2002

Neediness and connectedness: Mediators of outcome in cognitive therapy or pharmacotherapy for depression?

Nicola Elizabeth. Fitzgerald

University of Windsor

Follow this and additional works at: https://scholar.uwindsor.ca/etd

Recommended Citation

Fitzgerald, Nicola Elizabeth., "Neediness and connectedness: Mediators of outcome in cognitive therapy or pharmacotherapy for depression?" (2002). Electronic Theses and Dissertations. 2821.
https://scholar.uwindsor.ca/etd/2821

This online database contains the full-text of PhD dissertations and Masters’ theses of University of Windsor students from 1954 forward. These documents are made available for personal study and research purposes only, in accordance with the Canadian Copyright Act and the Creative Commons license—CC BY-NC-ND (Attribution, Non-Commercial, No Derivative Works). Under this license, works must always be attributed to the copyright holder (original author), cannot be used for any commercial purposes, and may not be altered. Any other use would require the permission of the copyright holder. Students may inquire about withdrawing their dissertation and/or thesis from this database. For additional inquiries, please contact the repository administrator via email (scholarship@uwindsor.ca) or by telephone at 519-253-3000ext. 3208.
INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps.
Neediness and Connectedness: 
Mediators of Outcome in Cognitive Therapy or Pharmacotherapy for Depression?

By

Nicola E. Fitzgerald

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

Windsor, Ontario, Canada

2002

© Nicola E. Fitzgerald
The author has granted a non-exclusive licence allowing the National Library of Canada to reproduce, loan, distribute or sell copies of this thesis in microform, paper or electronic formats.

The author retains ownership of the copyright in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.

L’auteur a accordé une licence non exclusive permettant à la Bibliothèque nationale du Canada de reproduire, prêter, distribuer ou vendre des copies de cette thèse sous la forme de microfiche/film, de reproduction sur papier ou sur format électronique.

L’auteur conserve la propriété du droit d’auteur qui protège cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

0-612-75828-1
ABSTRACT

The purpose of this study was threefold: examine the main effects of baseline DEQ Neediness and Connectedness (Rude & Burnham, 1995; Blatt et al., 1995) on outcome of treatment for unipolar depression; examine the mediating effects on outcome of change during treatment in Neediness and Connectedness; investigate whether these personality constructs (Neediness and Connectedness) correlate with specific clusters of depression symptoms. Archival data were used consisting of a sample of outpatients diagnosed with unipolar depression who received either Cognitive Therapy (CT) (n = 51) or Pharmacotherapy (PT) (n = 58). In the CT group, high baseline Neediness was associated with poor treatment outcome, while change in Connectedness was associated with positive treatment response. Overall, Connectedness was correlated with a theoretical Dependency Symptom Composite, while Neediness was significantly correlated with a theoretical Self-Criticism Symptom Composite.
ACKNOWLEDGEMENTS

I would like to thank Dr. Stephen Hibbard and Dr. Michael Bagby, my thesis supervisors, for all of their guidance, insight, expertise, and encouragement. I would also like to thank Dr. Barry Taub and Dr. Linda McKay for their support and contribution.

In addition, I would like to thank Jason Bacchiochi for his statistical and editing assistance, as well as Andrew Ryder for his help editing.

Lastly, I would like to thank friends and family for their love, patience, and faith in me.
# TABLE OF CONTENTS

**ABSTRACT** ........................................................................................................ iii

**ACKNOWLEDGEMENTS** ....................................................................................... iv

**LIST OF TABLES** ............................................................................................... v

**LIST OF FIGURES** ........................................................................................... vi

**INTRODUCTION**
Overview of Present Study ................................................................................... 1
Personality Vulnerability and Major Depression ....................................................... 2
  Development of Depressive Personality Styles ....................................................... 6
  The Expression of Depression According to Personality Style ............................ 8
  Development of the Depressive Experiences Questionnaire ................................. 9
Empirical Support of DEQ Subtypes ........................................................................ 10
  State/Trait Distinction ......................................................................................... 11
  Event Congruency ............................................................................................... 12
  Personality Characteristics .................................................................................. 14
Personality and Treatment Outcome ........................................................................ 17
  Effect of Baseline Personality on Treatment Outcome ....................................... 18
  Effect of Treatment Modality on Personality ...................................................... 19
  Relation of Change in Personality to Treatment Outcome .................................. 20
Subfactors within Dependency ................................................................................. 23
  Development of Subscales .................................................................................. 23
  Empirical Support for Subfactors ....................................................................... 24
Possible Connection between Dependency Subfactors and Treatment Outcome .... 28
Personality Styles and Symptom Specificity ............................................................ 30
Summary of Relevant Research and Rationale for Proposed Study ......................... 35
Hypotheses ............................................................................................................. 36

**METHOD**
Participants .......................................................................................................... 37
Measures ............................................................................................................... 38
RESULTS

Overview of Data Analyses.........................................................41
Demographic Variables..........................................................41
Neediness, Connectedness, and Depression Severity, Pre-Treatment........42
Neediness, Connectedness and Depression Severity Change over
Treatment Time..........................................................................46
Correlations between Change in Neediness and Connectedness and Change in
Depression Severity.................................................................47
Main Effects of Baseline Personality Constructs on Treatment Outcome......49
Mediating Effects of Neediness and Connectedness............................54
Neediness, Connectedness, and Symptom Specificity..........................59

DISCUSSION.............................................................................63
Main Effects of Neediness and Connectedness on Treatment Outcome........64
Mediating Effects of Neediness and Connectedness on Treatment Outcome....70
Symptom Specificity of Neediness and Connectedness............................75
Limitations................................................................................79
Future Directions.......................................................................80

REFERENCES ..............................................................................81

APPENDICES

A Depressive Experiences Questionnaire............................................94
B Beck Depression Inventory..........................................................98
C Hamilton Rating Scale for Depression...........................................101
D Consent Form............................................................................109

VITA AUCTORIS.......................................................................110
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Summary of Terms to Define Personality Styles</td>
<td>5</td>
</tr>
<tr>
<td>2.</td>
<td>Descriptive Statistics of Demographic and Clinical Variables by Clinic</td>
<td>43</td>
</tr>
<tr>
<td>3.</td>
<td>Pre- and Post-treatment Descriptive Data by Clinic</td>
<td>44</td>
</tr>
<tr>
<td>4.</td>
<td>Zero – order Correlations between Baseline Measures by Treatment Group – CT</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>( (n = 51) ) and PT ( (n = 53) )</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Correlations between Change Scores of Measures by Treatment Group – CT (n=51)</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>and PT ( (n = 53) )</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Logistic Regression Moderator Analyses Predicting Treatment Response (n=104)</td>
<td>51</td>
</tr>
<tr>
<td>7.</td>
<td>Summary of Mediational Regression Analyses for Neediness and Connectedness (n=104)</td>
<td>56</td>
</tr>
<tr>
<td>8.</td>
<td>Correlations of Personality Constructs with Dependency Symptoms and Composite</td>
<td>60</td>
</tr>
<tr>
<td>9.</td>
<td>Correlations of Personality Constructs with Self-Criticism Symptoms and</td>
<td>61</td>
</tr>
<tr>
<td></td>
<td>Composite</td>
<td></td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Pre- and Post-Treatment Neediness by Clinic and Responder Status</td>
<td>52</td>
</tr>
<tr>
<td>2. Pre- and Post-Treatment Connectedness by Clinic and Responder Status</td>
<td>53</td>
</tr>
</tbody>
</table>
Neediness and Connectedness: Mediators of Outcome in Cognitive Therapy or Pharmacotherapy for Depression?

Overview of Present Study

According to one estimate, the lifetime and 12-month prevalence rates of a major depressive episode (MDE) are 17.1% (SE = 1.7) and 10.3% (SE = 0.6), respectively (Kessler, McGonagle, Zhao, Nelson, Hughes, Eshleman, Wittchen, & Kendler, 1994). At its worst, depression is an incapacitating illness, rendering its sufferers utterly unable to perform the simplest of everyday tasks and costing society hundreds of millions of dollars in lost productivity (Greenberg, Stiglin, Finkelstein, & Berndt, 1993). Despite the advances in the treatment of depression, such as the advent of the Selective Serotonin Reuptake Inhibitors (SSRI’s), the Tricyclic Antidepressants (TCA’s), and various other forms of therapy, still nearly 36% of those who recovered from a depressive episode will suffer another within two years (Evans, Hollon, DeRubeis, Piascik, Grove, Garvey, & Tuason, 1992). Even more sobering is the finding that after three episodes, individuals have a 90% probability of experiencing a fourth episode (Depression Guideline Panel, 1993). These results reinforce the continued need for research in the area of depression to further the understanding of the nature and risk factors of this debilitating illness.

One area of interest, specifically with respect to vulnerability to depression, is personality. Two personality styles have been hypothesized to confer increased vulnerability to developing depression: one characterized by an interpersonal orientation (Dependency), the other focused on achievement-oriented issues (Self-Criticism). These personality styles may not only play a role in increasing ones’ chances of developing a depression, they may also influence treatment response, though only one study to date has specifically examined this question with the aforementioned constructs (Rector, Bagby,
Segal, Joffe, & Levitt, 2000). Interpretation of this study was limited, however, by the fact that the full Dependency factor was used in the analyses when recent research has suggested that Dependency is composed of two subfactors: one pathological, Neediness, and one related to psychological well-being, Connectedness (Rude & Burnham, 1995; Blatt, Zohar, Quinlan, Zuroff, & Mongrain, 1995). By examining Dependency as a unidimensional factor, significant findings in one subfactor may have ‘washed out’ effects present in the other.

This study will thus examine the data to determine whether baseline measures of Dependency’s two proposed subfactors, Neediness and Connectedness, predict treatment outcome, as well as whether changes in these personality styles mediate treatment response to Cognitive Therapy (CT) and Pharmacotherapy (PT) in the treatment of depressed patients. The question of whether specific sets of depressive symptoms are differentially associated with these personality traits will also be examined.

**Personality Vulnerability and Major Depression**

One of the most daunting questions in psychology is why some people develop psychopathology and others do not, even when they are faced with seemingly similar environmental stressors. The existence of an underlying vulnerability that makes certain individuals more prone to developing a depressive episode seems the most promising avenue to take in search of these answers. Types of personality have been posited to be a vulnerability factor to depression because personality has been defined as an enduring and unique pattern of how people think, feel, and relate to themselves and to the world; it is thought to crystallize by early adulthood; and it is relatively stable across situations and lifespan. A theory of personality vulnerability might also account for why more people treated with antidepressant medication relapse, compared to those treated with
psychotherapy, such as Cognitive Therapy, which specifically targets depressogenic thoughts (Simons, Murphy, Levine, & Wetzel, 1986; Evans et al., 1992).

Dependency (anaclitic) and Self-Criticism (introjective) are two personality styles that were originally hypothesized by Blatt (1974) to confer vulnerability to depression. Blatt (1974) described those with a Dependent style as being more interpersonally-oriented compared to those who are high in Self-Criticism, who are more achievement-oriented. People with an interpersonally-oriented style, or who are high in Dependency, are hypothesized to have a tendency to "seek fusion, harmony, integration, and synthesis" in their interpersonal relationships (Blatt, 1990, p. 305), and accordingly, place greater emphasis on "experiences of feeling, affect, and personal reactions" (Blatt, 1990, p. 305). These are people who are thought to be very aware of and influenced by their environments. While the more interpersonally-oriented style focuses on fusion with others, the second constellation, Self-criticism, is more individualistic, with an emphasis on defining oneself. Individuals with this orientation are concerned with goals of self-assertion, control, autonomy, power, and prestige, and are more driven by internal, rather external forces (Blatt, 1990).

These two themes of dependency and self-definition are what Bakan (1966) described as the “two fundamental modalities in the existence of living forms” (p.14-15) and it is an “oscillation between necessary connectedness and inevitable separation,” that results in optimal psychological health, according to Shor and Sanville (1978). For example, there are times in life when it is more appropriate to focus on interpersonal relationships than on one’s own sense of achievement, such as when an adult plays with a child or misses a conference to help an ailing relative. The converse is also true; there will be times when it is necessary to miss a social gathering to study for a major examination. These examples
imply that a certain degree of flexibility is required to continually accommodate these conflicting pursuits. When individuals lack this flexibility, and essentially put “all of their eggs into one basket” (Linville, 1985), they may unknowingly increase their probability of having a particular depressive experience, particularly when they encounter a set-back in their respective area of focus (Blatt & Schichman, 1983; Beck, 1983).

Researchers from other theoretical orientations have proposed depressive subtypes with associated personality styles that are similar, though not identical, to those proposed by Blatt. See Table 1 for a summary of terms used to describe these two orientations. Beck (1983), from a cognitive-behavioural perspective, identified two prototypic depressive themes: sociotropy and autonomy. According to this view, a vulnerability to depression may result when individuals adopt a set of negative attributes or assumptions about themselves (Beck, Rush, Shaw, & Emery, 1979). While these attitudes may lie dormant, they may become activated by conditions similar to those in which they originally developed (Beck et al., 1979). Like Dependency, those high in sociotropy tend to be concerned with ascertaining the approval and respect of others, as well as being heavily invested in securing a “positive interchange with other people” (Beck, 1983, p. 273). Sociotropic depressions are characterized by seeking help, support and reassurance, as well as by fears concerning loss of gratification. Associated symptoms include crying and difficulty making decisions. Themes of deprivation generally exist as a result of perceived loss or rejection in interpersonal relationships (Robins, Block, & Peselow, 1989).

Conversely, those high in autonomy are described as being concerned with issues of “independence, mobility, personal rights, and the attainment of meaningful goals” (Beck, 1983, p.272). Depressions experienced by these individuals tend to involve withdrawal from
Table 1.

**Summary of Terms to Define Personality Styles**

<table>
<thead>
<tr>
<th>Scale</th>
<th>Interpersonally-Oriented</th>
<th>Achievement-Oriented</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEQ</td>
<td>Dependency</td>
<td>Self-Criticism</td>
</tr>
<tr>
<td></td>
<td>(Anaclitic)</td>
<td>(Introjective)</td>
</tr>
<tr>
<td>SAS</td>
<td>Sociotropy</td>
<td>Autonomy</td>
</tr>
<tr>
<td>N/A</td>
<td>Dominant Other</td>
<td>Dominant Goal</td>
</tr>
<tr>
<td>DAS</td>
<td>Need for Approval</td>
<td>Perfectionism</td>
</tr>
</tbody>
</table>

*Note: DEQ: Depressive Experiences Questionnaire; SAS: Sociotropy/Autonomy Scale; DAS: Dysfunctional Attitudes Scale.*
others and anhedonia with themes of defeat. Perceived failure or a loss of control is believed to precipitate an autonomous depression (Blatt and Zuroff, 1992).

Taking an interpersonal approach, Arieti and Bemporad (1980) described a dominant-other and dominant-goal type of depression. Dominant-other depressions are hypothesized to be a consequence of a sudden withdrawal of love and approval, typically from a parent or close other that results in clingy, needy behaviour. Dominant-goal depressions are believed to occur when a goal is not achieved and as with the Autonomous and Self-Criticism personality styles, results in social withdrawal, arrogance, and self-involvement.

**Development of Depressive Personality Styles.** Development of the Dependent and Self-Critical styles is thought to result from an exaggeration of one of the two normal developmental tasks: “establishing the capacity to form stable, enduring, and mutually satisfying relationships” or “achieving a differentiated, consolidated, stable, and relatively positive identity,” due to a disruption in the development of object relations (Blatt & Shichman, 1983, p.193). In normal development, these tasks should occur in a mutually facilitating fashion where, for example, through interpersonal relationships, one may develop a new level of self-definition, which in turn, may lead to new, more mature ways of relating to others. Disruptions in the early stages of object relations, a time when infants slowly begin to differentiate themselves from the external world and create mental representations of the world, may offset this delicate process, resulting in an exaggerated pursuit of one line, to the neglect of the other.

The anaclitic line, which Blatt later named Dependency, is proposed to stem from an early disruption in the basic relationship with the primary object, generally the mother, during the sensorimotor phase (Blatt, 1974). A principal goal of this developmental stage is
to differentiate the self from the external world, and the primary object from its ability to supply gratification and then to ultimately internalize the need-gratifying object. In other words, the child's goal at this stage is to distinguish the mother from her provision of love and to internalize that affection so that the mother need not be present for the child to feel cared for and valued. Interference of this process, however, may occur if the child experiences the primary object as depriving, rejecting, inconsistent, or unpredictable. In order to compensate for the resulting fear of abandonment and loss of the object's love, the child attempts to stay in constant contact with the mother and, eventually, significant other. Due to a preoccupation of maintaining the object's love, there is a relative neglect in developing a stable and essentially positive sense of self, independent of one's interpersonal relationships. Strategies used to quell these fears of abandonment are similar to those used by individuals who exhibit an anxious attachment style, namely, proximity-seeking and reassurance-seeking (Zuroff & Fitzpatrick, 1995). Furthermore, due to an excessive fear of rejection and loss of the love object, anaclitic individuals are often said to have difficulty expressing anger (Zuroff, Moskowitz, Wielgus, Powers & Franko, 1983) because according to Blatt (1974), lashing out at a loved one would be unthinkable because it may jeopardize the relationship. Primary defenses used by anaclitically prone individuals thus involve more passive strategies, such as denial and repression (Blatt, 1990).

In contrast, the more individually-oriented style is hypothesized to increase individuals' vulnerability to developing an introjective depression, characterized by self-criticism, feelings of unworthiness, inferiority, and an incessant drive for perfection. Since the experience of guilt, a hallmark of the Self-Critical style, requires at least a rudimentary sense of self separate from the world, the disruption in development is believed to occur at a more advanced stage than the anaclitically-predisposing disruption. When a
disruption in this stage (perceptual object representation; Blatt, 1974) occurs, the object is no longer needed to provide satisfaction, but rather approval and acceptance (Blatt, 1974). In terms of attachment style, individuals who are highly Self-Critical have been found to exhibit fearful-avoidant strategies, such as avoidance of warm relationships (Zuroff & Fitzpatrick, 1995).

