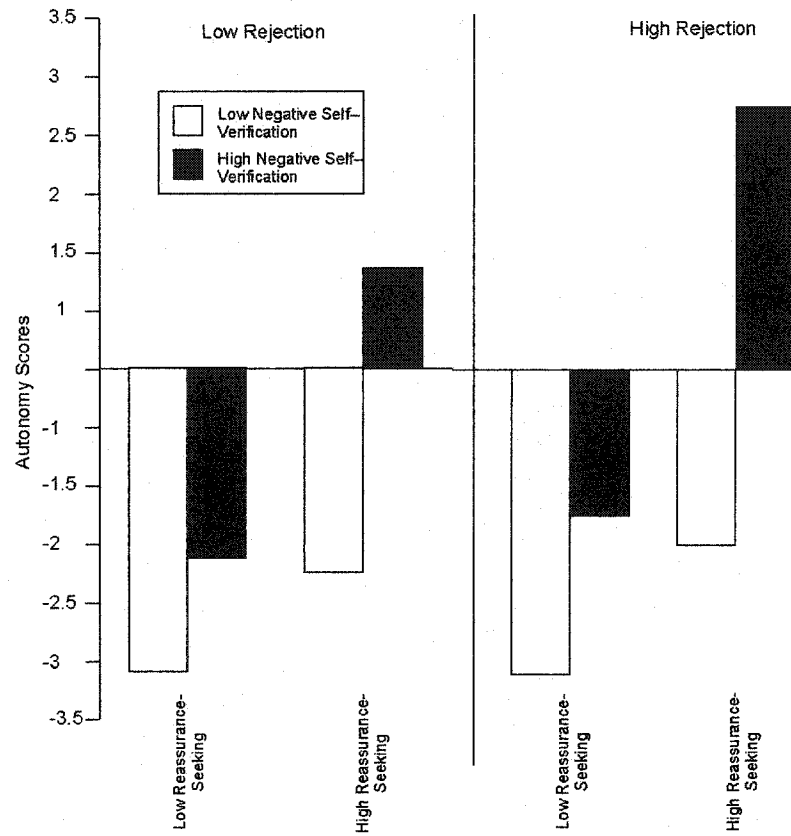


Figure 10. Reassurance-Seeking, Negative Self-Verification, and Partner Rejection

Interaction as a result of Autonomy Scores in Husbands.

Discussion

Interpersonal Theory of Depression

The first goal of this dissertation was to further explore interpersonal theory of depression (Coyne, 1976a). This theory proposes that depression arises in the context of problematic interpersonal interactions with close others. One primary component of the model is the rejection effect. That is, when depressed persons persistently seek support, others find the demands placed on them aversive. Although others intend to provide comfort, they instead communicate rejection. The rejection effect has been identified as a robust finding, particularly in long-term relationships (Marcus & Nardone, 1992; Segrin & Dillard, 1991). More recent research has attempted to examine variables that moderate the relationship between rejection and depression. Attention has been directed to the way in which support from others is sought, and subsequently reassurance-seeking and negative self-verification have been identified as two variables involved in the interpersonal cycle (Joiner et al., 1993; Joiner & Metalsky, 1995). Furthermore, there is evidence that rejection by close others may maintain or exacerbate depressive symptoms (Katz et al., 1998). Although progress has been made in understanding the nature of the interpersonal cycle, limitations in previous research exist, and additional concerns remain to be addressed.

Previous research demonstrated that the combination of reassurance-seeking and negative self-verification moderates the relationship between depression and rejection in same-gender male roommates (Joiner and Metalsky, 1995). That is, depressed men who sought high levels of reassurance and negative feedback were rejected by their

roommates. However, these results should be interpreted with caution. The original description of interpersonal theory (Coyne, 1976a) focuses on how depressed people interact with key people in their lives such as spouses and parents. Interactions with these significant others are important because of the entrenched nature of the relationship. In contrast, relationships with roommates are temporary and are not necessarily committed. Roommates may care little about the survival of the relationship, and subtle behavioural interactions may have little effect. In short, roommate relationships lack the qualities of close and enduring relationships. Additionally, Katz et al. (1998) found that reassurance-seeking in women rejected by male partners was predictive of depression over time. Thus, rejection by others maintains or exacerbates depression. However, effects were tested in women in short-term dating relationships only, and therefore, it is unclear whether results can be generalized to individuals in long-term relationships or to depression in men.

No research to date has investigated the moderating effects of both reassurance-seeking and negative self-verification in heterosexual married or cohabiting relationships. Furthermore, the prospective effects of rejection on subsequent increases in depression have received little attention. Thus, the current study filled an important gap in the literature, testing the hypothesis that a combination of reassurance-seeking, negative self-verification, and partner rejection would predict an increase in depression over time in husbands and wives in long-term heterosexual relationships.

Findings for Husbands

In husbands, high levels of rejection by wives were always associated with increased depression over time, except when husbands sought neither reassurance nor

negative self-verification. This result indicates that husbands are generally vulnerable to wives' rejection, consistent with Coyne's interpersonal theory suggesting that rejection is a key element in the pattern of interpersonal interactions which lead to depression (Coyne, 1976a; Segrin & Dillard, 1991).