**The Expression of Depression According to Personality Style.** As might be expected, the symptomatic presentation of depressed Dependent and Self-Critical individuals is thought to be quite distinct. Blatt (1974) described an anaclitic depression as being more infantile or oral in nature, where the main issues revolve around feelings or fears of being abandoned or unloved. Accordingly, people with an anaclitic depression experience a constant drive to feel cared for, protected, and when these needs are not met, feelings of helplessness and deprivation may result. In contrast, introjective depressions typically involve feelings of being unworthy of love, guilt, and feeling as though they have not lived up to their own standards or expectations. Here, there is a constant fear of disapproval and punishment resulting in ardent attempts to overachieve in order to obtain recognition and approval. Even when goals are realized, feelings of success are generally short-lived.

Although Blatt’s formulations were not primarily based on symptom presentation, he hypothesized that each depressive subtype had a corresponding constellation of symptoms. Specifically, he proposed that anaclitic depressions involve feelings of dependency, oral cravings, as well as somatic concerns, whereas an individual presenting with an introjective depression is likely to present with anhedonia and social withdrawal, as well as intense feelings of guilt and worthlessness (Blatt, 1974). This description of depressive types according to dominant themes was a definite improvement over previous attempts to make sense of the heterogeneous nature of depression by creating depressive subtypes according
to symptom clusters. Such attempts lead to distinctions such as endogenous/exogenous and melancholic/atypical, which met with little success (Blatt, D’Afflitti, & Quinlan, 1976).

**Development of the Depressive Experiences Questionnaire.** In order to identify individuals with a Dependent or Self-Critical style and to investigate whether clinical depression was a phenomenon distinct from normal affect or one that occurs along a continuum with normal affect, Blatt and colleagues developed the Depressive Experiences Questionnaire (DEQ; Blatt et al., 1976). The DEQ is based on behaviours, cognitions, and beliefs frequently experienced by depressed individuals instead of actual depressive symptoms and began as a list of 150 statements of experiences that were frequently reported by depressed individuals. The list was rationally reduced to 66 items by a panel of judges and administered to a large sample of Yale undergraduate students. A principal components factor analysis using a varimax rotation revealed the presence of three factors: Dependency, Self-Criticism, and Self-Efficacy, two of which corresponded to Blatt’s theoretical constructs. The first factor, Dependency, appeared to reflect the interpersonal themes associated with an anaclitic orientation, such as concerns regarding abandonment, feelings of loneliness and helplessness, and wanting to be close to others. The second factor, dubbed Self-Criticism, appeared consistent with the introjective line, involving feelings of guilt, insecurity, and an inability to meet self-imposed expectations and standards. Self-Efficacy, the third factor, did not appear related to either depressive subtype, and reflected feelings of confidence and assurance in one’s abilities.

In this original sample, Self-Criticism, but not Dependency, was highly correlated with measures of depression severity (e.g., Weissman-Ricks and semantic differential); though, the authors argued that the measures of depression severity used, contained more items focusing on loss of self-esteem than Dependency-related issues. Subsequent studies
have reported correlations between DEQ subtypes and measures of depression (Fehon, Grilo, & Martino, 2000; Zuroff, Igreja, & Mongrain, 1990), with Self-Criticism being consistently correlated more highly with measures of depression severity than Dependency (Klein, Harding, Taylor, & Dickstein, 1988; Blatt, et al., 1976; Blatt, Quinlan, Chevron, McDonald, & Zuroff, 1982). In fact, the DEQ Self-Criticism factor has “consistently yielded some of the largest effect sizes with depression in the literature” (Nietzel & Harris, 1990, p. 291).

Similar measures have also been developed to identify Beck’s depressive subtypes, such as the Sociotropy-Autonomy Scale (SAS; Clark & Beck, 1991), the Dysfunctional Attitudes Scale (DAS; Weissman & Beck, 1978), as well as the Personality Symptom Inventory (PSI; Robins, Ladd, Welkowitz, Blaney, Diaz, & Kutcher, 1994). Various studies have investigated the degree of similarity among the constructs measured by these scales, and have found greater convergence among the interpersonal factors than between the autonomy/self-critical domain (Blaney & Kutcher, 1991; Rude & Burnham, 1993).

**Empirical Support for DEQ Subtypes**

The creation of a measure to identify individuals with a Dependent or Self-Critical style was a crucial development because it allowed for the empirical testing of Blatt’s theoretical constructs. As a result, it has been possible to test whether the constructs really are vulnerability factors for depression or a consequence of depression, by investigating the state/trait distinction. Researchers have also been able to assess whether events corresponding to the personality styles are more apt to trigger a depression compared to ‘non-matched’ events, in what has been termed the event-congruency hypothesis. Lastly, the ability to distinguish between the Dependent and Self-Critical styles has enabled researchers to investigate if the styles differ in other areas of life such as choice of romantic
partner and interpersonal style.

**State/Trait Distinction.** A crucial requirement for a theory of personality vulnerability is the constructs’ relative stability across time, most importantly, before, during, and after a depressive episode. If a construct is only elevated during an episode and then decreases upon its remission, it could be argued that the construct is state dependent, and thus not a vulnerability factor. While some may argue that a true model of vulnerability should be stable, regardless of depressive state, a state-trait vulnerability model has been proposed to be most consistent with the models proposed by Blatt and Beck (Zuroff, Blatt, Sanislow, Bondi, & Pilkonis, 1999). A state-trait model proposes that while there are stable individual differences in the availability of depressogenic cognitive structures, vacillating differences in their accessibility will result in relative stability and state-dependent effects. On this basis, one would expect the Dependency and Self-Criticism scores of depressed and remitted patients to be elevated in comparison to those who have never been depressed, a finding that has been supported in the literature.

Using a cross sectional design and the PSI-II to identify sociotropy and autonomy, Fairbrother and Moretti (1998) compared the sociotropy and autonomy scores of 26 patients who met criteria for Major Depression, 20 patients who remitted while on a 10 week wait list, and 20 control participants. Consistent with a state/trait model, both depressed and remitted patients had significantly higher levels of sociotropy than the control group, with the difference between the patient and remitted group approaching significance ($p < .06$). With respect to autonomy, the depressed patients had significantly higher autonomy scores than the control group and there was a trend for the remitted group to have higher autonomy scores than the control group. There was not a significant difference between the autonomy scores of the patient and remitted group. Similar findings using the PSI-II were reported by
Solomon, Haaga, Brody, Kirk, and Friedman (1998) in a study that compared sociotropy and autonomy scores of patients who had recovered from a major depressive episode with those who had never been depressed. Again, patient scores of sociotropy and autonomy were higher than those of the recovered group of patients. Using the DEQ, Franche and Dobson (1992) reported findings consistent with the proposition that the anaclitic and introjective lines reflect an underlying vulnerability factor and are not just the product of mood-congruent effects in a study that compared depression severity and Dependency and Self-Criticism scores of twenty depressed, remitted, and normal patients. Although the remitted and control subjects had BDI scores that were comparable and significantly lower than those of the depressed patients, depressed and remitted participants had significantly higher Dependency and Self-Criticism scores compared to the control subjects, suggesting that these constructs are stable, trait vulnerability factors. A similar finding was reported by Bagby, Schuller, Parker, Levitt, Joffe, and Shafir (1994). Together, these studies that have reported elevated levels of Dependency and Self-Criticism in depressed and remitted patients compared to nondepressed samples, support the hypothesis that these personality constructs are trait-like vulnerability factors for depression, rather than a consequence of depression.

**Event Congruency.** Given the different foci of people with a Dependent or Self-Critical personality style, one might expect that they would be particularly vulnerable to developing a depression in response to different triggering events. The event congruency hypothesis (Beck, 1983; Blatt et al., 1982), as it has been coined, suggests that individuals are more likely to become depressed in response to an event that matches their vulnerability. On this basis, it would be predicted that Dependent individuals would be more likely to become depressed following an interpersonal disruption, such as a break-up, whereas people
high in Self-Criticism would be more likely to become depressed in response to an achievement-related life event, such as being fired from a job. Support of these hypotheses, however, has been mixed.

Hammen, Marks, Mayol, and deMayo (1985) reported that participants identified as Dependent displayed a significantly greater association between depression and congruent events than with noncongruent events four months later. Although not as significant, there was a greater association between depression and negative achievement events than with negative interpersonal events for individuals classified as Self-Critical. Rude and Burnham (1993), in a prospective study, examined the event congruency hypothesis using the DEQ, SAS, DAS, as well as a composite Dependency and Achievement scale based on items from each measure in a sample of undergraduate students. At Time 1, or pretreatment, each of the three measures was administered and five to six weeks later, participants completed a Life Events Survey and BDI. Consistent with previously reported findings (Blaney & Kutcher, 1991), there was an interaction between all the Dependency measures except the DAS Need for Approval scale, and congruent life events in predicting depressive symptoms. No such interaction was found for any of the self-critical scales. Bartelstone and Trull (1995) investigated whether an interaction between congruent negative life events in the past 6 months and personality style, measured by the DEQ and SAS, could predict depression symptoms in a sample of undergraduate students. Like Rude and Burnham (1993), they, too, found an interaction between Dependency and the frequency of negative interpersonal events in predicting BDI scores; no significant relation between Dependency and negative achievement events was found. Again, the interaction between Self-criticism and negative achievement events was not predictive of depression severity, although surprisingly, the interaction between DEQ Self-Criticism and frequency of negative
interpersonal events was predictive of BDI scores.

In a lab experiment, Zuroff and Mongrain (1987) had 45 participants classified as Dependent, Self-Critical, or control listen to two taped dialogues classified as either the 'rejection episode,' involving the break-up of a relationship or a 'failure episode,' where a student is not admitted to a graduate program. After listening to these tapes, participants were asked to indicate how they would feel if they had received the news contained in the tapes. Results indicated that those classified as Dependent expressed more anaclitic depression in response to the rejection condition than to the achievement condition. Interestingly, however, the introjective group did not show significantly more introjective depression than the other groups in the failure condition. Although the findings have been mixed, there appears to be a stronger interaction between Dependency and negative interpersonal events than with Self-Criticism and negative achievement events.

**Personality Characteristics.** By defining personality as an enduring and unique pattern of how people think, feel, and relate to themselves and to the world, one might expect differences in not only the personal motives and needs of those characterized as either Dependent or Self-Critical, but also in the environments they select and how people respond to them. Mongrain and Zuroff (1995) were among the first to empirically investigate the motives and needs of Dependent and Self-Critical individuals. In their study, one hundred and fifty-two participants were classified as Dependent, Self-Critical, mixed (scoring in the top 25% of both scales), or control (scoring in lower 25% of both scales) according to the DEQ (Blatt et al., 1976). Participants listed fifteen goals that they generally try to achieve in their everyday lives (it was emphasized that actual goal attainment was not a necessary component for an item to be listed). Answers to the statement, "I typically try to ..." were categorized into one of the six following categories: intimacy, achievement,
affiliation, power, independence, or self-presentation. They reported that those who were high in Dependency listed a significant number of interpersonal personal goals (e.g., affiliation, intimacy) and few achievement strivings (e.g., striving for excellence) or independence goals (e.g., being an individual, separated, autonomous). In contrast, those with a high Self-Criticism score had fewer interpersonal goals and a greater number of self-presentation goals, such as being concerned about making a good impression.

While not specifically proposed to investigate the Self-Critical/Dependent personality styles, Buss (1987) described three ways in which individuals may create or influence their environments: selection, evocation, and manipulation. Selection considers the choices people make regarding which situations they enter into or avoid. One's choice of mate and peers is one type of selection. For example, Zuroff and de Lorimier (1989) found that those high in Dependency and with average levels of Self-Criticism described their ideal boyfriend as being high in intimacy, whereas those who had a high score in Self-Criticism and an average-to-high level of Dependency preferred their ideal boyfriend to be high in need-for-achievement. Furthermore, the significant correlation between participants' descriptions of their actual and ideal partner, suggests that the women in this sample were finding the type of partner they were seeking. These findings provide support for Buss's claim that people play an active role in selecting their environments and that one's DEQ personality style differentiates what environment one chooses.

Buss (1987) also proposed that people might shape their environments by eliciting certain responses from others in their social environments. One study found that women high in Self-Criticism were rated as less likeable after an interaction with either a same or opposite sex partner (Zuroff, Moskowitz, Wielgus, Powers, & Franko, 1983). Similarly, another study found that after a twenty-minute interaction with their partner, women who
had a high score on either Dependency or Self-criticism reported greater negative affect and seemingly, induced negative affect in their partner (Zuroff & Giannopoulous, 1990, as cited in Blatt & Zuroff, 1992).

Finally, Buss (1987) proposed that people may influence their environments by actively manipulating them or using tactics that intentionally alter, shape, exploit, or change their social environment. Santor and Zuroff (1997) examined how threatening or bolstering status and social rank influenced the subsequent behaviour toward a "best friend" and the mood of those defined as either being high in Dependency or Self-Criticism. Results indicated that after outperforming a friend on a task of interpersonal perception, women who were high in Dependency were more likely to adopt their friend's response as superior. These women also tended to praise friends, even those who disagreed with them, and tended to minimize disagreement. This deference to the opinion of a less competent other was interpreted as a strategy to maintain interpersonal relatedness with their friend that may have been threatened by the change in relative status. Interestingly, being outperformed by a friend and thus experiencing a decrease in status resulted in a decrease of mood in both groups, while outperforming a friend and gaining status, increased women's mood, irrespective of personality style. This finding was important in demonstrating that similar events can have similar effects on people regardless of their personality style, but that the difference lies in how people with differing character styles respond to these events.

In a related study, Santor and Zuroff (1998) investigated how individuals differing in Dependency and Self-Criticism may manipulate resources in their environment after learning their status relative to a close friend. As before, pairs of female participants described as 'good friends' individually completed an interpersonal perception task. Participants were then led to believe that they had either outperformed their friend on the
task or were outperformed by their friend, thus creating a status differential. The authors hypothesized that those who were high in Dependency would view their bolstered status as a threat to their relationship with their friend and thus would try to reduce the difference by sharing a common resource (i.e., time spent viewing a video clip about which participants were asked to make ratings). In contrast, the authors posited that those high in Self-Criticism would view being outperformed as a threat to their own self-worth, which would result in a subsequent attempt to restore their sense of self by monopolizing the resource at the expense of their friend. Results, for the most part, supported these hypotheses. Those high in Dependency adopted the responses of their less competent friends, yielded a shared resource and minimized disagreement, whereas those who were Self-critical actively maintained control of the resource, regardless of their status.

**Personality and Treatment Outcome**

Given the issues unique to the Dependent and Self-Critical constructs, it has been proposed that Dependent and Self-Critical individuals should be differentially responsive to certain aspects of the therapeutic process, which could then conceivably mediate and/or moderate response to therapy. Blatt and Maroudas (1992) suggested that interpersonal therapy, with its emphasis on relationships, should be more suitable in addressing the presenting problems of Dependent individuals, while cognitive behavioural therapy, which is more goal-oriented, should be more appropriate in treating Self-Critical individuals. Furthermore, they hypothesized that Dependent individuals would demonstrate an initial positive placebo effect in response to PT due to feeling “cared for and fed” (Blatt & Maroudas, 1992, p.182). In contrast, a negative placebo effect was predicted for Self-Critical individuals on the basis that they would feel unworthy of their physician’s care and concern, in addition to their general sense of hopelessness. Various approaches have been
taken to investigate this question of treatment-specificity. Some have examined how baseline levels of Dependency and Self-Criticism affect treatment outcome, while others have taken the opposite approach and explored how different therapies affect the personality measures. Lastly, and most recently, researchers have begun to investigate how change in the personality styles is associated with treatment outcome.

**Effect of Baseline Personality on Treatment Outcome.** The goal of research focusing on pretreatment levels of functioning is to enable clinicians to customize treatment according to their patients' current level of functioning. Studies that have taken this approach involve assessing various aspects of individuals' social and cognitive functioning, using scores measured at intake to predict depression severity scores upon completion of treatment.

One group investigated 26 independent variables in a sample of 239 depressed patients who were randomly assigned to one of the following treatment conditions: IPT, CBT, imipramine plus clinical management, or placebo plus clinical management (Sotsky, Glass, Shea, Pilkonis, Collins et al., 1991). Among the independent variables were social functioning, as measured by the Social Adjustment Scale, and cognitive functioning, measured by the Dysfunctional Attitude Scale, total score. In this study, low social dysfunction predicted superior response to interpersonal therapy, whereas low cognitive dysfunction predicted more favourable outcome in the CBT plus drug condition. They argued that individuals with strengths in social functioning could use these skills, in addition to those learned in IPT, to alleviate their depression. In a similar vein, they argued that individuals with strengths in the cognitive domain would be able to use those in combination with CBT to help resolve their depressions. In a substantially smaller sample (n = 19), Keller (1983) found that individuals with high pretreatment DAS total scores were
less likely to see a decline in their depression severity over the course of therapy.

One limitation of these studies was that by using the DAS total score, the Dependency and Self-Criticism subscales were collapsed together, making it impossible to know whether high scores on both scales suggested poor prognosis or whether an elevation in one scale was driving the poor outcome. Hardy, Cahill, Shapiro, Rees and Macaskill (2001) attempted to correct this problem by deconstructing the scale into its subfactors in a similar study. They, however, reported findings contradictory to those of Sotsky and colleagues (1991). Specifically, they reported that pretreatment cognitive functioning, as measured by the DAS, was not predictive of treatment outcome in CBT. Thus, according to their findings, neither pretreatment Need for Approval, nor Perfectionism, the DAS versions of Dependency and Self-Criticism, affected treatment response. Methodological issues that could account for these differences include the considerably smaller sample size used by Hardy and colleagues (2001), 24 versus 239 in the study by Sotsky et al., (1991), as well as the fact that the former study was naturalistic while in the latter, participants were randomly assigned to treatment conditions.

Effect of Treatment Modality on Personality. Investigating how treatment with different therapies affects the Dependent and Self-Critical styles is another approach used to test the treatment specificity hypothesis with the purpose that such knowledge would allow clinicians to recommend treatment based on what would be most effective in targeting patients' problem areas. Imber, Pilkonis, Sotsky, Elkin, Watkins, and colleagues (1990) investigated the mode specific effects of three types of treatment for depression (i.e., CBT, IPT, PT) and reported that CBT was most effective in reducing DAS-Need for Approval scores, the socially-oriented scale of the DAS, suggesting that CBT targeted Dependency to a greater extent than Self-Criticism. However, this finding is difficult to interpret because
pretreatment scores were not taken into account, thus it is possible that the Self-Critical participants were more highly Self-Critical than the Dependent participants were dependent, and thus making them more resistant to change. A subsequent analysis investigating whether those who were more impaired on this measure were more likely to show differential effects was insignificant, which may suggest that increased Dependency moderates the relation between treatment and outcome.

**Relation of Change in Personality to Treatment Outcome.** The research examining the effect of the Dependent/Self-Critical personality traits described thus far has been limited because it has only investigated how initial personality factors predict or moderate treatment outcome or how different treatment modalities affect individuals' scores on Dependent/Self-Critical personality traits. It has not examined how change in personality may actually affect treatment response, which is a question of mediation. By definition, mediator variables are those that can account for, or explain why or how an effect occurs, whereas moderator variables influence the degree or direction of a relation between an independent (IV) and dependent variable (DV) (Baron & Kenny, 1986). A variable that is hypothesized to mediate a relation may act as either a cause or an effect, depending on the focus of analysis. In other words, a mediator variable may act as a dependent or independent variable in different equations. To determine whether a variable mediates a relation between two variables, Baron and Kenny (1986) described a regression analytic procedure in which the following conditions must be met; (a) the independent variable should predict the mediator variable (mediator as effect); (b) the independent variable should predict the dependent variable; (c) the mediator variable should predict the dependent variable when entered into the regression equation with the independent variable (mediator variable as cause of dependent variable). If these conditions are met, then in the
final equation the mediator variable should reduce the relationship between the independent variable and the dependent variable. In contrast, a moderator variable always acts as an independent variable. A variable is considered a moderator variable if, when the dependent variable is regressed onto the moderator, the independent variable, and the interaction between the moderator and IV, the interaction term is significant. If this relation is found, the actual nature of the moderation can then be determined by analysing the simple effects of the IV at different levels of the moderator variable.

Moore and Blackburn (1996), using the Sociotropy-Autonomy Scale (SAS; Clark & Beck, 1991), investigated whether cognitive therapy, with its emphasis on addressing dysfunctional schemata, may result in a different degree of change in SAS scores compared to pharmacotherapy. They also examined whether there was a greater decrease in SAS scores in patients who responded fully to treatment. While there was a significant decrease in sociotropy scores of patients who responded to treatment (i.e., BDI < 9 and HRSD < 6), this effect was not unique to those who had been treated with cognitive therapy. Although this finding seems to suggest a state-like component to sociotropy rather than an underlying vulnerability, sociotropy scores of patients were still significantly higher than those of a control group, even though both groups exhibited a similar degree of symptom severity. No effect for autonomy was reported; in fact, the autonomy scores of responders were not significantly different from those of the control group.

Most recently, Rector and colleagues (2000), using the DEQ, examined whether change in Dependency or Self-Criticism mediated or moderated treatment response to either Cognitive Therapy or Pharmacotherapy. Whereas Moore and Blackburn (1996) investigated whether a therapy targeting maladaptive schema could reduce SAS scores, in addition to lowering depressed mood, Rector et al., (2000) examined whether reductions in DEQ scores
causes or is at the very least, associated with an improvement in mood. Rector and colleagues (2000) examined Dependency and Self-criticisms' role as both a moderator and mediator variable.

In this study, it was predicted that Self-Criticism would moderate the relation between treatment type and treatment response, and specifically, that high levels of Self-Criticism would predict negative response to both CT and PT. With respect to a mediational hypothesis, it was predicted that CT would target self-critical thoughts and any decreases in Self-Criticism scores would result in a greater reduction of depressive symptoms. No specific hypotheses were made for Dependency due to Blatt and Maroudas' (1992) argument that individuals high in this trait would preferentially respond to a treatment emphasizing interpersonal relationships.

Rector and colleagues' (2000) hypotheses were supported: pretreatment Self-Criticism scores moderated response in the CT condition only; patients with high Self-Criticism scores benefited less from CT than other patients. In terms of mediating effects, a reduction in Self-Criticism predicted successful treatment response in the CT condition only, suggesting that the change in Self-Criticism scores was not solely the byproduct of symptom reduction, which could have been argued had there been a similar decrease in patients receiving pharmacotherapy. Although there was a reduction in the Dependency scores of individuals treated with CT, the difference was not associated with significantly different treatment outcome.

The null findings reported for Dependency were surprising since cognitive therapy was originally designed to target maladaptive cognitions, regardless of the nature of the thoughts (i.e., interpersonal or achievement-oriented). On this basis, one may have expected a mediational effect with Dependency, based on the assumption that negative interpersonal
cognitions would also be targeted and reduced during the course of CT. A limitation of the Rector et al., (2000) study that could account for the null findings reported for Dependency was the use of Dependency as a unitary factor when recent research has suggested that this factor confounds a healthy and pathological form. It is possible that any significant findings in one of the subfactors were overshadowed or “washed-out” by the second, as a result of treating Dependency as unidimensional.

Subfactors within Dependency

Development of Subscales. Dependency’s relatively low relation with other measures of depression (Klein et al., 1988; Blatt, et al., 1976; Blatt, et al., 1982) is an issue that has plagued the DEQ since its inception. This has lead some to review the item content of the factor, questioning whether it conflates two subfactors.

Rude and Burnham (1995) were among the first to empirically test this hypothesis, questioning whether Western society, with its emphasis on individuation, was not unnecessarily pathologizing those who valued maintaining interpersonal relationships, stereotypically women. Arguing that mature relatedness was a key component to psychological well-being, they investigated whether traditional measures of Dependency, particularly the DEQ, which had been shown to have considerable sex differences, were inadvertently capturing both a healthy and pathological dependency style. In their study, using a college sample, twenty-nine DEQ items underwent principal factor analysis, which revealed the presence of two factors. Their Connectedness factor, corresponding to a healthier form of relatedness, was not significantly associated with BDI scores. This factor reflected a concern about interpersonal relationships and the effects of one’s actions on others and as predicted, women scored significantly higher on this dimension than men. The second factor, dubbed Neediness, seemed to correspond to what has been traditionally
labeled Dependency, a more maladaptive form where there is an anxious concern about being left alone and criticized; this factor was significantly correlated with depression severity, though not to sex. Agreement among a panel of nine independent raters asked to identify items consistent with a description of each factor was above a Cronbach’s alpha of .80 for each factor. It should be noted that the subfactors were significantly correlated, \( r = .29, p < 0.01 \).

Using a more theory-driven approach, Blatt and colleagues (1995), also using a college sample, reported the presence of two distinct factors within Dependency, corresponding to those subfactors proposed by Rude and Burnham (1995). Relatedness, like Connectedness, was not significantly related to any measures of depression and the focus of attachment was directed towards a particular person, whereas dependence (Neediness) was more highly related to depression than the dependency factor itself, and involved themes of “helplessness, feeling powerless without others and a fear of desertion,” (Blatt et al., 1995, p. 325) and the focus of dependence was nonspecific. These authors also noted that this new dependence facet might be a ‘more effective measure for assessing dysphoria and depression associated with disruptions of interpersonal relationships’ (Blatt et al., 1995, p.334).

**Empirical Support for Subfactors.** Subsequent studies that have used these subfactors have found evidence to support their distinctiveness. In one study (Zuroff, Moskowitz, & Cote, 1999), 100 adult participants recruited via newspaper advertisements were asked to record their behaviours and affects following a minimum of 5 social interactions, per day, over a twenty-day period, where social interaction was defined as lasting a minimum of five minutes. Participants had a list of 46 behaviours to choose from that corresponded to one of the four quadrants of the Interpersonal Circumplex: Dominant, Submissive, Agreeable, or
Quarrelsome, and rated their affect from a choice of nine terms, ranging from positive to negative. An agency score was determined by computing the difference between the dominant and submissive poles, while communion was operationalized as the difference between the agreeableness and quarrelsome poles. Trait-based measures of agency and communion were measured using the Interpersonal Adjective Scale.

As might have been expected, Neediness was found to be negatively associated with trait and behaviour based agency, meaning that individuals with higher levels of Neediness were more likely to be submissive in their dealings with others, and thus more likely to endorse an item such as ‘I gave in,’ rather than ‘I asked someone to do something,’ as a means of not disrupting the relationship, or risking potential abandonment. Connectedness, on the other hand, was positively associated with trait-based communion, but was negatively related to behaving agentically and experiencing positive affect, meaning that people characterized by Connectedness were less likely to feel positive emotions after acting in a dominant manner.

Another study using an adult community sample of couples found that women who were high in Connectedness reported feeling comfortable with closeness in relationships, while men who were high in Connectedness reported trusting their attachment figures (Whiffen, Aube, Thompson, & Campbell, 2000). Interpersonally, submissive-cold behaviour was associated with Neediness in both men and women. Neediness in women was also associated with greater depression. Contrary to theory, however, was the relation between Connectedness and attachment anxiety, which led Whiffen and colleagues (2000) to question whether Connectedness is truly the ‘healthy’ construct that it has been portrayed to be. Moreover, this finding suggested that while Connectedness may be a more mature
form of Dependency, when compared to Neediness, that it may still carry with it a certain degree of vulnerability.

To this point, all the studies discussed have involved nonclinical samples; even the initial studies that reported the existence of the Dependency subfactors were conducted using a college sample leading one to question how these findings generalize to a clinically depressed sample. The only study to date that has investigated these constructs and their construct validity in a clinical sample was conducted by Bacchiochi, Bagby, Cristi, and Watson (in press). They attempted to cross-validate the factor structure of Dependency in both a clinical and non-clinical/non-student sample. Furthermore, clinician-rated depression severity scores were employed, in addition to self-report measures. The construct validity of these dimensions was also assessed by exploring the subscales’ relation with the NEO-PI-R dimensions.

Using statistical procedures similar to Rude and Burnham (1995), Bacchiochi and colleagues (in press) replicated their two-factor solution, which was superior to a unidimensional solution in the nonclinical samples, but not in the depressed sample. The authors hypothesized that this may have resulted from overendorsement of all items in the extreme form by the clinical sample. Contrary to expectation, Connectedness was significantly correlated with both the clinician severity rating using the HRSD and with the self-report measure (BDI), while Neediness was not significantly correlated with either depression severity scales. Furthermore, only in the student sample did women have higher levels of Neediness than men, while overall, women scored higher in Connectedness than the men.

Bacchiochi and colleagues (in press) also reported differential correlations between the Dependency subfactors and the NEO personality factors. Specifically, Neediness was
significantly and positively correlated with the Neuroticism factor, the factor that has been
demonstrated to be a general vulnerability factor for depression (Bagby, Joffe, Parker,
Kalembo, & Harkness, 1995), and to psychopathology in general (Costa & McCrae, 1992).
Neediness was also significantly correlated with four of the six Neuroticism facets:
depression, anxiety, self-consciousness, and vulnerability. Connectedness, on the other
hand, was only significantly correlated with the vulnerability facet, and to a much lesser
degree than Neediness. Moreover, Connectedness was positively and significantly
correlated with warmth, an Extraversion facet. While neither Neediness nor Connectedness
was significantly associated with the entire Extraversion factor, the correlations with it were
quite divergent with the Neediness being negatively associated with Extraversion and
Connectedness being positively associated with the factor. In contrast to the Neuroticism
factor, Extraversion has been associated with positive emotional health and adjustment
(Costa & McCrae, 1992).

Based on these studies, the merit for distinguishing between two types of
Dependency is still tentative and in need of further research. One area in which the utility of
the Dependency subfactors remains unexplored is how they may affect the treatment
response of a clinically depressed sample. How would those characterized by high levels of
Neediness respond to a treatment such as Cognitive Therapy or Pharmacotherapy compared
to those with lower levels of Neediness? Would there even be a difference? And what
about Connectedness? Although it has been associated with health in a nonclinical sample,
in a clinical sample it was also associated with depression (Bacchiochi et al., in press).
Furthermore, would change in Neediness be associated with treatment response? If so,
how? These questions warrant a reanalysis of the study by Rector and colleagues (2000),
deconstructing Dependency into its two subfactors.
Possible Connection between Dependency Subfactors and Treatment Outcome

The new conceptualization of Dependency as a two-factor construct might account for the null findings described by Rector and colleagues (2000). First, Neediness, as the more pathological of the two subfactors, may have functioned in a manner similar to Self-Criticism, with high levels predicting poor response to both types of treatment and likewise, decreases in Neediness may have predicted better response to CT. Such an effect could have resulted from those high in Neediness being more symptomatic or exhibiting a more severe depression than those high in Connectedness, as was found in a depressed sample (Bacchiochi et al., in press), which could have made their depressions comparatively more resistant to treatment. Furthermore, a significant main effect or mediator effect for Neediness may have been nullified if Connectedness played neither role, or if it had an opposite effect to neediness. For example, it is conceivable that baseline Neediness predicted poor treatment response, while Connectedness was associated with positive treatment outcome, in which case, the opposing results, when collapsed into one factor, would have been ‘washed out.’ A negative treatment response for individuals high in Neediness could have resulted if their characteristically high expectations of others, in this case the therapist or psychiatrist, were not met, because the clinician was not able to provide sufficient support or enough contact hours, which would be consistent with other studies that reported high Dependency scores predict poor outcome in response to PT (Imber et al., 1990). This hypothesis does not directly contradict Blatt and Maroudas’ (1992) suggestion that individuals treated with Pharmacotherapy should demonstrate an initial positive placebo effect because this effect may still occur in the first few sessions, but a down turn in her mood may occur when their expectations are not met. Unfortunately, an explicit
examination of this process is not possible in the present study because depression severity was only measured at the beginning and end of treatment.

In CT, the short-term nature of the treatment protocol could have fed into the fears of abandonment characteristic of those high in Neediness, thus making it more difficult for them to engage in the therapeutic process. With respect to Connectedness, given its positive relation with the Warmth facet of Extraversion (Bacchiochi et al., in press), which suggested that these individuals are easily able to form close attachments to others, it is possible that such individuals were able to form a strong therapeutic alliance, resulting in a positive treatment outcome. This hypothesis is supported by a previous study that reported that greater depressogenic beliefs, as measured by the DAS, were significantly associated with lower alliance scores, and only when there was a strong bond between clinician and client, did large reductions in DAS scores lead to large changes in depression severity (Rector, Zuroff, & Segal, 1999).

In the analysis testing the mediational effect of Dependency, it is possible that decreases in Neediness were associated with change (reduction) in depression severity, given that Neediness is considered to be the pathological subfactor of Dependency, but that this effect was nullified by a nonsignificant effect with Connectedness. This would be consistent with previous studies that have demonstrated no association between Connectedness and depression (Rude & Burnham, 1995; Blatt et al., 1995), therefore any change in Connectedness would not be predicted to influence depression severity. These alternative explanations argue for the need to investigate the potentially differential roles of Neediness and Connectedness in response to the treatment of depression.
Personality Styles and Symptom Specificity

The issue of symptom specificity is one other area in which the Dependency subfactors may be able to shed some light onto the inconsistent findings reported in the literature. Although not the primary focus of Blatt's theory (1974), he hypothesized that each personality style would be associated with a distinct set of symptoms. Anaclitic depressions, conceptualized as simpler and more infantile, were predicted to be associated with feelings of dependency, somatic complaints, oral cravings, as well as somatic concerns. Introjective depressions, on the other hand, which were thought to be associated with a 'harsh, punitive, unrelentingly critical superego,' (Blatt, 1974) were hypothesized to be associated with anhedonia, social reactivity, social withdrawal, intense feelings of guilt and worthlessness. Empirical tests examining the symptom specificity of these two constructs, however, have been mixed.

Blatt was the first to empirically test this hypothesis with the DEQ and found support for these associations in a nonclinical, student sample (Blatt et al., 1976). Self-Criticism was significantly correlated with the total score of the Zung Self-Rating Scale and to fourteen items from the scale. Although Dependency was significantly correlated to five, primarily somatic items, digestive function, fatigue, psychomotor retardation, irritability, and indecisiveness, the factor itself was not significantly correlated with the total score of the severity scale. To test whether the symptom specificity previously associated with Dependency and Self-Criticism would be borne out in a clinical sample, Blatt, Quinlan, Chevron, McDonald, and Zuroff (1982) had a group of judges identify individuals high in Dependency or Self-Criticism based on their clinical chart records. Four groups (e.g., pure Dependency, pure Self-Criticism, a mixed group of high Dependency and Self-Criticism, and a control group) of inpatients were identified based on median split scores of
Dependency and Self-Criticism. Judges were able to correctly categorize 56% of the patient protocols. Those in the pure Dependency group were found to have higher rates of excessive oral behaviour such as food and alcohol intake, denial of anger, impulsive and suicidal behaviour, as well, their depressions were often precipitated by a loss or childbirth. In contrast, those in the Self-Criticism group displayed social isolation, felt worthless, thought of themselves as failures, had high professional or academic strivings, feared losing control, and had made violent suicide attempts. Common defenses cited involved projection, intellectualization and reaction formation. One limitation of this study, however, is the extremely small size of each category, with the smallest group (Self-Criticism) being composed of only six individuals and the largest (the mixed group) having 11 members.

Subsequent studies using the DEQ to test Blatt’s symptom specificity hypothesis have met with less support. Other methods have involved creating Dependency and Self-Criticism symptom composites based on Blatt’s hypotheses and correlating the personality factors with the composites. Using this method and the DEQ to identify Dependency and Self-Criticism, Klein and colleagues (1988), reported that only loss of interest was uniquely associated with Self-Criticism, and only crying or tearfulness was significantly associated with Dependency, after controlling for depression severity in a sample of female outpatients. In another study, Dependency and Self-criticism, as identified by the PSI, were correlated with a theoretical composite, as well as an empirically-derived composite; items that correlated at at least $p < .01$ or $r = .25$ with one scale and at least $r = .10$ less with the others (Robins, Bagby, Rector, Lynch, & Kennedy, 1997) in a sample of depressed outpatients. Although autonomy was positively associated with the theoretical autonomy composite and not with the sociotropy composite, sociotropy was moderately correlated with both theoretical composites. Both scales, however, were uniquely associated with their
corresponding empirically-derived symptom composites. Interestingly, the only theoretical item from the BDI or HRSD in the empirical sociotropy composite was negative body image. Also included in this symptom set were self-blame and guilt, items that were theoretically autonomous. Other items included in the sociotropy composite were feelings of inferiority, social self-consciousness, and rejection sensitivity, consistent with the theoretical model. BDI items empirically associated with autonomy included feeling like a failure, hopelessness, as well as loss of enjoyment and anhedonia, all of which corresponded with the theoretical autonomy composite. Autonomy was not, however, related to vegetative symptoms, which have been associated with endogenous depressions.