The results also showed that when husbands seek neither reassurance nor negative feedback, their wives' rejection does not result in increased depression. This suggests that husbands are protected from the potentially depression-inducing effects of wives' rejection when they limit communication about themselves or their wives' feelings for them. It may be that husbands are insulating themselves from the effects of rejection by not engaging in behaviours that allow their wives to communicate the rejection to them. However, this pattern is perhaps indicative of a distressed relationship and a disconnection in the marriage. Marital research has shown that distressed couples tend to display a distinct pattern of interactions whereby one spouse pressures the other with demands, complaints, and criticisms, and the other partner withdraws with defensiveness and passive inaction (Christensen, 1988; Christensen & Shenk, 1991). Husbands more often withdraw and wives more often demand. It is theorized that such patterns prevent normal functioning in couples. Although the present study suggests that husbands may avoid becoming depressed by withdrawing from their wives, it may be that the relationship will likely become distressed as a result of this strategy. This possibility should be further explored in future research.

The present study showed that an increase in depression in husbands was associated with a combination of high levels of reassurance-seeking, negative self-

verification, and rejection. However, the highest increases in depression were associated with a combination of high reassurance-seeking and partner rejection, but *low* negative self-verification strivings. Based on past research by Joiner and Metalsky (1995), it was expected that high levels of all three variables should predict depression. It is important to note, however, that it cannot be known whether the difference in residual depression between these two conditions (i.e., high negative self-verification, high reassurance-seeking and high rejection versus low negative self-verification, high reassurance-seeking and high rejection) is significant. In any case, sample differences may account for the apparently divergent findings. As previously noted, the study conducted by Joiner and Metalsky (1995) involved same-gender roommates whereas the current study involved married or cohabiting partners. The difference in the duration of the two kinds of relationship may explain the different patterns of depression with regards to negative self-verification. It is not entirely clear how this comes about, but one possibility is the following: This pattern of behaviour (low negative self-verification, high reassurance-seeking, and high rejection) in a long-term relationship may be indicative of a husband who has learned to attempt to avoid rejection by not opening himself up to criticism. Married men presumably have a long-term familiarity with their wives and are likely to be aware of aspects of themselves that their partner disapproves of. Thus, these husbands may refrain from seeking negative feedback because they may fear deprecation by their wives, while at the same time continuing to seek reassurance. This strategy is not as successful at avoiding the depressogenic effects of rejection as the more complete withdrawal pattern discussed above (i.e., low reassurance-seeking, low negative self-

verification); indeed it seems to backfire. In a short-term relationship, such as roommate relationships, this pattern of behaviour may not yet have been learned by the rejected partner, who continues to seek both negative self-verification and reassurance.

The results of the present study do not support the “cognitive-affective crossfire” theory that Joiner and colleagues (Joiner et al., 1993; Joiner & Metalsky, 1995) suggest is implicated in the interpersonal description of depression. According to this theory, depression is associated with a vacillating interpersonal style involving conflicting needs to seek reassurance and to seek negative feedback. Mildly depressed individuals are believed to seek reassurance from others, and if reassurance is forthcoming, the individual will feel assured. As the information is processed cognitively, however, the depressed individual will question the accuracy of the feedback, prompting the desire to seek negative but self-confirmatory feedback. Vacillating from one feedback seeking style to another results in interpersonal stress, such that the combination of both reassurance-seeking and negative feedback-seeking is more aversive to others relative to either behavior alone (Joiner et al., 1993; Joiner & Metalsky, 1995). If depressed individuals who vacillate between seeking reassurance and seeking negative feedback are at greater risk for depression, as the theory suggests, then the combination of these two variables should be most strongly associated with depression. However, this was not found in the current study. Husbands who sought high levels of both reassurance and negative self-verification demonstrated nearly equal increases in depression to those who only negatively self-verified.

Findings for Wives

Different results were found for wives than for husbands. The combination of reassurance-seeking, negative self-verification, and rejection did not predict increases in depression. Instead, rejection was associated with increased depression when the wives sought reassurance from their husbands. This finding is consistent with past research in dating women (Katz et al., 1998), and suggests generalizability to long-term relationships. Furthermore, it supports the reassurance-seeking hypothesis (Joiner et al., 1992; 1993). The results also showed that wives who sought reassurance, and were not rejected, actually became less depressed. Thus, in some cases, seeking support about whether their partner cares about them may protect against depression; women who are able to seek reassurance from a partner who values them are at lower risk of developing depressive symptoms. A high level of reassurance-seeking is thus not necessarily a maladaptive behaviour on its own. This is consistent with research that suggests that seeking support in general plays a positive role in marital relationships, particularly in a time of stress (Cutrona, 1996). The presence of a supportive marital relationship has been shown to decrease vulnerability to depression, whereas the absence of a supportive marital relationship increases vulnerability (Jacobson, Fruzzetti, Dobson, Whisman, & Hops, 1993; Monroe, Bromet, Connell, & Steiner, 1986).

In general terms, the results of this study support the view that interpersonal factors contribute to the development or maintenance of depression. This is important because it moves the focus of depression away from the isolated individual—as has been the tradition in much of the past research—and incorporates the influence of others. This

approach to depression has important implications for psychological treatment.

Understanding problematic interactions allows for the identification of potential negative interaction cycles that may be addressed in treatment. Thus, treatment could involve working with family members or spouses to examine the nature of their interactions with depressed individuals. Indeed, there is compelling research supporting the use of marital therapy for the treatment of depression (e.g., Jacobson, Dobson, Fruzzetti, Schmalings, & Salusky, 1991; Jacobson et al., 1993; Koerner, Prince, & Jacobson, 1994).