Other researchers, who have investigated the question of symptom specificity by creating composites based on Blatt's hypotheses, have found support for only one of the personality constructs. Robins, Block and Peselow (1989), using the SAS to identify individuals with an interpersonal and achievement-oriented style in a sample of 80 depressed psychiatric patients (60 outpatients and 20 inpatients), found that while sociotropy was positively, uniquely, and significantly associated with the sociotropy composite, autonomy was not related to its associated symptom set and was negatively related to sociotropy. When the relation between sociotropy and the individual symptoms of its associated cluster was examined, sociotropy was positively correlated with the following symptoms: crying, psychic anxiety, decision-making difficulty, negative body image, and somatic concerns, while disinterest in people was negatively correlated with sociotropy. A similar analysis with autonomy did not yield any of the predicted correlations. These findings are interesting in light of Blatt's argument that the interpersonal dimension with its associated symptoms was one that was overlooked in current measures of depression (Blatt et al., 1976).
Another group (Persons, Miranda, & Perloff, 1991), using the DAS, reported results contrary to those of Robins and colleagues (1989). They, too, identified items from the BDI that appeared consistent with the interpersonal and achievement-oriented style and examined the relation between them in a patient and nonpatient sample. As predicted, Achievement was significantly related to feelings of failure, self-blame, self-hate, guilt, loss of interest in others, and hopelessness. Conversely, Dependency was not significantly related to sadness, crying, or concern about attractiveness. A subsequent analysis which examined whether the identified relation between Achievement and its associated symptoms was unique to Achievement and thus significantly greater than its relation to Dependency, found only two symptoms when this was true: feelings of failure and guilt. Interpretation of these results must be somewhat guarded because depression in the nonpatient sample was assessed by a self-report questionnaire.

Taking a different approach, Robins and Luten (1991) created the Inventory of Clinical Features, based on clinical aspects hypothesized by Beck (1983) to be associated more with one personality style than the other. Included in the Sociotropy composite were: optimism about treatment, response to reassurance, variability and reactivity of mood, and feelings of relief with regard to hospitalization, while the Autonomy composite consisted of the following items: loss of interest or pleasure, feeling like a failure, self-blame, loss of interest in people, avoidance of people, irritability, and concern about ability to function. Both composites were uniquely and significantly associated with their respective personality style.

Burke and Haslam (2001), in their study that assessed the relation between personality style and four factor analytically-derived symptom dimensions of the BDI (i.e., hopelessness, self-punitive, anhedonia, and vegetative) found that DEQ Dependency and
Self-Criticism were associated with the self-punitive dimension (e.g., self-dislike, feeling punished, self-blame, guilt, and feelings of failure). Self-criticism was also associated with the hopelessness composite, which included the pessimism and suicidal items of the BDI. Burke and Haslam (2001) not only conducted analyses with the DEQ, but also with the PSI-R, and the SAS. These scales then underwent a principle components factor analysis which resulted in two Dependency factors: one that emphasized maintaining approval and standing in the eyes of others, and the other that focused on issues of separation, loss, and abandonment. The first factor was associated with the self-punitive composite, while the other was not uniquely associated with any composite.

In summary, a review of the studies to date that have examined the symptom specificity hypothesis have been mixed, which is partly due to different measures of the Dependency and Self-Criticism styles being used, as well as use of different symptom measures. Of the studies conducted, the Dependency factor’s association with a theoretical symptom profile appears to be the most questionable (Klein et al., 1988; Robins et al., 1997; Robins et al., 1989; Persons et al., 1991; Burke & Haslam, 2001). Furthermore, only a handful of studies have examined the DEQ Dependency construct in this light, and none have decomposed Dependency into its two proposed subfactors. It is possible that again, the combination of Neediness and Connectedness into one factor has served to ‘wash-out’ any effect one factor may have had. It is conceivable that Neediness, as the truer representation of Dependency, is positively associated with the symptoms hypothesized by Blatt and colleagues (1976), but that combining it with Connectedness, a factor that has not been related to depression, nullifies these results. Thus, one goal of this study is to explicitly examine the relation between Neediness and Connectedness and their unique relation to the theoretical Dependency symptom profile.
Summary of Relevant Research and Rationale for Proposed Study

To date, consistent findings from various theoretical orientations support conceptualizing depressions and their predisposing personality style according to one of two overarching themes. The first theme involves an interpersonal orientation of wanting to be loved, but intensely fearing abandonment and rejection, while the second, achievement orientation, emphasizes defining oneself as an independent entity who is recognized and admired by others, but who feels guilty and worthless for not living up to a self-imposed set of expectations and standards. Measures have been developed that consistently identify these depressive subtypes. Although considerable research has investigated Dependency and Self-Criticism's role as an underlying vulnerability factor of depression, very little has specifically examined their particular role in treatment outcome. More importantly, no research has yet looked at the subsfactors of Dependency, Neediness and Connectedness, and the role they play in the treatment of clinical depression. Such research is necessary for several reasons. First, it would be only the second study to test the Dependency subscales in a clinical sample and the first to explore their role in the treatment of depression. Second, knowledge that a particular personality type is more or less responsive to a particular form of therapy would have implications for treatment because it would allow clinicians to make better informed decisions when recommending treatment. Furthermore, an examination of the symptom specificity associated with the Neediness and Connectedness constructs may shed light on the inconsistent results that have been reported in the literature. Combined, these analyses will be among the first to explore the construct validity of these personality traits. In summary, the goals of this study are to: a) examine whether baseline Neediness and Connectedness differentially predict treatment response across therapy conditions (main effect) b) examine if and how change in Neediness and Connectedness mediate the relation
between treatment group (i.e., Cognitive Therapy and Pharmacotherapy) and treatment outcome (mediation effect) and lastly c) determine whether these constructs are differentially associated with depressive symptoms.

Hypotheses

**Hypothesis 1a - Main Effect of Baseline Neediness.** It is predicted that baseline Neediness in both the PT and CT condition will be associated with poor treatment outcome (i.e., nonresponder status), or a non-significant reduction in BDI and HRSD scores. In other words, when collapsed across treatment group, baseline Neediness will predict poor treatment outcome.

**Hypothesis 1b – Main Effect of Baseline Connectedness.** It is predicted that baseline Connectedness in both the PT and CT condition will be associated with positive treatment outcome (i.e., responder status) or a significant reduction in BDI and HRSD scores. Again, it is hypothesized that after collapsing across treatment group, baseline Connectedness will be associated with positive treatment outcome.

**Hypothesis 2 – Mediation Effect of Change in Neediness.** Change in Neediness scores is predicted to mediate the relation between type of treatment (i.e., treatment group) and treatment outcome. Specifically, in the CT condition, a reduction in Neediness will be associated with positive treatment outcome or a significant change or reduction in depression severity, as measured by the BDI and HRSD. No evidence of a mediating role of change in Connectedness in the relation between treatment group and treatment outcome is expected. No mediation effects are predicted to occur in the Pharmacotherapy condition because although Pharmacotherapy has been demonstrated to reduce depression severity scores, it has not been found to significantly reduce scores on traits, such as Dependency.
Hypothesis 3 – Symptom Specificity. Neediness will be significantly and uniquely related to a symptom composite that has been theoretically associated with Dependency. This will be referred to hereafter as the Dependency Symptom Composite. Neediness’ symptom specificity will be demonstrated if Neediness is not only significantly correlated with the Dependency Symptom Composite, but that this correlation is significantly greater than any correlations between the Dependency Symptom Composite and any of the other DEQ factors (i.e., Self-Criticism, Dependency, Connectedness). Lastly, to demonstrate symptom specificity, if Neediness is correlated with the Self-Criticism Symptom composite, it will be significantly less correlated with this composite, than the Self-Criticism factor. Connectedness is not expected to be correlated with either the Dependency or the Self-Criticism Symptom Composites.

METHOD

Participants

The data were retrieved from an archival data set that was initially collected as part of another study (Rector et al., 2000). The sample consisted of 109 outpatients (36 men, 73 women) diagnosed with a nonpsychotic major depressive episode, who were medication free for at least two weeks prior to treatment onset, and who did not have an active, concurrent medical disorder. Patients were recruited from either the Depression Clinic, hereafter referred to as the Pharmacotherapy (PT) group, or Cognitive Therapy Clinic (CT) at the Centre for Addiction and Mental Health (CAMH)-Clarke division after being referred by a health professional (i.e., general practitioner in the community, psychiatrists working in either public or private psychiatric facilities, psychiatrists working in community hospitals, clinical psychologists working in either a clinical/research or private setting, nurses, and social workers). Self-referrals were accepted at the CT unit, but not at the Depression clinic.
The mean age of the sample was 37.22 years (SD = 10.54). In this sample, 49 were single (45%), 37 were married (34%), 17 were separated or divorced (16%), and the marital status of one participant was unknown (1%). Fifty-six participants were employed (51%), 42 were unemployed (39%), and the status of 11 participants was unknown (10%). The mean years of education for the sample was 15.30 years (SD = 3.14). The approximate 3:1, female to male ratio is consistent with previous studies on depression (Elkin et al., 1992).

**Measures**

The *Depressive Experiences Questionnaire* (DEQ; Blatt et al., 1976) is a 66-item self-report measure describing experiences frequently associated with depression, such as how individuals feel about themselves and others, as well as the daily issues that concern and preoccupy them (see Appendix A). This is not a measure of depressive symptoms per se. Factor analysis indicated the presence of three factors, Dependency, Self-Criticism and Efficacy. The measure has reasonable levels of internal consistency (Cronbach’s alpha > .75) and test-retest reliability coefficients over a 3 and 12-month period of approximately .80 for Dependency and .75 for Self-Criticism (Zuroff, et al., 1990; Zuroff et al., 1983). The factor structure has also been replicated in a large college sample (Zuroff et al., 1990).

The constructs of particular interest in this study are Neediness and Connectedness, subfactors of the Dependency factor. Subsequent reanalysis of the Dependency factor using two different methods (i.e., principal factors analysis and smallest space analysis) indicated that Dependency was composed of two identifiable subfactors (Rude & Burnham, 1995; Blatt et al., 1995). In this study, we consider both Neediness and Connectedness scores upon entry into treatment (baseline Neediness and baseline Connectedness), as well as change scores of Neediness and Connectedness from pre- to post-treatment.
The Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1979) is a 21-item scale that measures level of depression severity by tapping symptoms and attitudes frequently experienced by depressed psychiatric patients derived from clinical observation (see Appendix B). In a meta-analysis, the BDI's internal consistency was .81 in a nonpsychiatric sample with a test-retest reliability in the order of .60 (Beck, Steer, and Garbin, 1988).

The standard Hamilton Rating Scale for Depression (HRSD; Hamilton, 1960) is a 17-item clinician-administered scale composed of graded statements that measures depression severity by assessing somatic, vegetative, and cognitive symptoms (see Appendix C). It is one of the most frequently used and well-validated clinician-rated measures of depressive severity. It has been used in hundreds of studies and clinical research protocols, and it is generally considered to be the standard measure of depressive severity when evaluating the efficacy of treatments for depression. Items from this scale will be used along with those from the BDI to derive the symptom composites.

Procedure

All participants were administered the Schedule for Affective Disorders and Schizophrenia (SADS) structured interview and diagnosed based on the Research and Diagnostic Criteria (RDC; Spitzer, Endicott, & Robbins, 1979) prior to treatment and following acceptance of their informed, written consent (see Appendix D). Participants then completed the BDI and DEQ.

Pharmacotherapy (PT) – Participants received a 12-week trial of a MAOI (phenelzine or tranylcypromine), a tricyclic (despramine or nortriptyline), or an SSRI (imipramine, fluoxetine, or fluoxetine), as selected by their treating psychiatrist. Medications were given at an adequate dose, but if by week five, participants were not
responding, they were then tried on another antidepressant such as a SSRI, or had their current medication augmented with lithium, or triiodothyronine (T3), or after an appropriate washout period of two weeks, had a trial of MAOI. Responder status was still assessed after 12 weeks, even if medications were altered at week 5.

**Cognitive Therapy (CT)** - Participants in the CT condition received 20 weeks of manualized cognitive treatment as outlined by Beck and colleagues (Beck et al., 1979). The focus of this therapy is exploring and challenging participants' maladaptive schemas of the self, world, and the future. Treatment was administered by seven trained therapists (mean age = 39.7 years): three Ph.D level psychologists, one psychiatrist, one Masters level psychology associate, and two psychiatry residents. Both the Masters level associate and psychiatry residents received two hours of therapy supervision per week.

**Construction of Dependency and Self-Criticism Symptom Composites** - The Dependency and Self-Criticism Symptom Composites were assembled from items from the BDI and the HRSD, based on the hypotheses formulated by Blatt (1974) and used by various research groups (Robins, et al., 1989; Persons et al., 1991; Robbins et al., 1997). Specifically, for the Dependency Symptom Composite, the BDI contributed the following items: sad mood, crying, decision-making difficulty, negative body-image, and somatization and the HRSD contributed the four following items: depressed mood, general somatic problems, somatic anxiety, and psychic anxiety. For the Self-Criticism Symptom Composite, the BDI contributed the following items: hopelessness, feeling like a failure, loss of satisfaction, guilt, punishment, disappointment in self, self-blame, irritability, loss of interest in people, and loss of functioning, while the HRSD contributed these two items: difficulty working, and social withdrawal.
RESULTS

Overview of Data Analyses

All analyses were performed using SPSS for windows. Due to the nonrandom assignment of participants to treatment groups, following descriptive analyses, independent samples t-tests were conducted to test for differences at baseline between clinics. Repeated measures ANOVAs were performed to explore the effect of treatment time on personality and depression severity measures. Bivariate correlations were conducted to test the magnitude and direction of associations between baseline personality measures and depression severity, as well as between change scores in Neediness and Connectedness and BDI change scores. Logistic regressions were subsequently performed to test the effect of baseline Neediness and Connectedness on treatment outcome. Separate logistic regression analyses were also used to test the mediational effect of change in Neediness and Connectedness on the relation between treatment group and outcome. Finally, bivariate correlations were conducted between baseline DEQ factors (i.e., Self-Criticism, Dependency, and Neediness, and Connectedness) and theoretical Self-Criticism and Dependency symptom composites. The alpha level was set to 0.05 for the multiple regression equation.

Demographic Variables

Pretreatment, participants endorsed symptoms consistent with a moderate level of depression severity, mean BDI = 25.8 (SD = 8.6), HRSD = 17.3 (SD = 4.4). The mean pretreatment Neediness was .51 (SD = .65) and mean baseline Connectedness was -.28 (SD = .79), all of which were comparable to other published studies. Since this was a naturalistic study, in which participants were not randomly assigned, preliminary analyses were conducted comparing participants in Pharmacotherapy (PT) with those in the Cognitive
Therapy (CT) group on a number of demographic and clinical variables. The only significant difference between clinics was age, $t(107) = -2.54$, $p < .02$, where participants in the PT clinic were older than those in the CT condition. In order to control for this difference between treatment groups, age will be entered into all subsequent analyses, in the first step. There were no significant differences between groups for the following clinical variables: age at first episode, duration of current episode, number of previous hospitalizations, or for depression severity. See Table 2 for the means and standard deviations by clinic. The present findings suggest that the study assessed a representative clinical sample of depressed adults.

**Neediness, Connectedness, and Depression Severity, Pre-Treatment**

Again, due to the nonrandom assignment of participants to treatment groups, preliminary tests were conducted to examine whether there were baseline differences in DEQ Neediness and Connectedness Dependency subscale scores that could potentially account for differences in treatment outcome. Independent sample $t$-tests indicated that there were no significant differences between clinics in baseline scores of Neediness or Connectedness, $p > .71$ and $p > .10$, respectively. Furthermore, the Neediness and Connectedness baseline scores were consistent with those reported in previous research using a clinical sample (Bacchiochi et al., in press). Table 3 shows the pre-treatment means and standard deviations of the personality variables by clinic. Table 4 displays the correlation matrix of the baseline personality and depression severity measures by clinic. Despite the nonsignificant differences between clinics on baseline Neediness and Connectedness scores, in the PT condition, Connectedness was significantly correlated with both the BDI and HRSD, $r = .28$, $p < .04$ and $r = .29$, $p < .03$, respectively, but not in the CT condition. Contrary to expectation, Neediness was not correlated with either depression
Table 2

Descriptive Statistics of Demographic and Clinical Variables by Clinic

<table>
<thead>
<tr>
<th>Variable</th>
<th>Cognitive Therapy (n = 51)</th>
<th>Pharmacotherapy (n = 58)</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>34.6</td>
<td>10.01</td>
<td>39.6</td>
<td>10.5</td>
</tr>
<tr>
<td>Age at 1st episode</td>
<td>28.7</td>
<td>17.02</td>
<td>29.8</td>
<td>12.2</td>
</tr>
<tr>
<td>Duration of current episode</td>
<td>7.3</td>
<td>1.1</td>
<td>7.0</td>
<td>1.60</td>
</tr>
<tr>
<td>(in months)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Hospitalizations</td>
<td>.83</td>
<td>1.72</td>
<td>.23</td>
<td>.51</td>
</tr>
<tr>
<td>Depression Severity (BDI)</td>
<td>25.3</td>
<td>8.9</td>
<td>26.2</td>
<td>8.4</td>
</tr>
<tr>
<td>Gender (% female)</td>
<td>67</td>
<td>67</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status (% single)</td>
<td>43</td>
<td>47</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. BDI = Beck Depression Inventory, SD = Standard Deviation.
Table 3

Pre- and Post treatment Descriptive Data by Clinic

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pretreatment</th>
<th>Post treatment</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CT (n = 51)</td>
<td>PT (n = 58)</td>
<td>CT (n = 51)</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>Neediness</td>
<td>.53</td>
<td>.62</td>
<td>.481</td>
</tr>
<tr>
<td>Connectedness</td>
<td>-.42</td>
<td>.77</td>
<td>-.17</td>
</tr>
<tr>
<td>BDI</td>
<td>25.31</td>
<td>8.91</td>
<td>26.21</td>
</tr>
<tr>
<td>HRSD</td>
<td>14.18</td>
<td>4.69</td>
<td>18.79</td>
</tr>
</tbody>
</table>

Note. CT = Cognitive Therapy; PT = Pharmacotherapy; BDI = Beck Depression Inventory; HRSD = Hamilton Rating Scale – Depression.
Table 4

Zero-order Correlations between Baseline Measures by Treatment Group – CT (n = 51) and PT (n = 53)

<table>
<thead>
<tr>
<th>Measures</th>
<th>Neediness</th>
<th>Connectedness</th>
<th>BDI</th>
<th>HRSD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neediness</td>
<td>X</td>
<td>.16</td>
<td>.42**</td>
<td>.25</td>
</tr>
<tr>
<td>Connectedness</td>
<td>-.01</td>
<td>X</td>
<td>.22</td>
<td>.36</td>
</tr>
<tr>
<td>BDI</td>
<td>.25</td>
<td>.29*</td>
<td>X</td>
<td>.60**</td>
</tr>
<tr>
<td>HRSD</td>
<td>-.03</td>
<td>.28*</td>
<td>.60**</td>
<td>X</td>
</tr>
</tbody>
</table>

Note. BDI = Beck Depression Inventory; HRSD = Hamilton Rating Scale – Depression. Correlations above the diagonal are for the Cognitive Therapy condition, below it for the Pharmacotherapy condition. * p < .05; ** p < .01.
severity measures in the PT condition, though it was significantly correlated with the BDI in the CT condition, $r = .42$, $p < .002$.

**Neediness, Connectedness, and Depression Severity Change over Treatment Time.**

To determine whether CT and PT produced significant and equivalent changes in BDI, Neediness, and Connectedness scores after treatment, three repeated-measure ANOVAs were conducted. In all analyses the dependent, within subject variable was participants’ pretreatment or Time 1 scores (i.e., BDI, Neediness and Connectedness) and their subsequent post-treatment or Time 2 scores. The between-groups variable was clinic or treatment group (i.e., PT or CT). Thus, each of these analyses had one within subjects factor, Time (that is, Time 1 vs. Time 2 scores on the respective measure) and the between subjects factor was treatment group (CT vs. PT). For BDI scores, there was a significant main effect for time, $F(1, 107) = 197.58$, $p < .001$. There was no main effect for treatment condition, $F(1, 107) = 1.54$, $p > .22$, nor was there a significant time by treatment interaction, $F(1, 107) = .73$, $p > .40$, thus suggesting that participants’ depression severity was significantly reduced over the course of treatment, regardless of whether they were treated with CT or PT. With respect to Neediness, there was also a significant main effect for time, $F(1, 107), p < .001$, but no significant main effect for clinic, $F(1, 107), p > .94$ or for the time by clinic interaction, $F(1, 107) = .95$, $p > .34$. This finding demonstrates that Neediness scores of participants in both CT and PT were significantly reduced following treatment. Lastly, there was a significant main effect for Connectedness, $F(1, 107) = 20.13$, $p < .001$. There was no main effect for clinic, $F(1, 107) = 3.74$, $p > .06$ and the interaction of time by clinic was not significant, $F(1, 107) = .19$, $p > .67$. Thus, as with Neediness, so with Connectedness: The Connectedness scores of participants across both CT and PT were
significantly reduced following treatment. See Table 2 for a summary of post-treatment means and standard deviations by clinic.

Correlations between Change in Neediness and Connectedness and Change in Depression Severity.

To determine whether changes in Neediness and/or Connectedness were associated with a change in depression severity (i.e., BDI scores), correlations were calculated. See Table 5 for a summary of correlations. Instead of calculating change scores by subtracting post-treatment scores from the pre-treatment scores, which does not control for differences at treatment initiation, residualized change scores were computed and used in the correlational analyses and subsequent mediational analyses (Cohen & Cohen, 1983). Residualized change scores were calculated by regressing post-treatment scores onto baseline scores and then saving the resulting residuals. In the CT treatment condition, the Neediness and BDI residualized change scores were significantly correlated, $r = .38, p < .007$, as were the Connectedness and BDI residualized change scores, $r = .38, p < .007$. The positive correlations between BDI and Neediness residualized change scores and BDI and Connectedness change scores indicate that reductions in Neediness and Connectedness were associated with reductions in depression severity. However, because correlations do not speak to the question of causation, the opposite was also true; decreases in depression severity were associated with decreases in Neediness and Connectedness. In contrast, there were no significant correlations between Neediness / Connectedness and depression severity change scores in the PT condition, meaning that there was no association between the reduction in depression severity and the reductions in the Dependency subscales.
Table 5

Correlations between Change Scores of Measures by Treatment Group (Clinic) - CT (n = 51) and PT (n = 53).

<table>
<thead>
<tr>
<th></th>
<th>Neediness-RCS</th>
<th>Connectedness-RCS</th>
<th>BDI-RCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neediness-RCS</td>
<td>X</td>
<td>.50**</td>
<td>.38**</td>
</tr>
<tr>
<td>Connectedness-RCS</td>
<td>-.08</td>
<td>X</td>
<td>.38**</td>
</tr>
<tr>
<td>BDI-RCS</td>
<td>.19</td>
<td>.06</td>
<td>X</td>
</tr>
</tbody>
</table>

Note. RCS = Residualized Change Score. Correlations above the diagonal are for the Cognitive Therapy condition, below it for the Pharmacotherapy condition. ** p < .01.
Main Effects of Baseline Personality Constructs on Treatment Outcome

Hypotheses 1a and b investigated the main effect of baseline Neediness and Connectedness on treatment outcome. Treatment outcome was operationalized according to criteria recommended by Frank and colleagues (1991) as at least a 50% reduction in BDI score from pre-treatment (Time 1) to post-treatment (Time 2), in addition to a post-treatment BDI of 8 or less. Responder status was dummy-coded, with responders, those who met the aforementioned criteria, coded 1, while the nonresponders were coded 0. Two separate logistic regression analyses were conducted, one for baseline Neediness, the other for baseline Connectedness, with age entered in the first step, followed by the baseline personality constructs.

Main Effects of Baseline Neediness. Contrary to prediction, there was no support for Hypothesis 1a to indicate that baseline Neediness scores predicted treatment outcome, B = -.41, Wald = 4.37, $R^2 = .05$, $p > .21$, when collapsing across clinics (i.e., PT and CT).

Main Effect of Baseline Connectedness. Again, contrary to prediction, there was no support for Hypothesis 1b to indicate that baseline Connectedness predicted treatment outcome, B = .03, Wald = .01, $R^2 = .04$, $p > .91$, when collapsing across clinics (i.e., PT and CT).

Since neither baseline Neediness nor Connectedness predicted overall treatment outcome, exploratory moderator analyses were conducted to investigate whether there was an interaction between treatment group and baseline Neediness and/or baseline Connectedness in predicting treatment outcome. This analysis was also suggested by the findings noted above (see Table 5), that changes in both Neediness and Connectedness during treatment correlated with changes in the BDI scores for the CT group, but not for the PT group.
Treatment group was also dummy-coded: Cognitive Therapy was coded 1 and Pharmacotherapy was coded 0. To aid in the interpretation of any significant interactions, both baseline Neediness and Connectedness scores were centred (i.e., the mean of Neediness and Connectedness was subtracted from each individual score to arrive at a new mean of 0), as recommended by Aiken and West (1991) when dealing with an interaction between a categorical and continuous variable. The benefit of centring is that it reduces the degree of multicollinearity (correlation) between the interaction term and its constituent variables. Thus, in the regression analyses, responder vs. non-responder was the dependent variable, whereas treatment group and the baseline Dependency subfactors (Neediness and Connectedness) were the predictors. Two separate regression equations were formed, one to test for the moderating effects of baseline Connectedness, and another to test for the moderating effects of baseline Neediness.

Hierarchical logistic regression analyses were used to test the moderating effect of each of these Dependency subfactors. Age was entered into the first step to control for differences between clinics, followed in the second step by treatment group and baseline personality score (that is, Connectedness in the first analysis, Neediness in the second). In the final step of each regression analysis, the interaction between treatment group and baseline personality score (that is, Connectedness in the first regression analysis, Neediness in the second) was entered. A moderating effect would be suggested by a significant interaction. See Table 6 for a summary of the regression analyses and Figures 1 and 2.

**Moderating Effect of Neediness.** The results indicated that baseline Neediness scores moderated treatment outcome. First, there was a significant interaction between treatment group and baseline Neediness, $B = 1.47$, Wald = 4.11, $R^2 = .10$, $p < .05$, after accounting for the main effects of treatment group and baseline Neediness, and controlling for age.
Table 6

Logistic Regression Moderator Analyses Predicting Treatment Response (n = 104).

<table>
<thead>
<tr>
<th>Hierarchical Order</th>
<th>Predictor Variable</th>
<th>B</th>
<th>Wald</th>
<th>R²</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Neediness</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Age</td>
<td>.04</td>
<td>3.54</td>
<td>.04</td>
<td>.07</td>
</tr>
<tr>
<td>2</td>
<td>Treatment group</td>
<td>-.37</td>
<td>.79</td>
<td>.06</td>
<td>.38</td>
</tr>
<tr>
<td></td>
<td>Baseline Neediness</td>
<td>-.22</td>
<td>.47</td>
<td>.64</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Group x Neediness</td>
<td>1.47</td>
<td>4.11</td>
<td>.10</td>
<td>.04</td>
</tr>
<tr>
<td></td>
<td><strong>Connectedness</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Age</td>
<td>-.36</td>
<td>2.87</td>
<td>.04</td>
<td>.09</td>
</tr>
<tr>
<td>2</td>
<td>Treatment group</td>
<td>.40</td>
<td>.89</td>
<td>.05</td>
<td>.35</td>
</tr>
<tr>
<td></td>
<td>Baseline Connectedness</td>
<td>.11</td>
<td>.07</td>
<td>.79</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Group x Connectedness</td>
<td>-.67</td>
<td>.02</td>
<td>.05</td>
<td>.90</td>
</tr>
</tbody>
</table>
Figure 1

Pre and Post-Treatment Neediness by Clinic and Responder Status

Note. PT = Pharmacotherapy; CT = Cognitive Therapy; Non = Nonresponder; Resp = Responder.
Figure 2

**Pre and Post-Treatment Connectedness by Clinic and Responder Status**

![Graph showing connectedness by clinic and responder status over time.](image)

**Note.** PT = Pharmacotherapy; CT = Cognitive Therapy; Non = Nonresponder; Resp = Responder.
This means that whether someone was a responder to treatment or not was influenced by their degree of baseline Neediness, contingent on the type of therapy they had. The interaction was investigated by examining the simple slopes of baseline Neediness at both levels of treatment group, which indicated that in the CT condition, baseline Neediness was predictive of treatment outcome, $B = -1.24$, Wald $= 5.04$, $p < .03$, with high baseline Neediness associated with poor treatment outcome.

**Moderating Effect of Connectedness.** Table 6 indicates that the interaction between treatment group and baseline Connectedness was not significant, $p > .90$, indicating that baseline Connectedness scores did not moderate the relation between treatment group and treatment outcome. In other words, there was no evidence that high baseline scores of Connectedness were associated with positive treatment outcome. See Figure 2.

**Mediating Effects of Neediness and Connectedness.**

The second hypothesis examined whether change in Neediness and Connectedness mediated the relation between treatment group and outcome. Specifically, it was predicted that a reduction in Neediness would be associated with positive treatment outcome in the CT group, while evidence that change in Connectedness would play a mediational role was not expected.

As mentioned in the introduction, according to Baron and Kenny (1986), there are three components to a mediation analysis, the criteria for which must be met in order to suggest that a variable mediates the relation between a predictor (treatment group) and an outcome variable (treatment response). First, there should be a significant effect of treatment group on outcome. Second, the treatment group variable should predict the proposed mediator variable (change in Neediness or Connectedness), and lastly, the mediator variable should predict the outcome variable after controlling for treatment group.
If these criteria are met, then the last equation should reduce the significance of the predictor variable to as much as zero in the case of total mediation. To test whether these criteria were met, a series of logistic regression analyses were conducted to determine if (a) treatment group predicted treatment response, (b) whether treatment group predicted residualized change scores of Neediness and/or Connectedness and (c) if residualized change scores of Neediness and/or Connectedness predicted treatment response after controlling for treatment group. In each equation, age was statistically controlled for by entering it first. See Table 7 for a summary of the regression analyses.

**Mediating Effect of Neediness.** In the first regression equation, treatment outcome was regressed onto treatment clinic, which was not significant, $B = -.38, \text{ Wald} = 2.32, R^2 = .05, p > .12$, indicating that treatment group did not predict treatment outcome. This finding was consistent with the previous finding that participants’ BDI scores decreased significantly over the course of treatment, *regardless of treatment administered* (see pp. 44, above). Given this result, the mediation analysis really became moot, since there was no difference in the strength of the response effects of one treatment over the other. However, we proceeded with the other two components of the mediation analysis on an exploratory basis. In the second analysis, centred, residualized change scores of Neediness were regressed onto treatment group, which also produced non-significant results, $t (107) = - .90, p > .38$, meaning that treatment group did not significantly predict change in Neediness scores. This was also consistent with the finding that Neediness scores were significantly reduced by the end of treatment, regardless of whether they were treated with CT or PT. The third component of the mediation analysis would determine whether change in Neediness predicted treatment response with any effects of type of treatment being controlled for. Since the first analysis above already established that type of treatment had
### Table 7

#### Summary of Meditational Regression Analyses for Neediness and Connectedness (n = 104)

<table>
<thead>
<tr>
<th>Mediational Step</th>
<th>Dependent Variable</th>
<th>Predictor Variable</th>
<th>B</th>
<th>Wald</th>
<th>t</th>
<th>R²</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neediness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Treatment Response</td>
<td>Age</td>
<td>-.04</td>
<td>2.83</td>
<td>-</td>
<td>.04</td>
<td>.10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Treatment Group</td>
<td>-.38</td>
<td>2.32</td>
<td>-</td>
<td>.05</td>
<td>.13</td>
</tr>
<tr>
<td>2</td>
<td>Neediness Change Score</td>
<td>Age</td>
<td>4.06E-04</td>
<td>-</td>
<td>.04</td>
<td>.01</td>
<td>.97</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Treatment Group</td>
<td>-.18</td>
<td>-</td>
<td>-.90</td>
<td>.39</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Treatment Outcome</td>
<td>Age</td>
<td>-.03</td>
<td>1.91</td>
<td>-</td>
<td>.15</td>
<td>.17</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Treatment group</td>
<td>-.25</td>
<td>.31</td>
<td>-</td>
<td>.58</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Neediness Change score</td>
<td>Age</td>
<td>-.84</td>
<td>10.56</td>
<td>-</td>
<td>.001</td>
<td></td>
</tr>
<tr>
<td>Connectedness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Treatment response</td>
<td>Age</td>
<td>-.04</td>
<td>2.83</td>
<td>-</td>
<td>.05</td>
<td>.10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Treatment group</td>
<td>-.38</td>
<td>2.32</td>
<td>-</td>
<td>.13</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Connectedness Change Score</td>
<td>Age</td>
<td>7.76E-03</td>
<td>-</td>
<td>.83</td>
<td>.02</td>
<td>.41</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Treatment Group</td>
<td>.15</td>
<td>-</td>
<td>-.76</td>
<td>.45</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Treatment Outcome</td>
<td>Age</td>
<td>-.03</td>
<td>2.30</td>
<td>-</td>
<td>.08</td>
<td>.13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Treatment group</td>
<td>-.32</td>
<td>.58</td>
<td>-</td>
<td>.45</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Connectedness Change Score</td>
<td>Age</td>
<td>-.43</td>
<td>3.83</td>
<td>-</td>
<td>.05</td>
<td></td>
</tr>
</tbody>
</table>
no significant effect, controlling for treatment at this stage was a formality. When change in Neediness was regressed onto treatment outcome, after controlling for treatment group, results indicated that change in Neediness significantly predicted treatment response, $B = -0.84$, $Wald = 10.56$, $R^2 = .15$, $p < .001$.

Given the association between change in Neediness and treatment outcome, an exploratory moderation analysis was conducted to see if type of treatment and change in Neediness interacted to predict response to treatment (outcome). A moderation analysis was also recommended by Baron and Kenny (1986), to be performed in such a situation. This interaction was not significant, $B = .61$, $Wald = 1.33$, $R^2 = .16$, $p > .25$, meaning that the relation between change in Neediness and the effectiveness of treatment (outcome) was independent of type of treatment. Therefore, the main effect of change in Neediness on outcome was inspected for direction combining both types of treatment but differentially for responders and non-responders. The results indicated that across both types of treatment, responders had significantly greater reductions in Neediness scores than non-responders, $t (102) = -3.90$, $p < .001$.

**Mediation Effect of Connectedness.** The first analysis regressing treatment outcome on treatment group was not run because it was the same as that in the Neediness model: that is, it had already been run and was found to have no effect. This means, as it did in the Neediness mediation analysis, that the remaining two components of mediation were moot, since there was seemingly no effect to mediate. As with the Neediness mediation analysis, so too here, we continued on an exploratory basis. In the second component, treatment group did not significantly predict the centred, residualized change score in Connectedness, $t (107) = -.76$, $p > .44$, and thus, as with Neediness, a full mediation model could not be demonstrated. However, treatment response was still regressed onto the change in
Connectedness scores after controlling for treatment group, as was done with mediational analysis with Neediness. Contrary to expectation, change in Connectedness scores was predictive of treatment response, above and beyond the effects of treatment group, $B = -.43$, $Wald = 3.83, p < .05$.