Interpersonal Theory and Personality Style

A second goal of this study was to expand on interpersonal theory by incorporating personality styles that are related to depression. Research suggests that there are two broad personality styles—autonomy and sociotropy—which act as predisposing vulnerabilities in the development of depression. The personality styles are argued to influence the depressed individuals' perceptions of interpersonal situations and how they interact with others. Sociotropy is associated with heightened needs for affiliation and positive exchange with others, and autonomy is associated with heightened needs for independence and achievement (Beck, 1983). In this dissertation I argued that the interactions outlined in interpersonal theory can be predicted by the two personality styles. Attempts were made to link the sociotropic and autonomous personality styles to reassurance-seeking, negative self-verifying, and rejecting behaviours. No other study to date has investigated this relationship; thus the current exploration is a novel contribution to the literature.

Sociotropy Model

As predicted, sociotropy was correlated with reassurance-seeking but not negative self-verification in both husbands and wives. This suggests that people who highly value relationships and depend upon others tend to persistently seek assurance from others that they are lovable and worthy, even when such assurance has already been provided. This finding is related to research that shows that, in intimate relationships, those with a sociotropic personality style tend to be demanding of their partners (Lynch et al., 2001).

In addition, a test of the path model indicated that sociotropy in both husbands and wives was related to the combination of reassurance-seeking and rejection, which in turn predicted changes in depression. In other words, the relationship between sociotropy and depression was mediated by the combination of reassurance-seeking and rejection. This finding suggests that individuals who have a heightened need for affiliation and positive exchange with others may be vulnerable to depression because of an interactional pattern characterized by seeking reassurance from partners and being rejected. These results are consistent with past research, as well as with the original interpersonal description of depression (Coyne, 1976a). That is, individuals with a sociotropic style are argued to place great value on relationships and strongly depend on their partners (Beck, 1983; Bieling & Alden, 1998). As a result, they are apprehensive about the possibility of being disapproved of by others, and their self worth is based on interpersonal relationships (Mongrain & Zuroff, 1995). Thus, they may tend to seek reassurance. According to Coyne's (1976a) model, people are believed to reassurance-seek when they experience stress or threats to their self-worth. In response, partners are thought to

attempt to provide support but instead communicate rejection. The results of the present study suggest that sociotropy may be a predisposing factor for depression because individuals with a sociotropic style will tend to more often seek support from their partners in times of stress. Unfortunately, this reassurance-seeking can lead to a pattern of interpersonal interactions that culminates in rejection and thus depression. This effect may be exacerbated by an anxious attachment style characteristic of sociotropy (Whiffen et al., 2000; Zuroff & Fitzpatrick, 1995), which may lead wives to mistrust the reassurance offered by their husbands.

It is important to note that Coyne (1976a) argued that the distressed behaviour of depressed people evolves from a set of circumstances where usual sources of security, meaning, and validation have been disrupted or have otherwise proven to be insufficient. Such circumstances co-evolve with depression, but they are likely to be the result of stressful life changes or chronic difficulties. The current study did not examine whether individuals had experienced recent stressful experiences that may have precipitated the depressive behaviours. Future research would benefit by taking this factor into account.

The present study also demonstrated that reassurance seeking in the absence of rejection results in a decrease in depression. This is consistent with the findings from the test of interpersonal theory, and suggests that, for both husbands and wives, valuing relationships and consequently seeking reassurance is protective against depression when the support-seeking behaviour is not accompanied by rejection. That is, closeness and seeking comfort from marital partners may be adaptive to one's emotional well-being.

Although sociotropy is typically thought to be a vulnerability for depression, a review of the literature shows that these variables are not always correlated with one another (Coyne & Whiffen, 1995). The present study suggests that rejection may play a key role in determining whether sociotropy leads to depression or not. According to the interpersonal model, a combination of reassurance-seeking and rejection is necessary for depression to occur. The data presented here show a significant correlation between sociotropy and reassurance-seeking, suggesting that a sociotropic style leads to one of the factors that cause depression. However, there was no correlation between sociotropy and rejection. Instead, only in individuals where high levels of both rejection and reassurance-seeking occurred were high levels of depression measured. This finding suggests that the presence or absence of rejection is a key element in determining whether a sociotropic personality style acts as a vulnerability for depression. A better understanding of those factors which influence the relationship between reassurance-seeking and rejection would yield a more complete model of the link between personality styles and depression. Some factors to consider include reassurance-seeking style, the distress level of the relationships, and partners' personality characteristics and attitudes.

The current model for wives is important because it identifies possible causes of depression that are unique to women. Research shows that depression affects women at a much higher rate than men, at a ratio of approximately 2:1 (Culbertson, 1997; Nolen-Hoeksema, 1987). A number of theories have emerged that attempt to account for these gender differences. For example, it has been proposed that women are more likely than men to experience chronic negative circumstances, to have a low sense of mastery, and to

engage in ruminative coping (Nolen-Hoeksema, Grayson, & Larson, 1999). Although there is no theory that conclusively explains the gender difference (Bebbington, 1996), risk factors for depression are believed to be present in girls from an early age (Nolen-Hoeksema & Girgus, 1994). Personality styles related to depression may be one risk factor, assuming that sociotropy is similar to other personality traits and remains consistent across the lifespan. The findings of the present study suggest that the greater prevalence of sociotropic personality in women (Robins, et al., 1994) may partially explain gender differences in rates of depression.

Autonomy Model

The results of the current study demonstrated that autonomy was not correlated with negative self-verification in either husbands or wives, contrary to prediction. Moreover, a test of the path model showed that autonomy was not related to the combination of negative self-verification and rejection, which was hypothesized to predict increased depression. In other words, the relationship between autonomy and depression was not mediated by the combination of negative self-verification and rejection. Although the negative self-verification and rejection combination predicted changes in depression as expected, this cannot be accounted for by the autonomous personality style.