Again, following the findings of Table 5, an exploratory post hoc analysis was undertaken to investigate the moderating effect of treatment group on Connectedness residualized change score and treatment outcome. This analysis revealed a significant interaction between treatment group and change in Connectedness, $B = 1.72$, $Wald = 8.8$, $R^2 = .18, p < .004$, after accounting for the main effects of treatment group and change in Connectedness. An examination of the simple slopes indicated that in the CT group, greater reduction in Connectedness was associated with positive treatment response, $B = -1.2$, $Wald = 8.0, p < .006$, whereas in the PT condition, there was no such association, $B = .57$, $Wald = 1.93, p > .17$. An exploratory analysis revealed that change in Connectedness moderated the effect of type of treatment on outcome: although there was no main effect of type of treatment on outcome, type of treatment interacted with changes in Connectedness to predict outcome. It should be noted that moderation is a reciprocal relation, that is, if $x$ moderates the effect of $y$ on $z$ it follows that $y$ moderates the effect of $x$ on $z$. Perhaps, then, a more transparent and comprehensible way of putting this same statistical finding is thus: changes in Connectedness across the course of treatment were related to success in treatment, but this was dependent on the kind of treatment. It held true in CT, but not in PT. As we just saw, however, changes in Neediness did not moderate the relation of type of therapy to outcome: people who became less depressed reduced their Neediness, regardless of type of treatment. This is a particularly interesting finding, although post hoc, because in respect to the original (that is, baseline) modulation analysis, baseline Connectedness did not moderate
the effects of type of treatment on outcome (see Moderating Effects of Connectedness, above), but baseline Neediness did. In other words, baseline Neediness, but not change in Neediness interacted with treatment type to predict outcome, whereas change in Connectedness, but not baseline Connectedness had this same interaction effect.

Subsequent analyses comparing the degree of change in Connectedness between responders in the CT and PT conditions indicated that in the CT condition, Connectedness change scores of responders were significantly more reduced than the Connectedness change scores of responders in the PT condition, \( t(38.32) = 3.1, p < .005 \).

Neediness, Connectedness, and Symptom Specificity

The last question investigated whether Neediness was uniquely associated with a theoretical Dependency composite, which would be demonstrated if Neediness was shown to be more highly correlated with the Dependency composite than with the Self-criticism composite. No hypotheses regarding Connectedness were made since it was not expected to be associated with depressive symptoms. Nonetheless, both Connectedness and the unitary Dependency factor were included in the following analyses for the sake of comparison. Theoretical Dependency and Self-Criticism symptom composites were created and correlations between the personality variables and the symptom composites were calculated.

Tables 8 and 9 display the correlations among the theoretical composites and baseline scores of Neediness, Connectedness, Dependency, and Self-Criticism. Hypothesis 3 was not supported by the data for two main reasons. First, baseline Neediness, was not significantly correlated to the Dependency Symptom Composite, \( r = .13, p > .24 \), and
### Table 8

Correlations of Personality Constructs with Depression Symptoms and Composite

<table>
<thead>
<tr>
<th>Neediness</th>
<th>Concern</th>
<th>Self-Criticism</th>
<th>Emotional</th>
<th>Anxiety</th>
<th>Body</th>
<th>Somatic</th>
<th>General</th>
<th>Social</th>
<th>Criminal</th>
<th>Decision</th>
<th>Sadness</th>
<th>Pay</th>
<th>Nursing</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.99</td>
<td>2.22</td>
<td>3.03</td>
<td>1.81</td>
<td>1.03</td>
<td>0.03</td>
<td>0.95</td>
<td>0.05</td>
<td>0.03</td>
<td>0.02</td>
<td>0.04</td>
<td>0.04</td>
<td>0.43</td>
<td>0.27</td>
</tr>
<tr>
<td>1.15</td>
<td>1.01</td>
<td>1.11</td>
<td>1.24</td>
<td>1.23</td>
<td>1.06</td>
<td>0.05</td>
<td>0.00</td>
<td>0.01</td>
<td>0.12</td>
<td>0.05</td>
<td>0.07</td>
<td>0.4</td>
<td>0.22</td>
</tr>
<tr>
<td>1.01</td>
<td>0.07</td>
<td>1.30</td>
<td>1.29</td>
<td>1.28</td>
<td>0.5</td>
<td>0.05</td>
<td>0.00</td>
<td>0.01</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.4</td>
<td>0.22</td>
</tr>
</tbody>
</table>

Note: Total = Total Depression Symptom Composite; BDII-DEP = Beck Depression Inventory; HRS-D-DEP = Hamilton Rating Scale-Depression, Depression Items. *p < .05; **p < .01. **p < .001.
Table 9: Correlations of Personality Constructs with Self-Criticism Symptoms and Composite Neediness and Connectedness

<table>
<thead>
<tr>
<th>SC</th>
<th>3.770</th>
<th>11</th>
<th>0.02</th>
<th>3.0000</th>
<th>3.0000</th>
<th>3.4000</th>
<th>3.0000</th>
<th>3.4000</th>
<th>3.2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEED</td>
<td>0.94</td>
<td>0.07</td>
<td>0.21</td>
<td>0.08</td>
<td>0.07</td>
<td>0.16</td>
<td>0.08</td>
<td>0.07</td>
<td>0.16</td>
</tr>
<tr>
<td>CON</td>
<td>2.25</td>
<td>0.08</td>
<td>0.08</td>
<td>0.22</td>
<td>0.08</td>
<td>0.08</td>
<td>0.16</td>
<td>0.08</td>
<td>0.08</td>
</tr>
<tr>
<td>DEP</td>
<td>0.60</td>
<td>0.04</td>
<td>0.04</td>
<td>0.04</td>
<td>0.04</td>
<td>0.04</td>
<td>0.04</td>
<td>0.04</td>
<td>0.04</td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: TOTAL = Total Self-Criticism Symptom score; BDI = Beck Depression Inventory; HRSD = Hamilton Rating Scale for Depression; SC = Self-Criticism; DEP = Depression; CON = Connectedness; NEED = Neediness.
second, it was significantly associated with the Self-Criticism Symptom Composite, \( r = .39, p < .001 \). Surprisingly and contrary to expectation, baseline Connectedness was significantly associated with the Dependency Symptom Composite, \( r = .34, p < .001 \), as well as with the Self-criticism Symptom Composite, \( r = .25, p < .042 \). Although both baseline Self-Criticism and Neediness were significantly correlated with the Self-Criticism Symptom Composite, there was evidence using tests for significance between dependent correlations (Cohen and Cohen, 1983, pp. 56-57) supporting baseline Self-Criticism’s predicted differential relation with its composite (\( z = 2.12, p < .05 \)). Additional correlations were calculated between individual items in the Self-criticism Symptom Composite and the baseline Neediness and Self-Criticism scales to investigate which symptoms were most strongly carrying the correlation between the personality constructs and the Self-Criticism Symptom Composite. In cases where both personality styles were significantly correlated to a symptom, a test for significance between dependent correlations was conducted using Fishers \( r_z \) transformations to determine if one personality style was differentially correlated with the item (e.g., is the magnitude of the correlation between an item and baseline Neediness significantly greater than the same item’s correlation with baseline Self-Criticism. When compared to baseline Neediness, baseline Self-Criticism was more significantly associated with the following symptoms from the Self-Criticism Symptom Composite: dissatisfaction (\( z = 2.39, p < .05 \)), guilt (\( z = 1.98, p < .05 \)), punishment (\( z = 2.50, p < .05 \)), irritation (\( z = 3.07, p < .01 \)), and disinterest in others (\( z = 2.46, p < .05 \)).

Since baseline Connectedness and Self-Criticism were both significantly correlated with the Self-Criticism Symptom Composite, a similar set of analyses were
conducted to compare the magnitude of the correlations between items from the Self-Criticism Symptom Composite and baseline Connectedness and Self-Criticism. In comparison to Connectedness, Self-Criticism was more significantly associated with the following symptoms: hopelessness ($z = 2.63, p < .01$), failure ($z = 2.04, p < .05$), dissatisfaction ($z = 4.30, p < .01$), self-hate ($z = 2.38, p < .05$), loss of interest in others ($z = 2.70, p < .01$), and difficulty working ($z = 2.34, p < .05$).

Baseline Neediness did not exhibit any significant differential relations with the Dependency Symptom Composite when compared to baseline connectedness.

DISCUSSION

The primary purpose of this study was to examine if the subcomponents of DEQ Dependency, Neediness and Connectedness, could account for the null findings reported by Rector et al., (2000). They found that DEQ Dependency, when used as an unidimensional construct, did not mediate or moderate the relation between treatment type (i.e., Cognitive Therapy or Pharmacotherapy) and treatment response. The sample consisted of 109 outpatients diagnosed with a Major Depressive Episode, who were treated with either Cognitive Therapy or Pharmacotherapy. This study addressed three issues: (a) Do pretreatment levels of Neediness and/or Connectedness affect whether one responds to treatment for depression, (b) Does change in Neediness and/or Connectedness affect (mediate) the relation between the type of treatment one receives and whether one responds to treatment, and lastly (c) Is Neediness uniquely correlated with a theoretical Dependency Symptom Composite.

Regarding the hypotheses of the study, contrary to expectation, pretreatment (baseline) Neediness and Connectedness failed to predict treatment outcome. Post hoc
analyses indicated, however, that in the Cognitive Therapy condition, baseline Neediness was associated with nonresponse. Unexpectedly, change in Neediness was not found to mediate the relation between treatment type and treatment response. Additional analyses indicated, however, that change in Connectedness was associated with positive treatment response for participants who received Cognitive Therapy. Finally, also contrary to expectation, Connectedness was uniquely associated with a theoretical Dependency symptom composite, while Neediness was significantly correlated with a theoretical Self-Criticism symptom composite. Issues pertaining to each finding will be discussed in turn.

Main Effects of Baseline Neediness and Connectedness. The first set of hypotheses predicted that high Neediness scores, based on the DEQ, would be associated with poor treatment response in both the Cognitive Therapy and Pharmacotherapy conditions, whereas high Connectedness scores were expected to be associated with positive treatment response, again in both Cognitive Therapy and Pharmacotherapy. Although neither of these hypotheses were supported because baseline scores of Neediness and Connectedness failed to predict treatment outcome, merit for distinguishing between the two types of Dependency was suggested. Post hoc analyses investigating the interaction between treatment group and baseline personality revealed significant moderating effects. In the Cognitive Therapy condition, high baseline Neediness scores on the DEQ were associated with poor treatment outcome. In other words, individuals with an anxious concern about being left alone and criticized were less likely to respond to Cognitive Therapy. In contrast, the interaction between baseline Connectedness and treatment group was not significant in predicting treatment response,
meaning that participants' pretreatment level of Connectedness did not predict whether one would be considered a responder or nonresponder, regardless of the treatment received.

Despite the nonsignificant differences between clinics in baseline scores of Neediness, Connectedness, and depression severity, an interesting pattern of correlations emerged amongst these measures. First, contrary to the initial studies proposing these two subfactors (Rude & Burnham, 1995; Blatt et al., 1995), Neediness, the factor that was expected to be associated with depression, was found to be associated with only the self-report measure of depression severity in the Cognitive Therapy condition. This finding of a differential relation between baseline Neediness and depression severity in the two treatment conditions might account for the moderating effect of baseline Neediness in the Cognitive Therapy condition. On this basis, one might have also expected a similar moderating effect for Connectedness in the Pharmacotherapy condition because baseline Connectedness was positively related to depression severity measures in only the Pharmacotherapy condition. However, the results indicated that baseline Connectedness did not predict treatment outcome for people treated with either form of therapy, decreasing the likelihood that the differential relation between baseline Neediness and depression severity could entirely account for the moderating effect found for baseline Neediness in the Cognitive Therapy condition. Furthermore, the finding that high Neediness scores moderated poor treatment response in the Cognitive Therapy condition is consistent with a previous study that reported that high levels of Need for Approval (Dependency) and Perfectionism (Self-Criticism) were associated with poor prognosis (Sotsky et al., 1991).
Although no hypotheses were made regarding the moderating role of Dependency as a unitary construct (i.e., combining Neediness and Connectedness) in the relation between treatment group and outcome in the original study (Rector et al., 2000), one can well imagine why those who are highly sensitive to issues of abandonment, as captured by the Neediness construct, may not fare well in a short-term, evidence-based psychotherapy, such as Cognitive Therapy. First, the short-term nature of the therapy protocol may have limited individuals' ability to fully invest in the therapeutic process, for fear of the eventual 'abandonment' at termination. In short-term treatments such as Cognitive Therapy or Interpersonal Therapy, patients are explicitly informed at the commencement of therapy that treatment will last no longer than 20 weeks. For individuals with a needy personality style, this may immediately trigger their underlying vulnerability and affect their ability to connect with the therapist, and subsequently affect their response to treatment. Patients' ability to feel a bond and sense of security with the therapist is an essential element of a psychotherapy, such as Cognitive Therapy, which emphasizes discussion of feelings and thoughts, not only to ensure the completion of between-session tasks, a key component of this type of therapy, but also to facilitate exploration of problematic areas.

Particularly relevant to this argument is a study conducted by Rector, Zuroff, and Segal (1999) who demonstrated the importance of patients' ability to form a bond while investigating the role of therapeutic alliance in a sample of depressed patients. They reported that individuals with excessive Need for Approval (Dependency) had greater difficulty creating a trusting relationship with the therapist or being able to bond with the therapist. They found that while changes in Dependency scores were associated with
better outcome, this was only true in the context of a strong, trusting relationship, otherwise the clinical improvement was no more better than had an average reduction in dysfunctional beliefs occurred. In this study, participants’ degree of Neediness may have been less of a factor for those treated with Pharmacotherapy where the therapeutic relationship might not have been expected to play as great of a role in treatment outcome since the primary focus of treatment is on symptom reduction and the monitoring of medication, rather than on problematic areas of functioning. This is in contrast to Cognitive Therapy, which focuses primarily on challenging and exploring maladaptive thoughts and feelings.

Along a similar vein, it is conceivable that some patients high in baseline Neediness were able to forge a bond with their therapist, and in so doing, had come to rely on their therapist as a confidant, and thereby improved. However, as termination approached, an event that could trigger their underlying vulnerability, these individuals may have suffered a lapse in their depression severity, as well as an increase in their Neediness scores. Unfortunately, this hypothesis could not be explicitly tested since the depression severity and personality measures were administered at only the beginning and end of treatment.

It is also conceivable that individuals who were initially high in Neediness, who were also more severely depressed, were more resistant to treatment for two reasons: more time was spent on the behavioural component of therapy; and their negative cognitive patterns might have been more deeply ingrained than those of the less Needy participants, and thus were more difficult to change during the limited course of therapy. First, in a typical course of Cognitive Therapy, the initial stage of therapy concentrates on
the behavioural components of therapy (Beck et al., 1979), to reduce patients' depressions to a level at which they are better able to challenge their core schemas. Since those high in Neediness had significantly greater pretreatment depression severity scores, it is conceivable that more time was spent on the behavioural aspects of therapy. Ultimately, this would mean that such individuals would have less time to deal with their potentially more resilient cognitive patterns, the component demonstrated to be most effective in reducing depressogenic cognitions (McNamara & Horan, 1986). To clarify, the cognitive model of depression is based on the premise that 'negative and distorted thinking is the basic psychological problem in the depressive syndrome' (Kovacs & Beck, 1978). According to this view, everyone has both positive and negative cognitive patterns or schemas based on previous experiences through which we are able to make sense of the abundance of information we are confronted with daily. For nondepressed individuals, the positive schemas are typically active (e.g., I am a loveable person), however, when depressed, it is hypothesized that the negative schemas become more active and begin to generalize from one negative event or stressor (e.g., the break-up of a relationship) to other nonrelated situations (e.g., the mailman didn't say hello because I am unlikable). In general, core beliefs can be difficult to challenge and require consistent work, which generally does not occur until the latter stages of treatment (Beck, 1995). This task, one would imagine, would be much more arduous for a person who has a preexisting personality vulnerability, which likely would be activated more often in the course of daily living. As a result, when challenging their negative schemas, these patients might be better able to provide more examples to support their maladaptive beliefs, making them more resilient to change. On the other hand, one might expect that
participants' Neediness would be less problematic in the Pharmacotherapy condition, since the medications presumably work via a different, biological mechanism.

The finding that baseline Connectedness was unrelated to treatment outcome was contrary to expectation. As the subfactor that has been associated with 'psychological well-being' (Rude & Burnham, 1995; Blatt et al., 1995) and with the Warmth facet of Extraversion (Bacchiochi et al., in press), it was predicted that it might mediate a positive treatment outcome. This hypothesis was based on the notion that as individuals who place emphasis on interpersonal relationships, individuals high in Connectedness would be better able to build a strong therapeutic alliance, which has been shown to be associated with good prognosis (Rector et al., 1999). The results indicated, however, that baseline Connectedness scores did not moderate treatment response, neither positively nor negatively. This result, in combination with the finding that baseline Neediness acted as a negative moderator, supports distinguishing between the subfactors. Furthermore, it lends support to the argument made by Whiffen et al. (2000) that Connectedness is not as 'healthy' as it was originally portrayed to be.

Although the original hypotheses were not fully borne out, deconstructing Dependency into its subfactors yielded results that had gone previously unnoticed when examined as an unidimensional construct. Whereas the report by Rector et al. (2000) failed to find significant moderating effects of Dependency on treatment outcome, this study found that individuals who had high pretreatment scores of Neediness on the DEQ and were treated with Cognitive Therapy were more likely to experience a poor treatment response. Although further research would be desired before advocating for the administration of a particular treatment modality based on pretreatment personality
scores, a preliminary treatment implication of this study is that Cognitive Therapy is probably not the treatment of choice for those who present with high levels of Neediness, given that high Neediness seemed to negatively impact outcome in the Cognitive Therapy group, but not in the Pharmacotherapy group. This is consistent with Blatt and Maroudas’ (1992) recommendation that Interpersonal Therapy might be preferable to Cognitive Therapy for this group of patients. However, further research needs to be done to confirm that Neediness does not in fact contraindicate treatment with psychotherapy altogether, rather than indicating treatment with antidepressant medications. This approach, of course, would require further research to ascertain a cut-off score that would differentiate the good from poor responders.

**Mediating Role of Change in Neediness and Connectedness.** The hypothesis investigated the mediating role of Neediness and Connectedness and sought to explore whether change in these variables, after controlling for baseline scores, would be associated with a change in depression severity that would ultimately be predictive of treatment response. It was predicted that a reduction in Neediness scores in the Cognitive Therapy condition would be associated with a decrease in depression severity scores. This relation was not expected to occur in the Pharmacotherapy condition since thoughts and feelings corresponding to this personality style were not expected to be explicitly challenged, as they should have been in the Cognitive Therapy condition. Change in Connectedness, on the other hand, was not expected to be associated with treatment response, in either treatment condition, since it was not associated with depressive symptoms in previous studies (Rude & Burnham, 1995; Blatt et al., 1995).
These hypotheses were not supported as the conditions recommended by Baron and Kenny (1986) for demonstrating a mediation effect were not met. First, treatment group was not predictive of treatment response because participants’ depressions remitted, regardless of whether they received Cognitive Therapy or Pharmacotherapy. In other words, both types of treatment were equally effective in reducing participants’ depression severity, which is consistent with previous studies that reported similar levels of treatment response for patients who received either Cognitive Therapy or Pharmacotherapy (Simons et al., 1984; Hollon, DeRubeis, Evans, Wiemer, Garvey, Grove, & Tuason, 1992). The fact that Pharmacotherapy was equally effective in reducing depression severity does not detract from the possible mediation effect of the personality styles because Pharmacotherapy and Cognitive Therapy are hypothesized to operate via different mechanisms. However, to rightfully demonstrate a mediation effect according to the criteria suggested by Baron and Kenny (1986), one would need to include a control group, in order to have a greater likelihood of treatment group predicting treatment response.

The unexpected finding, which was most problematic for arguing for a mediational role of change in Neediness and Connectedness, was that treatment group did not predict change scores in either Neediness or Connectedness. One would have expected that Cognitive Therapy, which is hypothesized to operate via explicitly challenging maladaptive schemas, would have differentially predicted a reduction in Neediness scores. However, Pharmacotherapy, which is hypothesized to work on biological substrates, also predicted a reduction in Neediness scores, though post hoc analyses indicated that the reductions in the personality constructs were greater in the
Cognitive Therapy condition. Even the literature is inconsistent on this issue. For example, although Simons and colleagues (1984) also found that change in Need for Approval (Dependency) and Perfectionism (Self-Criticism) were not specific to either Pharmacotherapy or Cognitive Therapy, another group reported that Cognitive Therapy was effective in specifically reducing Need for Approval scores (Imber et al., 1990).

In contrast to Simons and colleagues (1984) who ceased their mediational analysis at this point, concluding that the observed cognitive change was the result of a decrease in symptoms, rather than vice versa, this study proceeded, on an exploratory basis, with the final step of the analysis, investigating if change in Neediness and Connectedness predicted treatment response, after controlling for treatment group. These analyses indicated that only in the Cognitive Therapy condition were Neediness and Connectedness change scores predictive of treatment outcome, with a greater reduction associated with better outcome. Since there were no significant differences in the post-treatment depression severity scores between clinics, the changes in the personality variables could not be solely attributed to a reduction in depression severity.

Since the full mediational model was not supported, exploratory post hoc moderation analyses were conducted and indicated that only in the Cognitive Therapy condition were Connectedness change scores predictive of treatment outcome, with a greater reduction associated with better outcome. Change in Neediness, however, did not appear to moderate the relation between treatment group and outcome.

As briefly mentioned, the most damaging finding for the mediational analyses was the discovery that neither clinic uniquely predicted change in Neediness or Connectedness, since only Cognitive Therapy was expected to have an effect on these
constructs given that it explicitly targets them. Although post hoc analyses indicated that Cognitive Therapy resulted in a greater reduction in Connectedness, which was associated with positive treatment response, participants’ levels of Connectedness were also significantly reduced in the Pharmacotherapy condition. One possibility is that the reductions in the two personality constructs were partly due to state dependent changes, that as people’s depression severity decreases, so too, did their Connectedness scores. Such a finding is consistent with the state-trait vulnerability model (Zuroff et al., 1999) that suggests that there is indeed a state-like component to these personality constructs. Without a never depressed control group, however, it would be very difficult to test the trait-like component of these personality constructs. Such a finding would be suggested if the Neediness and Connectedness scores of people whose depressions remitted were higher than the scores of those who had never been depressed, yet lower than those who were still depressed.

Hollon, DeRubeis, and Evans (1987) proposed an alternative mediational model that is compatible with the data and argues that cognitive change can be mediated by some therapies (i.e., Cognitive Therapy), but not all therapies (i.e., Pharmacotherapy). They stated that ‘any change in depression, no matter how it is produced, is seen as producing consequent changes in cognition’ (p. 145). According to this model, exploring and challenging individuals’ maladaptive thoughts and the associated feelings is the vehicle through which change is effected and depression severity reduced in the Cognitive Therapy condition. In contrast, Pharmacotherapy is proposed to operate by affecting neurochemical change, which reduces depression severity, and thereby produces change in cognitions. This view would then seemingly support the mediational
role of change in Connectedness on the relation between Cognitive Therapy and
treatment response. Unfortunately, though, because the personality and depression
measures were only administered at the beginning and end of treatment, it is not possible
to explicitly test this model to determine whether cognitive changes preceded affective
changes in the Cognitive Therapy condition. One previous study that provides supports
for this alternative mediational model reported that in Cognitive Therapy, improvements
in hopelessness and views of self and mood generally improved before changes were
observed in vegetative and motivational domains (Rush, Beck, Kovacs, Weissenburger,
& Hollon, 1982).

Returning to the original study (Rector et al., 2000), no hypotheses were made
regarding Dependency’s mediating role on the basis of Blatt and Maroudas’ (1992)
argument that people with this personality style would be better suited to a supportive-
expressive approach. Although Blatt and Maroudas (1992) acknowledged that ultimately
treatment of those with an anaclitic (Dependent) depression should address issues of
autonomy and self-definition, they argued that treatment would initially need to address
their presenting, interpersonally-oriented problems. According to the results of this
study, changes in the Dependency subfactors were associated with positive treatment
outcome in response to Cognitive Therapy. Since Cognitive Therapy and
Pharmacotherapy were used, one cannot directly comment on Blatt and Maroudas’
(1992) argument that highly needy and/or connected participants would have done better
in a more interpersonally-oriented treatment, though the results do lend some support to
treating such individuals with Cognitive Therapy.
Another interesting question for future research would be to determine the longevity of changes occurring in the Pharmacotherapy condition compared to the Cognitive Therapy condition. If patients treated with Pharmacotherapy suffered a lapse in their mood and a concurrent increase in their DEQ Neediness and/or Connectedness, such a finding might provide further evidence for the state-like component of change in the Pharmacotherapy treatment group, as argued by the Hollon et al., (1987) model. Similarly, one may question whether those who were treated with Cognitive Therapy would be less likely to relapse since the underlying vulnerability was explicitly addressed, unlike in Pharmacotherapy. Currently, an Ontario Mental Health Foundation funded study at the Centre for Addiction and Mental Health is underway to answer this question.

Symptom Specificity and Neediness and Connectedness. The final set of hypotheses examined the symptom specificity of the Neediness and Connectedness Dependency subscales, since prior studies using the unitary Dependency factor have not supported Blatt’s hypotheses. Results of this study indicated that even after separating the Dependency factor into its two proposed subsfactors: Neediness, the ‘truer’ representation of Dependency and Connectedness, the ‘healthy’ Dependency subfactor, Blatt’s hypotheses were still not supported. Furthermore, contrary to expectation, as well as to most previous studies investigating Connectedness, it was this ‘healthy’ factor that was correlated with the traditional Dependency composite, while Neediness was correlated with the Self-Criticism composite. This finding was interesting in light of previous studies that reported that Neediness was either more or solely associated with depressive symptoms (Blatt et al., 1995; Rude & Burnham, 1995) and that Connectedness
was associated with psychological well being, not with depression. One factor that may account for this difference is that the samples, from which the subfactors were derived, were not clinically depressed. For instance, in the sample used by Rude and Burnham (1995), the average BDI score was less than 8, the value used in this study to indicate positive treatment response. To date, only one previous study has investigated Neediness and Connectedness in a clinical sample (Bacchiochi et al., in press) and they, too, found that Connectedness was significantly associated with depression severity, suggesting that the finding herein is not an artifact.

Although the relation between Connectedness and depression severity initially may appear perplexing based on previous reports in the literature, the relation becomes more understandable once one considers how the initial factor was developed. Recall that the original Dependency factor was derived from items reflecting experiences endorsed by depressed patients, and then selected by a group of judges to reflect ‘phenomenological’ experiences associated with depression. While the items composing the Connectedness subfactor such as ‘I am very sensitive to others for signs of rejection,’ and ‘I constantly try, and very often go out of my way, to please or help others I am close to’ certainly appear less pathological than Neediness items such as, ‘I urgently need things that only others can provide,’ and ‘I become frightened when I am alone,’ they still strike one as being more than a healthy concern about interpersonal relationships.

It is conceivable that Connectedness, while associated with well-being in a nonclinical sample, still functions as a vulnerability factor, predisposing individuals who are higher on this construct to depression following an interpersonal disruption.

Consistent with this hypothesis is Rude and Burnham's (1995) caveat that Connectedness
may carry with it its own ‘psychological liability’ (p.338). Indeed, in a nonclinical sample, Whiffen and colleagues (2000) reported that Connectedness was associated with anxiety about attachment for both men and women and argued that the DEQ Connectedness factor is not tapping a healthy form of attachment, as originally thought. Whiffen and colleagues (2000) went so far as to suggest deleting these items from the DEQ and keeping Neediness as a truer representation of the Dependency factor. Given the relative paucity of studies investigating the utility of the Dependency subfactors, it would be premature to begin deleting items before further research is conducted with both clinical and nonclinical samples to better understand these constructs. For example, while various studies have investigated prospectively the course of Self-Criticism and Dependency, no work of this nature has been conducted with Neediness or Connectedness to explore whether Connectedness does in fact confer vulnerability to depression or whether it is more of a state-dependent construct.

While there appeared to be merit for deconstructing Dependency in the areas of mediation and moderation, the added benefit in the issue of symptom specificity is less clear. Although Connectedness was found to be significantly correlated with the Dependency composite, whereas the unitary Dependency factor was not, the importance of this finding was limited by the fact that Self-Criticism was also highly correlated with this symptom composite. Moreover, DEQ Neediness was in fact highly and significantly correlated with DEQ Self-Criticism, while failing to have a significant relation with DEQ Dependency, the construct of which it is thought to be a part. Albeit with various statistical techniques one may be able to show a differential relation of one personality style with a particular symptom, one must question the clinical utility of these distinctions.
when each style is significantly correlated with an item or set of symptoms. It is interesting to observe that although the DEQ was originally developed to overcome the inconsistent findings of distinguishing between types of depressions based on symptoms, current research has again fallen prey to the same problem of trying to categorize people according to symptoms. Based on this study, it appeared as though individuals may take different paths to becoming depressed, yet once the precipitating event occurs, the actual report of symptoms is not particularly specific.

One problem that might account for the lack of symptom specificity is that the items composing the scales used to assess symptom severity are not sufficiently representative of the symptoms experienced by Dependent individuals. This argument was originally stated by Blatt (1976) when he attempted to demonstrate the symptom specificity of the Dependency and Self-Criticism constructs. For example, in the HRSD, crying is subsumed under the mood question, instead of being a separate symptom in and of itself. Furthermore, there are no questions asking specifically about spending more time with others, although social withdrawal is addressed. Thus, it appears that if the quest to find a unique symptom set for the Dependency construct is to continue and be successful, a new measure that incorporates a wider range of symptoms is required.

One final problem that may account for the lack of support for the role of Connectedness as a ‘healthy’ factor compared to Neediness, is that the two constructs may not be entirely independent of one another. The only other study to have used the Neediness and Connectedness constructs in a clinical sample (Bacchioni et al., in press) found little support for a two-factor model of Dependency in their attempt to validate these constructs. Although the two-factor model provided a better fit of the data than a
one-factor model for the clinical sample, only one of the three fit indices suggested an adequate fit, and this index may have been inflated due to the relatively small sample size. The authors argued that it is conceivable that the depressed participants were more likely to over-endorse items, thus decreasing the amount of covariation. They echoed the sentiments of Whiffen et al. (2000) when they suggested that perhaps the Connectedness construct acts as a healthy component in non-depressed individuals, but that at a certain point, it develops a reciprocal relation with mental health and begins to be associated with psychopathology. Again, these findings argue for the continued need to research the behaviour of these constructs in clinical samples.

Limitations. Limitations that curtail the conclusions that can be drawn from this study include: the nonrandom assignment of participants to treatment groups, the lack of adherence measures for treatment, the potential change of medications at week 5, and the differing length of treatment protocols. First, the study is limited by the fact that it was naturalistic, meaning that participants were not randomly assigned to treatment condition, thus it is possible that there were uncontrolled factors that could have affected the data. While this may have reduced the magnitude of the findings (Shadish & Ragsdale, 1996), the nonrandom assignment of participants to treatment groups also might have been a strength because it may have made it more representative of actual clinical practice. It is not uncommon for patients to have definite views of what type of treatment they prefer and thus select one therapy modality over another. The second limitation is that at the time of the original study, adherence measures were not included in the treatment protocol, introducing the possibility that the treatment conditions were not pure. In other words, it is possible that the psychiatrists in the Pharmacotherapy condition did more than
just monitor symptoms, such as provide supportive therapy. At the same time, it is conceivable that the therapists in the Cognitive Therapy condition were not administering true Cognitive Therapy, but deviating from the model. This possibility is less likely since the therapists met weekly to discuss cases. The third limitation is that the medication of participants who were not responding at week 5 were altered, yet responder status was still assessed at week 12, presenting the problem that those who remained on the same medication had an additional four weeks to respond. The final limitation was the difference in the duration of treatment protocols of the two clinics before responder status was assessed; 12 weeks in Pharmacotherapy and 20 weeks in Cognitive Therapy. This introduced the possibility that there may have been more responders in the Pharmacotherapy condition had responder status also been assessed after 20 weeks of treatment. However, the length of each treatment was considered standard protocol for brief intervention. Furthermore, in the NIMH study (Elkin et al., 1992), maximal effects of medications were realized by week 12.

**Future Directions.** As with most research, answering one question tends to lead to many more. First and foremost, further investigation of the DEQ Dependency subfactors in clinical samples is needed to learn more about the behaviour of these constructs. For example, are Neediness and Connectedness discrete factors in a clinical sample or does their independence decrease with increasing psychopathology. In this study, baseline Neediness was found to predict poor response in those treated with Cognitive Therapy, but at what point does Neediness become a prognostic indicator? Second, more work is needed to investigate the process of change in personality and depression severity. For example, while the study demonstrated that there is an association between change in
Connectedness and depression severity, it is unclear which change caused which; did the
decrease in Connectedness result in the subsequent decrease in depression severity, or
vice versa. Administering the DEQ and BDI at more frequent intervals would provide a
window into this question.

Lastly, if the present pursuit of demonstrating the symptom specificity of
Neediness/Dependency is to continue, more comprehensive measures that include more
items tapping into theoretical Dependent items are needed.

Given the substantial economic and personal burden of depression, research into
factors that speak to the issue of treatment prognosis is paramount for quickly and
effectively reducing individuals' depressive symptoms and their likelihood of relapse.
This study supported the deconstruction of DEQ Dependency into its two proposed
subfactors, Neediness and Connectedness. Results indicated that those with an anxious
concern about abandonment were less likely to respond to Cognitive Therapy, while
change in Connectedness was predictive of treatment response. However, before
treatment recommendations are made on the basis of these findings, further research is
necessary to better understand the nature of these constructs, particularly in a clinical
sample since it was unexpectedly found that Connectedness, not Neediness, was
associated with a theoretical Dependency Symptom Composite.

Reference List


# APPENDIX A

**DEQ-full**

Listed below are a number of statements concerning personal characteristics and traits. Read each item and decide whether you agree or disagree and to what extent. Using the scale below as a guide, indicate the extent to which you agree with each of the following statements by circling the corresponding number on the scale provided beside each statement.