The test of the exploratory model for husbands revealed that high levels of autonomy were associated with high levels of negative self-verification in combination with high levels of both reassurance seeking and rejection. Thus, autonomy was not related to seeking negative feedback and rejection alone, but in combination with seeking

reassurance as well. The interaction of these three variables then was shown to predict change in depression. Consequently, it can be proposed that those husbands with heightened needs for independence and achievement who seek both negative feedback and reassurance, and who are rejected by their wives, are at risk for depression. This finding may reflect the fact that autonomy has been found to be related to reduced levels of trust and self-disclosure (Zuroff & Fitzpatrick, 1995). Thus, generally speaking, husbands with an autonomous style would only be inclined to seek negative feedback when they were also seeking reassurance. That is, for men with autonomy, seeking negative information co-occurs with reassurance-seeking.

Additional analyses of the interaction showed that the greatest level in autonomy was associated with high levels of negative self-verification, reassurance-seeking, and rejection. In contrast, recall that the combination of variables that was most strongly predictive of increases in depression in husbands involved low negative self-verification. Therefore, by implication, autonomy is not associated with this combination. This finding suggests that the interpersonal factors involved in the relationship between autonomy and depression is more complicated than that between sociotropy and depression. For men with an autonomous personality style, the interpersonal variables (negative self-verification, reassurance-seeking, and rejection) play a complex role in predicting depression.

In general terms, this study makes initial attempts to explore interpersonal characteristics of sociotropy and autonomy. Although a host of studies have identified traits and qualities of interpersonal interactions for the two personality styles, a

description of the behaviours that are involved in the interactions has been neglected in the literature. The current study makes some progress by illustrating how the personality styles are related to interpersonal interactions in men and women in close relationships, and by identifying a potentially interesting avenue for further exploration.

On-line Research

This thesis supports the use of internet studies for couples research. One concern with on-line studies is that, as they are anonymously available to the general public, some individuals may enter random responses in the questionnaires with the intent of causing mischief. There were no cases of mischievous responding in the current study based on an examination of the raw data and a test for outliers. Because of the nature of the study and the length of the questionnaires, only those individuals who were genuinely interested in the study likely participated. A second concern regards the generalizability of results.

Internet studies require participants to have access to a computer and some knowledge of how to use one, which implies relatively high socioeconomic and educational levels. This may limit generalizability to the general population. However, the sample in the current on-line study appears similar to other community samples. A comparison with other community-based couples studies reveals little difference in sample characteristics. For example, the current sample was nearly equivalent in employment level, education level, average age, and average number of years living together to two other samples of couples in married or cohabiting relationships from two separate studies where data was collected using more traditional methods (Bouchard, Lussier, & Sabourin, 1999, 446 couples; Whiffen & Aube, 1999, 64 couples). This suggests that on-line samples are similar to

other community samples in terms of general characteristics, consistent with research (Krantz et al., 1997; Smith & Leigh, 1997). As access to computers becomes commonplace, the characteristics of on-line samples will more accurately reflecting general population characteristics.

Another concern relates to issues of data security. That is, there is the fear that participants' data will be vulnerable to interception by other sources when sent over the internet, or that data on the server will be "hacked" by individuals interested in gaining responses to questionnaires. However, with modern encryption techniques, such as those used in the current study, it is virtually impossible for anyone to access the information. Furthermore, it is possible for the researcher to further protect data by using unique codes to identify participants and item responses. If intruders were able to access the data files, they would not be able to associate them with any given individual.

On-line studies also allow for a number of benefits that surpass most traditional studies. For instance, they allow for sample diversity in geography that is difficult to achieve in community studies. In the current study, the majority of participants were recruited from different areas of North America, as well as some from the United Kingdom and other countries. This increases the generalizability of results. Additionally, because participants are afforded a significant degree of anonymity by completing responses on the internet, this encourages candid responding. Thus, internet results may reflect a more accurate portrayal of participant characteristics. Another advantage is that, as previously discussed, on-line studies produce fewer errors than traditional paper-and-pencil questionnaires (Pettit, 2002).

Taken together, this discussion suggests that on-line studies are equivalent, if not superior to, other more traditional community sampling techniques. Thus, the internet appears to be a viable medium for conducting psychological research, including couples research.

Limitations of the Present Study

Although the present study contributes to an expanded understanding of depression, it also has methodological limitations. First, behaviours between couples were assessed using self-report measures. Self-reports can be biased by an individual's mood, and it is difficult to determine whether behaviours are actual or perceived. A useful adjunct to the present study would be one using a behavioural methodology (similar to Hautzinger, Linden, & Hofman, 1982; Johnson & Jacob, 1997; Sher & Baucom, 1993). For example, couples could be observed during a structured interaction and rated on their behaviour by objective coders. Assuming similar results were found, the combination of this laboratory study with the present community-based study would provide compelling evidence that the effects seen here are real-world phenomena. Among other things, a behavioural methodology would allow for the measurement of nonverbal indicators of rejection that are a component of Coyne's interpersonal model (Coyne, 1976a).

Another limitation of this study concerns the instrument used to measure negative self-verification, that is, the Feedback-Seeking Questionnaire (FSQ). Its popularity notwithstanding, this instrument lacks sufficient internal consistency. The low reliability suggests that the FSQ does not measure negative self-verification consistently and reliably. It would be advantageous for future studies examining similar questions to use a

measure with superior psychometric qualities. Unfortunately, no such measure is currently available, and attention should be given to developing one for future research.

A related measurement concern involves the assessment of rejection. Rejection was conceptualized in the current study as affectively-based evaluative reactions (i.e., devaluation). However, in interpersonal interactions, rejection can also consist of attempts to distance oneself from the other, and may take the form of withdrawal (Gurtman, 1986). Because the current study only studied devaluation, it is most easily compared to studies that have done the same. Analysis of the present results in comparison with studies that have examined withdrawal only, or a combination of withdrawal and rejection, is difficult. Indeed, this inconsistency of operational definitions of rejection is a problem in the literature at large. Future studies could expand on the current work by examining both withdrawal and devaluation to increase comparability to other studies.

In addition, caution should be taken in generalizing the results of the present study to clinical depression. As previously discussed, analysis of the self-report depression measure in the current study indicated that 18% of wives and 20% of husbands would likely be identified as having symptoms consistent with depression. However, not all individuals would meet criteria for clinical depression. It is not clear, therefore, whether current results can be applied to clinical populations. Because the current study demonstrated important relationships between interpersonal behaviours and personality style and that certain behaviours were found to predict increases in depression, future research would benefit by examining these patterns in clinical samples.

It is also important to note that although the current study examined reassurance-seeking, negative self-verification, partner rejection, and sociotropic and autonomous personality styles, there are almost certainly other variables contributing to depression that were not examined. For instance, partner characteristics were not assessed. It is possible that an individual's personality style (sociotropic or autonomous) may influence how he or she responds to solicitations for reassurance or negative self-verification from others. Perhaps a complete interpersonal model of depression will have to account for personality characteristics of the individual with depression as well as characteristics of significant others.

Other limitations include self-selection of participants. Individuals may have been motivated to participate in the study based on the quality of their relationship. For instance, individuals may have been more willing to participate if they had either a very good relationship and were eager to reaffirm this through a questionnaire, or that they had a distressed relationship and were hoping to gain insight of their problems through the study. Future research could best take this into account by controlling for relationship distress.

This study was also limited in regards to administration factors. Although participants were requested to complete measures individually, it is possible that couples worked together or that they may have compared answers with one another. It is difficult to guard against this possibility, as it is in any community-based study.

Summary

This dissertation further explored the interpersonal theory of depression and examined how personality style may be related to interpersonal interactions. The findings of the study generally supported predictions.

For husbands, high levels of rejection were always associated with increased depression over time, except when husbands sought neither reassurance nor negative self-verification. Consistent with interpersonal theory (Coyne 1976a), this finding suggests that husbands are generally vulnerable to wives' rejection. In addition, this finding indicates that when husbands seek neither reassurance nor negative feedback, they are protected from increases depression, possibly through limiting communication in the marriage. Associations were made between this pattern of behaviour and the demand-withdrawal cycle discussed in marital research (Christensen, 1988, Christensen & Shenk, 1991).

Furthermore, in husbands, increased depression was associated with a combination of high levels of reassurances-seeking, negative self-verification, and wives' rejection. However, the present study found that the highest increase in depression was associated with high levels of reassurance-seeking and rejection, but *low* negative self-verification. Based on previous research with roommates (Joiner & Metalsky, 1995), it was expected that high levels of all three variables should predict depression. Divergent results may be explained in terms of sample differences, in that married or cohabiting relationships are normally longer and more entrenched than roommate relationships, and

husbands may have learned to avoid rejection by refraining from seeking negative feedback from their partners. Roommates may not have learned such behaviours.

For wives, rejection was associated with increased depression only when wives sought reassurance from their husbands. This finding, in combination with the finding that wives who sought reassurance and were not rejected actually became less depressed, supports the notion that seeking support about whether their partner cares may protect women from depression. This is consistent with research supporting the positive role of support-seeking in marital relationships (Cutrona, 1996; Jacobson et al., 1993; Munroe et al., 1986).

This dissertation also tested a number of hypotheses linking sociotropic and autonomous personality styles to interpersonal behaviours. As expected, sociotropy was correlated with reassurance-seeking, but not negative self-verification, in both husbands and wives. Analysis of a path model showed that the relationship between sociotropy and depression was mediated by the combination of reassurance-seeking and rejection. This finding is consistent with past research and the original interpersonal description of depression (Coyne, 1976a). In addition, seeking reassurance in the absence of rejection resulted in a reduced change in depression. These findings may explain why sociotropy has been found to not always be related to depression. The presence or absence of rejection was discussed as the key element in determining whether sociotropy acts as a vulnerability for depression. In addition, the relationship of sociotropy to the interpersonal behaviours that predict depression may explain gender differences in the rates of depression. Personality styles were discussed as possible risk factors for women.

Autonomy was not correlated with negative self-verification, nor was the relationship between autonomy and depression mediated by the combination of negative self-verification and rejection in both husbands and wives, contrary to expectations. However, an exploratory path model for husbands showed that high levels of autonomy were associated with high levels of negative self-verification, reassurance-seeking, and rejection, which then predicted depression. This suggests that autonomy is not related to seeking negative feedback and rejection alone, but in combination with seeking reassurance. Additional analyses revealed that the highest levels of autonomy were associated with high levels of negative self-verification, reassurance-seeking, and rejection. This is different than the combination of variables that was found to predict increased depression in husbands. Thus, interpersonal variables likely play a complex role in predicting the relationship between autonomy and depression in men.

Finally, this thesis supports the use of internet studies for couples research. There are a number of potential problems with conducting on-line research, such as random responding by anonymous individuals with the intent of causing mischief, limited generalizability of results to the general population, and limited data security. However, an analysis of the data revealed that these concerns were not present in the present study. Instead, there are a number of benefits to conducting on-line studies, such as sample diversity in geography, the possibility of more candid responding by participants, and reduced errors as compared to paper-and-pencil questionnaires. Thus, it was concluded that internet is a viable medium for conducting psychological research.

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Appendix A

Recruitment notice

Dear list members,

I would like to inform you about a survey I am conducting. I am a graduate student at the University of Ottawa (Ontario, Canada) and I am inviting couples to complete a short online survey of long-term relationships. If you are in a heterosexual relationship and have been married or living with your partner for at least 2 years, and you and your partner are between the ages of 18 and 65, I am interested in your opinions.

The study is anonymous and completely confidential. To show our appreciation for their help, all participants will be entered in a draw for \$100 once all parts of the study are completed.

For more information and/or to participate in the study, please go to:

<https://web.uottawa.ca/academic/socsci/psych/relation/index.html>

Please feel free to forward this message to anyone you think might be interested in the study. Apologies for bothering you if you do not meet eligibility criteria or are not interested in participating.

Thank you very much.

Sincerely,
Nicole Varshney

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Partner participation reminder letter

Dear Research Participant,

Thank you kindly for having participated in the Online Study of Long Term Relationships. We sincerely appreciate your contribution. In this study, we are very interested in getting feedback from both partners of the couple. This is a friendly reminder that we have not yet received your partner's responses. We welcome your partner's participation in the study. We would be delighted if they also completed the survey.

We would like to remind you that all individuals who participate in all parts of the study will be entered in a draw for \$100. Thus, if both you and your partner participate, you will have two chances to win \$100!

For more information and to complete the questionnaires, please refer your partner to the following web site:

<https://web.uottawa.ca/academic/socsci/psych/relation/index.html>

It is also important that we are able to pair couples' responses. We do not ask for your name at any time, but instead we ask that you both use the same codeword. Please pass on the codeword you selected for you and your partner to use when completing the survey.

If you did not participate in the study or if this message was sent to you in error, I would greatly appreciate it if you could inform me of this and I apologize for this inconvenience.

Thank you very much.

Sincerely,
Nicole Varshney

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Time 2 invitation letter

Dear Research Participant,

Thank you for having participated in the Online Study for Long Term Relationships 3 months ago. As you may remember, this study consists of two parts. We are delighted that you completed the first part of the study. We now greatly welcome the participation of you and your partner for the second part of the study.

The second part consists of a short survey that should take less than 10 minutes to complete. To remind you, when you finish this, your name will be entered in a draw for \$100. Your partner's name will also be entered in the draw once he or she finishes the survey. Both partners' names will be entered separately, so that means you have two chances to win! But remember, you need to complete the second part of the study to be eligible for the draw.

For more information and to complete the survey, please go to:

<https://web.uottawa.ca/academic/socsci/psych/relation/time2.htm>

This study is completely anonymous. We do not ask for your name, but instead we asked you to provide us with a codeword to pair your responses. In the first part of the study, you and your partner selected a codeword. Please use the same codeword for the second part.

We are very interested in your opinions. We would greatly appreciate it if you and your partner could take the time to complete the survey. Please feel free to contact us if you have any questions.

If this message was sent to you in error, I would greatly appreciate it if you could inform me of this and I apologize for the inconvenience.

Sincerely,
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Appendix B

Study and consent web page information

Online Study of Long Term Relationships

Have you been married or living with your partner in a heterosexual relationship for at least 2 years?

Are you and your partner between ages 18 and 65?

If so, we would very much appreciate your participation in this study!

About the Study: My name is Nicole Varshney. I am conducting this study as part of my doctoral dissertation and I would greatly appreciate your participation. The purpose of the study is to examine how individuals see themselves and their partners, and how this affects couples' relationships. Participating in the study enters you in a draw for a cash prize.

To participate, you and your partner have to fill out a series of online questionnaires. Note that you are not given any feedback regarding your answers to the questions, so the results of the study won't provide any immediate tangible benefit to you as a participant. However, you may find it interesting to discuss your answers with your partner after completing them.

This study is being conducted under the supervision of Dr. Valerie Whiffen of the School of Psychology at the University of Ottawa in Ottawa, Ontario. Interested? If you are interested in participating in this study, please read over the rest of this page carefully and then press the "continue" button at the bottom.

What You Have To Do To Participate: To participate in this study, we ask you and your partner to fill out two sets of online questionnaires. The first set should take a little over 30 minutes. The second set will be completed 3 months later and will take about half that time (we will contact you by email to remind you). It is important that both you and your partner fill out both sets of questionnaires.

The Cash Draw: Once you complete all parts of the study, you will be entered in a draw for a chance to win \$100. Your partner will also be entered separately in the draw once he or she completes the study. Thus, you get two chances to win.

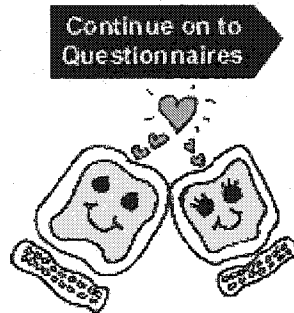
Important: It is important that you complete your questionnaires alone and in private without consulting with your partner. If you wish, you can discuss your answers after both of you have completed them by yourselves. There are no right or wrong answers, and we encourage you to not to think about the questions too long. Usually the first thing you think of is the best answer for you.

The Study Is Voluntary, Anonymous, and Confidential Participation in this study is strictly voluntary. You may choose not to answer any particular questions, and you are free to discontinue at any time. Some of the questions are of a personal nature and ask about how you feel about yourself and your partner. There is a small risk that completing the questionnaires will arouse some negative feelings about yourself or about your relationship. We encourage you to talk to someone you feel close to if you feel upset afterwards. Additionally, we have provided a toll-free number and links to several websites which can provide you with psychological resources in your area in the unlikely event that you should need them. These can be found at the end of the study.

This website is on a secure server. This means that no one besides the researchers will be able to access your information when you send it. All the information you provide will be completely anonymous. You will not be asked to give your name. We ask for your email address to contact you for part 2 of the study and to notify the winner of the draw. Your email address will not be disclosed to anyone other than the researchers conducting the study and will be destroyed once the study is completed. Once we receive your responses, they will be assigned a number code and your email address will be kept separately from the completed questionnaires. You will not be identified in connection with the results of the study. No individual responses from this study will be published. In short, every effort has been made to ensure your privacy.

Questions Or Comments? Should you have any concerns about the ethical conduct of the project, they may be addressed to the Social Sciences and Humanities Research Ethics Board at the University of Ottawa, by contacting the Protocol Officer for Ethics in Research (Lise Frigault: (613) 562-5800 ext. 1787, lfrigaul@uottawa.ca).

Ready? If you are ready to start the questionnaires, please click the icon below.



Thank you for your interest in the Online Study of Long Term Relationships!

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Appendix C

Measures at Time 1 and Time 2

Demographic Information

Age: ____

Gender: Male ____ Female ____

Country of residence: _____

Relationship status: Married ____ Common-law ____

How many years have you and your partner been living together: ____

Number of times married and/or in a cohabiting relationship: ____

Number of Children: ____ (none to 10+)

Educational status:

- ____ Grade school
- ____ High-school
- ____ Some college or university
- ____ College diploma
- ____ Technical diploma
- ____ Bachelor's degree
- ____ Professional degree (i.e., law, medicine)
- ____ Master's degree
- ____ Ph.D.
- ____ Other

Employment status:

- ____ Currently employed
- ____ Unemployed and looking for work
- ____ Unemployed and NOT looking for work
- ____ Student
- ____ Full-time stay-at-home parent
- ____ Retired

Estimated combined annual income as a couple:

- ☐ \$0 - \$14 000
- ☐ \$15 000 - \$29 000
- ☐ \$30 000 - \$45 000
- ☐ \$46 000 - \$59 000
- ☐ \$60 000 - \$74 000
- ☐ \$75 000 +

Personal Style Inventory

Instructions: 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 selecting a number.

	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
1. I tend to keep other people at a distance.	1	2	3	4	5	6
2. I am easily bothered by other people making demands of me.	1	2	3	4	5	6
3. I am very sensitive to criticism by others.	1	2	3	4	5	6
4. I worry a lot about hurting or offending other people.	1	2	3	4	5	6
5. I try to please other people too much.	1	2	3	4	5	6
6. I don't like people to invade my privacy.	1	2	3	4	5	6
7. It is hard for me to take instructions from people who have authority over me.	1	2	3	4	5	6
8. It is very hard for me to get over the feeling of loss when a relationship has ended.	1	2	3	4	5	6
9. It is very important to me to be liked or admired by others.	1	2	3	4	5	6
10. I am too apologetic to other people.	1	2	3	4	5	6
11. It is hard for me to open up and talk about my feelings and other personal things.	1	2	3	4	5	6
12. I am very concerned with how people react to me.	1	2	3	4	5	6

13. I get very uncomfortable when I'm not sure whether or not someone likes me.	1	2	3	4	5	6
14. It is hard for me to say "no" to other people's requests.	1	2	3	4	5	6
15. I resent it when people try to direct my behavior or activities.	1	2	3	4	5	6
16. I become upset when something happens to me and there's nobody around to talk to.	1	2	3	4	5	6
17. Personal questions from others usually feel like an invasion of my privacy.	1	2	3	4	5	6
18. I am very upset when other people or circumstances interfere with my plans.	1	2	3	4	5	6
19. I often let people take advantage of me.	1	2	3	4	5	6
20. I rarely trust the advice of others when making a big decision.	1	2	3	4	5	6
21. I become upset more than most people I know when limits are placed on my personal independence and freedom.	1	2	3	4	5	6
22. I judge myself based on how I think others feel about me.	1	2	3	4	5	6
23. I become upset when others try to influence my thinking on a problem.	1	2	3	4	5	6
24. I feel controlled when others have a say in my plans.	1	2	3	4	5	6

Depressive Interpersonal Relationship Inventory–Reassurance-Seeking (DIRI-RS)

Instructions: Please answer each of the following questions. Some of the questions are of a personal nature. There are no right or wrong answers to the questions. Please answer each question openly and honestly. Read each question carefully before responding.

1. Do you find yourself often asking your partner how she/he truly feels about you?

A	B	C	D	E	F	G
Not at all						Extremely often

2. Do you frequently seek reassurance from your partner as to whether he/she really cares about you?

A	B	C	D	E	F	G
Not at all						Extremely often

3. Does your partner sometimes become irritated with you for seeking reassurance from her/him about whether she/he really cares about you?

A	B	C	D	E	F	G
Not at all						Extremely often

4. Does your partner sometimes get “fed up” with you for seeking reassurance from them about whether he/she really cares about you?

A	B	C	D	E	F	G
Not at all						Extremely often

Rosenberg Partner-Esteem Questionnaire

Instructions: Please rate the following questions based on your perceptions of your partner.

	Strongly agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
1. On the whole, am satisfied with my partner.	1	2	3	4	5
2. At times I think my partner is no good at all.	1	2	3	4	5
3. I feel that my partner has a number of good qualities.	1	2	3	4	5
4. My partner is able to do things as well as most other people.	1	2	3	4	5
5. I feel my partner does not have much to be proud of.	1	2	3	4	5
6. My partner is useless at times.	1	2	3	4	5
7. I see my partner as a person of worth and value.	1	2	3	4	5
8. I wish I could have more respect for my partner.	1	2	3	4	5
9. All in all, I am inclined to feel my partner is a failure.	1	2	3	4	5
10. My partner takes a positive attitude.	1	2	3	4	5

Feedback Seeking Questionnaire

Instructions: We are interested in finding out what you would want to ask your partner in order to learn more about yourself. Please choose, from each of the following five lists of open-ended questions, the two (2) questions which you would most like to have your partner answer about you. Please read over the entire list in each area before you decide on your questions. Remember, you are choosing the 2 questions you would like to have your partner answer about you.

AREA I (Social)

1.	What is some evidence you have seen that your partner has good social skills?
2.	What is some evidence you have seen that your partner doesn't have very good social skills?
3.	What about your partner makes you think she/he would be confident in social situations?
4.	What about your partner makes you think she/he doesn't have much social confidence?
5.	In terms of social competence, what is your partner's best asset?
6.	In terms of social competence, what is your partner's worst asset?

Please enter the numbers of the two questions from the above section which you would want your partner to answer about you.

The first question I would like to have my partner answer about me is number: ____

The second question I would like to have my partner answer about me is number: ____

AREA II (Intellectual)

1. What are some signs you have seen that your partner is above average in overall intellectual ability?
2. What are some signs you have seen that your partner is below average in overall intellectual ability?
3. What about your partner makes you think s/he will have academic problems at school?
4. What about your partner makes you think she/he will do well at school academically?
5. What academic subjects would you expect your partner to be especially good at?
6. What academic subjects would you expect to prove difficult for your partner? Why?

Please enter the numbers of the two questions from the above section which you would want your partner to answer about you.

The first question I would like to have my partner answer about me is number: ____

The second question I would like to have my partner answer about me is number: ____

AREA III (Artistic/Musical)

1. What about your partner makes you think he or she would be a poor artist or musician?
2. What about your partner makes you think he or she is musically or artistically talented?
3. What is your partner's greatest artistic or musical talent?
4. Why is your partner unlikely to do well at creative activities?
5. What about your partner makes you think she/he is very imaginative?
6. In the area of art or music, what is your partner's biggest limitation?

Please enter the numbers of the two questions from the above section which you would want your partner to answer about you.

The first question I would like to have my partner answer about me is number: ____

The second question I would like to have my partner answer about me is number: ____

AREA IV (Physical Appearance)

1.	Why do you think people of the opposite sex would find your partner attractive?
2.	Why do you think people of the opposite sex would find your partner unattractive?
3.	What do you see as your partner's least physically attractive features?
4.	What do you see as your partner's most physically attractive features?
5.	Why should your partner feel confident of his/her appearance?
6.	Why might your partner have little confidence in his/her appearance?

Please enter the numbers of the two questions from the above section which you would want your partner to answer about you.

The first question I would like to have my partner answer about me is number: ____

The second question I would like to have my partner answer about me is number: ____

AREA V (sports)

1.	What are some sports you would expect your partner to be especially good at? Why?
2.	What are some sports you would expect your partner to have problems with? Why?
3.	What about your partner allows him/her to be a good athlete?
4.	What about your partner prevents him/her from becoming a good athlete?
5.	What is your partner's greatest natural athletic talent?
6.	What natural athletic ability does your partner possess least?

Please enter the numbers of the two questions from the above section which you would want your partner to answer about you.

The first question I would like to have my partner answer about me is number: ____

The second question I would like to have my partner answer about me is number: ____

CES-D Scale, Revised

Instructions: Below is a list of the ways you might have felt or behaved. Please tell me how often you have felt this way during the past week.

During the past week...	Rarely or None of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a Moderate amount of time	Most or all of the time (5-7 days)
1. I was bothered by things that usually don't bother me.	1	2	3	4
2. I felt that I could not shake off the blues even with help from my family.	1	2	3	4
3. I had trouble keeping my mind on what I was doing.	1	2	3	4
4. I felt depressed.	1	2	3	4
5. I felt that everything I did was an effort.	1	2	3	4
6. My sleep was restless.	1	2	3	4
7. I was happy.	1	2	3	4
8. I enjoyed life.	1	2	3	4
9. I felt sad.	1	2	3	4

Appendix D

Thank you web page

Finished!

Thank you for completing the questionnaires. We will contact you in 3 months to complete part 2 of the study, which should take 15 minutes to complete.

Remember it is important for your partner to complete the questionnaires also, if he or she hasn't done so already. You can click [here](#) to go to the beginning of the study. Remember to give your password to them! After completing questionnaires, both you and your partner will be entered separately in a draw for \$100!

Please note that anyone can see your answers to the questionnaires by clicking on the back button of the browser you are using now. So you may want to bookmark this page and close the browser first if you are worried about anyone seeing your answers. Once you close the browser, no one can see your answers.

If you are experiencing any negative feelings as a result of completing these questionnaires, please click [here](#) for some links to psychological resources.

Obtaining Psychological Resources

If you experience negative feelings as a result of completing these questionnaires, we encourage you to speak to someone close to you. If the feelings are particularly strong, you may wish to speak to a psychologist or psychiatrist. If you do not know of any in your area, and you live in the United States or Canada, you may call American Psychological Association referral service at: 1 800-964-2000. There you will receive the assistance of an operator who can locate and connect you with the referral system in your area.

You may also find useful information at the following websites:

[Canadian Mental Health Association](#)

[American Psychological Association](#)

[Canadian Psychological Association](#)

[Ontario Psychological Association](#)

If you live outside North America or are having trouble obtaining help for any other reason, please feel free to contact us and we will try to assist you in finding help in your area.