<p>| | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I set my personal goals and standards as high as possible.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Without support from others who are close to me, I would be helpless.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>I tend to be satisfied with my current plans and goals, rather than striving for higher goals.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Sometimes I feel very big, and other times I feel very small.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>When I am closely involved with someone, I never feel jealous.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>I urgently need things that only other people can provide.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>I often find that I don’t live up to my own standards or ideals.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>I feel I am always making full use of my potential abilities.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>The lack of permanence in human relationships doesn’t bother me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>If I fail to live up to expectations, I feel unworthy.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Many times I feel helpless.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>I seldom worry about being criticized for things I have said or done.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>There is a considerable difference between how I am now and how I would like to be.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>I enjoy sharp competition with others.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>I feel I have many responsibilities that I must meet.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>There are times when I feel &quot;empty&quot; inside.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Question</td>
<td>Strongly Disagree</td>
<td>Strongly Agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------</td>
<td>---------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>I tend not to be satisfied with what I have.</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>I don't care whether or not I live up to what other people expect of me.</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>I become frightened when I feel alone.</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>I would feel like I'd be losing an important part of myself if I lost a very close friend.</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21.</td>
<td>People will accept me no matter how many mistakes I have made.</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td>I have difficulty breaking off a relationship that is making me unhappy.</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23.</td>
<td>I often think about the danger of losing someone who is close to me.</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24.</td>
<td>Other people have high expectations of me.</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25.</td>
<td>When I am with others, I tend to devalue or “undersell” myself.</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26.</td>
<td>I am not very concerned with how other people respond to me.</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27.</td>
<td>No matter how close a relationship between two people is, there is always a large amount of uncertainty and conflict.</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28.</td>
<td>I am very sensitive to others for signs of rejections.</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29.</td>
<td>It's important for my family that I succeed.</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30.</td>
<td>Often, I feel I have disappointed others.</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31.</td>
<td>If someone makes me angry, I let him (her) know how I feel.</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32.</td>
<td>I constantly try, and very often go out of my way, to please or help people I am close to.</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33.</td>
<td>I have many inner resources (abilities, strengths).</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>34.</td>
<td>I find it very difficult to say “No” to the requests of friends.</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35.</td>
<td>I never really feel secure in a close relationship.</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Strongly Disagree</td>
<td>Strongly Agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>-------------------</td>
<td>---------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36.</td>
<td>The way I feel about myself frequently varies: there are times when I feel extremely good about myself and other times when I see only the bad in me and feel like a total failure.</td>
<td>1:2:3:4:5:6:7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>38.</td>
<td>Even if the person who is closest to me were to leave, I could still “go it alone.”</td>
<td>1:2:3:4:5:6:7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>39.</td>
<td>One must continually work to gain love from another person: that is, love has to be earned.</td>
<td>1:2:3:4:5:6:7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40.</td>
<td>I am very sensitive to the effects of words or actions have on the feelings of other people.</td>
<td>1:2:3:4:5:6:7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>41.</td>
<td>I often blame myself for things I have done or said to someone.</td>
<td>1:2:3:4:5:6:7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>42.</td>
<td>I am very independent person.</td>
<td>1:2:3:4:5:6:7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>43.</td>
<td>I often feel guilty.</td>
<td>1:2:3:4:5:6:7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>44.</td>
<td>I think of myself as a very complex person, one who has “many sides.”</td>
<td>1:2:3:4:5:6:7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>45.</td>
<td>I worry a lot about offending or hurting someone who is close to me.</td>
<td>1:2:3:4:5:6:7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>46.</td>
<td>Anger frightens me.</td>
<td>1:2:3:4:5:6:7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>47.</td>
<td>It is not “who you are,” but “what you have accomplished” that counts.</td>
<td>1:2:3:4:5:6:7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>48.</td>
<td>I feel good about myself whether I succeed or fail.</td>
<td>1:2:3:4:5:6:7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>49.</td>
<td>I can easily put my own feelings and problems aside, and devote my complete attention to the feelings and problems of someone else.</td>
<td>1:2:3:4:5:6:7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50.</td>
<td>If someone I cared about became angry with me, I would feel threatened that he (she) might leave me.</td>
<td>1:2:3:4:5:6:7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>51.</td>
<td>I feel uncomfortable when I am given important responsibilities.</td>
<td>1:2:3:4:5:6:7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>52.</td>
<td>After a fight with a friend, I must make amends as soon as possible.</td>
<td>1:2:3:4:5:6:7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Strongly Disagree</td>
<td>Strongly Agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>-------------------</td>
<td>----------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>53.</td>
<td>I have a difficult time accepting weaknesses in myself.</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>54.</td>
<td>It is more important that I enjoy my work than it is for me to have my work approved.</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>55.</td>
<td>After an argument, I feel very lonely.</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>56.</td>
<td>In my relationships with others, I am very concerned about what they can give to me.</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>57.</td>
<td>I rarely think about my family.</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>58.</td>
<td>Very frequently, my feelings toward someone close to me vary: there are times when I feel completely angry and other times when I feel all-loving towards that person.</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>59.</td>
<td>What I do and say has a very strong impact on those around me.</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60.</td>
<td>I sometimes feel that I am “special.”</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>61.</td>
<td>I grew up in an extremely close family.</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>62.</td>
<td>I am very satisfied with myself and my accomplishments.</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>63.</td>
<td>I want many things from someone I am close to.</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>64.</td>
<td>I tend to be very critical of myself.</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>65.</td>
<td>Being alone doesn’t bother me at all.</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>66.</td>
<td>I very frequently compare myself to standards or goals.</td>
<td>1...2...3...4...5...6...7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX B

BECK DEPRESSION INVENTORY

On this questionnaire are groups of statements. Please read each group of statements carefully. Then pick out the one statement in each group which best describes the way you have been feeling the PAST WEEK, INCLUDING TODAY! Circle the number beside the statement you picked. If several statements in the group seem to apply equally well, circle each one. Be sure to read all the statements in each group before making your choice.

1. 0 I do not feel sad.
1  I feel sad.
2  I am sad all the time and I can't snap out of it.
3  I am so sad or unhappy that I can't stand it.

2. 0 I am not particularly discouraged about the future.
1  I feel discouraged about the future.
2  I feel I have nothing to look forward to.
3  I feel that the future is hopeless and that things cannot improve.

3. 0 I do not feel like a failure.
1  I feel I have failed more than the average person.
2  As I look back on my life, all I can see is a lot of failures.
3  I feel I am a complete failure as a person.

4. 0 I get as much satisfaction out of things as I used to.
1  I don't enjoy things the way I used to.
2  I don't get real satisfaction out of anything anymore.
3  I am dissatisfied or bored with everything.

5. 0 I don't feel particularly guilty.
1  I feel guilty a good part of the time.
2  I feel guilty most of the time.
3  I feel guilty all of the time.

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

7. 0 I don't feel disappointed in myself.
1  I am disappointed in myself.
2  I am disgusted with myself.
3  I hate myself.

8. 0 I don't feel I am any worse than anybody else.
1  I am critical of myself for my weaknesses or mistakes.
2  I blame myself all the time for my faults.
3  I blame myself for everything bad that happens.

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

10. 0 I don't cry any more than usual.
1  I cry more now than I used to.
2  I cry all the time now.
3  I used to be able to cry, but now I can't cry even though I want to.
11. 0 I am no more irritated now than I ever am.
    1 I am not annoyed or irritated more easily than I used to.
    2 I feel irritated all the time now.
    3 I don't get irritated at all by the things that used to irritate me.

12. 0 I have not lost interest in other people.
    1 I am less interested in other people than I used to be.
    2 I have lost most of my interest in other people.
    3 I have lost all of my interest in other people.

13. 0 I make decisions about as well as I ever could.
    1 I put off making decisions more than I used to.
    2 I have greater difficulty in making decisions than before.
    3 I can't make decisions at all anymore.

14. 0 I don't feel I look any worse than I used to.
    1 I am worried that I am looking old or unattractive.
    2 I feel that there are permanent changes in my appearance that make me look unattractive.
    3 I believe that I look ugly.

15. 0 I can work about as well as before.
    1 It takes an extra effort to get started at doing something.
    2 I have to push myself very hard to do anything.
    3 I can't do any work at all.

16. 0 I can sleep as well as usual.
    1 I don't sleep as well as I used to.
    2 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.
    3 I wake up several hours earlier than I used to and cannot get back to sleep.

17. 0 I don't get more tired than usual.
    1 I get tired more easily than I used to.
    2 I get tired from doing almost anything.
    3 I am too tired to do anything.

18. 0 My appetite is no worse than usual.
    1 My appetite is not as good as it used to be.
    2 My appetite is much worse now.
    3 I have no appetite at all anymore.

19. 0 I haven't lost much weight, if any, lately.
    1 I have lost more than 5 pounds.
    2 I have lost more than 10 pounds.
    3 I have lost more than 15 pounds.

   Yes / No I am purposely trying to lose weight by eating less.

20. 0 I am no more worried about my health than usual.
    1 I am worried about physical problems such as aches and pains; or upset stomach; or constipation.
    2 I am very worried about physical problems and it's hard to think of much else.
    3 I am so worried about physical problems that I cannot think about anything else.

21. 0 I have not noticed any recent change in my interest in sex.
    1 I am less interested in sex than I used to be.
    2 I am much less interested in sex now.
    3 I have lost interest in sex completely.
22. 0 have not gained weight above my normal level in the past week.
    1 have probably gained weight (2 or more pounds above my normal level) in the past week.
    2 have definitely gained weight (2 or more pounds above my normal level) in the past week.

23. 0 have not been eating more than usual.
    1 have been eating a little more than usual.
    2 have been eating somewhat more than usual.
    3 have been eating much more than normal.

24. 0 I have not had any difficulty falling asleep at night.
    1 Some nights it has taken me longer than 1/2 hour to fall asleep.
    2 I have had trouble falling asleep every night.

25. 0 I have not been waking up in the middle of the night, or if I have gotten up to go to the bathroom, I have fallen right back asleep.
    1 My sleep has been very restless and disturbed during the night.
    2 I have been waking during the night without being able to get right back to sleep, especially if I've gotten out of bed.

26. 0 I have been waking up at a reasonable hour in the morning.
    1 I have been waking up very early in the morning, but I have been able to get back to sleep.
    2 I have been waking up very early in the morning without being able to go back to sleep, especially if I've gotten out of bed.

27. 0 I have been sleeping no more than I usually do when I feel OK.
    1 I have been sleeping at least one hour more than I usually do when I feel OK.
    2 I have been sleeping at least two hours more than I usually do when I feel OK.
    3 I have been sleeping at least three hours more than I usually do when I feel OK.
    4 I have been sleeping at least four hours more than I usually do when I feel OK.
APPENDIX C

HAMILTON RATING SCALE - DEPRESSION

INTERVIEWER: The questions in bold type are to be read exactly as written. The additional questions are provided for further exploration or clarification as needed. Finally, you may add your own follow-up questions if necessary.

OVERVIEW: I'd like to ask you some questions about the past week, since last (DAY OF WEEK). How have you been feeling since then?

01. DEPRESSED MOOD (Sadness, hopeless, helpless, worthless):

What's your mood been like this past week (compared to when you feel OK)?

- Have you been feeling down or depressed?
- Sad? Hopeless? Helpless? Worthless?
- In the last week, how often have you felt (OWN EQUIVALENT)?
  - Every day? All day?
  - Have you been crying at all?

  0 - absent
  1 - indicated only on questioning
  2 - spontaneously reported verbally
  3 - communicated non-verbally (i.e. facial expression, posture, voice, tendency to weep)
  4 - VIRTUALLY ONLY; this in spontaneous verbal and non-verbal communication

IF SCORRED 1-4 ABOVE, ASK: How long have you been feeling this way? _____ # Weeks

02. WORK AND ACTIVITIES:

IF OUTPATIENT: Have you been working this week (in or out of the home)?
IF NOT: Why not?

IF WORKING: Have you been able to get as much done as you usually do (when you're feeling OK)?

- How have you been spending your time this past week (when not at work)?
- Have you felt interested in doing (THOSE THINGS), or do you feel you have to push yourself to do them?
- Have you stopped doing anything you used to do? IF YES: Why?
- Is there anything you look forward to?

  0 - no difficulty
  1 - thoughts and feelings of incapacity, fatigue or weakness related to activities, work or hobbies
  2 - loss of interest in activity, hobbies or work--by direct report of the patient or indirect in listlessness, indecision and vacillation (feels he has to push self to work or activities)
  3 - decrease in actual time spent in activities or decrease in productivity
  4 - stopped work because of present illness

Item 02
Score:
03. GENITAL SYMPTOMS (such as loss of libido, menstrual disturbances):

How has your interest in sex been this week? (I'm not asking about sexual activity, but about your interest in sex - how much do you think about it?)

- Has there been any change in your interest in sex (from when you were not depressed)?
- Is it something you've thought much about? IF NO: Is that unusual for you?

0 - absent
1 - mild
2 - severe

Score: Item 03

04. SOMATIC SYMPTOMS GASTROINTESTINAL:

How has your appetite been this past week? (What about compared to your usual appetite?)

- Have you had to force yourself to eat?
- Have other people had to urge you to eat?
- Have you had any stomach or intestinal problems? (Have you needed to take anything for that?)

0 - none
1 - loss of appetite but eating without encouragement
2 - difficulty eating without urging; requests or requires laxatives or medication for G.I. symptoms

Score: Item 04

05. LOSS OF WEIGHT:

Have you lost any weight in the past week? IF YES: Was it because of this depression? How much?

- IF NOT SURE: Do you think your clothes are any looser on you?

0 - no weight loss
1 - probable weight loss due to current depression
2 - definite (according to patient) weight loss due to depression

Score: Item 05

06. INSOMNIA EARLY:

I'd like to ask you now about your sleeping during the past week

- Have you had any trouble falling asleep at the beginning of the night? (Right after you go to bed, how long has it been taking you to fall asleep?)
- How many nights this week have you had trouble falling asleep?

0 - no difficulty falling asleep
1 - complains of occasional difficulty falling asleep - i.e., more than 1/2 hour
2 - complains of nightly difficulty falling asleep

Score: Item 06
07. INSOMNIA MIDDLE:
During the past week, have you been waking up in the middle of the night? IF YES: Do you get out of bed? What do you do? (Only to go to the bathroom?)
-When you get back in bed, are you able to fall right back asleep?
-Have you felt your sleeping has been restless or disturbed some nights?

0 - no difficulty
1 - complains of being restless and disturbed during the night
2 - waking during the night--any getting out of bed (except to void)

Item 07 Score:

08. INSOMNIA LATE:
What time have you been waking up in the morning for the last time, this past week?

-IF EARLY: Is that with an alarm clock, or do you just wake up yourself? What time do you usually wake up (that is before you got depressed)?

0 - no difficulty
1 - waking in early hours of morning but goes back to sleep
2 - unable to fall asleep again if gets out of bed

Item 08 Score:

09. SOMATIC SYMPTOMS GENERAL:
How has your energy been this past week?

-IF LOW ENERGY: Have you felt tired? (How much of the time? How bad has it been?)

-This week, have you had any aches or pains? (What about backaches, headaches, or muscle aches?)

-Have you felt any heaviness in your limbs, back or head?

0 - none
1 - heaviness in limbs, back or head. Backache, headache, muscle aches. Loss of energy and fatiguability
2 - any clear-cut symptom

Item 09 Score:

10. FEELINGS OF GUILT:
Have you been especially critical of yourself this past week, feeling you’ve done things wrong, or let others down? IF YES: What have your thoughts been?

-Have you been feeling guilty about anything that you’ve done or not done? What about things that happened a long time ago?

-Have you thought that you’ve brought (THIS DEPRESSION) on yourself in some way?

-Do you feel you’re punished by being sick?

0 - absent
1 - self-reproach, feels he has let people down
2 - ideas of guilt or rumination over past errors or sinful deeds
3 - present illness is a punishment; delusions of guilt
4 - hears accusatory or denunciatory voices and/or experiences, threatening visual hallucinations

Item 10 Score:
11. SUICIDE:

This past week, have you had any thoughts that life is not worth living? What about thinking you'd be better off dead? Have you had thoughts of hurting or killing yourself?

-IF YES: What have you thought about? Have you actually done anything to hurt yourself?

0 - absent
1 - feels life is not worth living
2 - wishes he were dead or any thoughts of possible death to self
3 - suicidal ideas or gestures
4 - attempts at suicide

Score:

12. ANXIETY PSYCHIC:

Have you been feeling especially tense or irritable this past week?
IF YES: Is this more than usual for you?

-Have you been worrying a lot about little things, things you don't ordinarily worry about? IF YES: Like what, for example?

0 - no difficulty
1 - subjective tension and irritability
2 - worrying about minor matters
3 - apprehensive attitude apparent in face or speech
4 - fears expressed without questioning

Score:

13. ANXIETY SOMATIC (physiologic concomitants of anxiety, such as):

GI - dry mouth, gas, indigestion, diarrhea, cramps, belching
CV - heart palpitations, headaches
RESP - hyperventilation, sighing
Having to urinate frequently
Sweating

In this past week, have you had any physical symptoms that sometimes go along with being nervous, like (READ LIST PAUSING AFTER EACH SX FOR REPLY)?

-How much have these things been bothering you in this last week? (How bad have they gotten? How much of the time, or how often, have you had them)

-NOTE: DON'T RATE IF CLEARLY DUE TO MEDICATION (E.G., DRY MOUTH AND IMIPRAMINE)

0 - absent
1 - mild
2 - moderate
3 - severe
4 - incapacitating

Score:
14. HYPOCHONDRIASIS:

In the last week, how much have your thoughts been focused on your physical health or how your body is working (compared to your normal thinking)? (Have you really been preoccupied with this?)

- Do you complain much about how you feel physically?
- Have you found yourself asking for help with things you could really do yourself? IF YES: Like what, for example? How often has that happened?

0 - not present
1 - self-absorption (bodily)
2 - preoccupation with health
3 - frequent complaints, requests for help, etc.
4 - hypochondriacal delusions

Item 14
Score:

15. INSIGHT:

RATING BASED ON OBSERVATION DURING INTERVIEW

0 - acknowledges being depressed and ill OR not currently depressed
1 - acknowledges illness but attributes cause to bad food, climate, overwork, virus, need for rest, etc.
2 - denies being ill

Item 15
Score:

16. RETARDATION (slowness of thought and speech; impaired ability to concentrate; decreased motor activity):

RATING BASED ON OBSERVATION DURING INTERVIEW

0 - normal speech and thought
1 - slight retardation at interview
2 - obvious retardation at interview
3 - interview difficult
4 - complete stupor

Item 16
Score:

17. AGITATION:

RATING BASED ON OBSERVATION DURING INTERVIEW

0 - none
1 - fidgetiness
2 - playing with hands, hair, etc.
3 - moving about, can't sit still
4 - hand-wringing, nail biting, hair pulling, biting of lips

Item 17
Score:

TOTAL 17-ITEM HAMILTON DEPRESSION SCORE:

THIS SCORE DETERMINES RESPONSE

CRITERIA:
Poor = 16 - hi
Partial = 8 - 15
Good = 0 - 7
18. DIURNAL VARIATION TYPE A:

This past week have you been feeling better or worse in the first few hours after waking up, compared to the last few hours before you go to sleep?

-NOTE WHETHER SYMPTOMS ARE WORSE AFTER AWAKENING OR BEFORE SLEEPING. IF NO DIURNAL VARIATION, MARK NONE:

  a - no variation OR not currently depressed
  b - worse after awakening
  c - worse before going to sleep

-IF VARIATION: How much worse do you feel in the (MORNING OR EVENING)? IF UNSURE: A little bit worse or a lot worse? WHEN PRESENT, INDICATE THE SEVERITY OF THE VARIATION:

  0 - none
  1 - mild
  2 - severe

Score:

19. DEPERSONALIZATION AND DEREALIZATION (Such as feelings of unreality and nihilistic ideas)

In the past week, have you ever suddenly had the feeling that everything is unreal, or you’re in a dream, or cut off from other people in some strange way? Any spacey feelings? IF YES: How bad has that been? How often this week has that happened?

  0 - absent
  1 - mild
  2 - moderate
  3 - severe
  4 - incapacitating

Score:

20. PARANOID SYMPTOMS:

This past week, have you felt that anyone was trying to give you a hard time or hurt you?

-What about talking about you behind your back?

-IF YES: Tell me about that.

  0 - none
  1 - suspicious
  2 - ideas of reference
  3 - delusions of reference and persecution

Score:

21. OBSESSIOANAL AND COMPULSIVE SYMPTOMS:

In the past week, have there been things you’ve had to do over and over again, like checking the locks on the doors several times?

IF YES: Can you give me an example?

- Have you had any thoughts that don’t make any sense to you, but that keep running over and over in your mind? IF YES: Can you give me an example?

  0 - absent
  1 - mild
  2 - severe

Score:
22. SOCIAL WITHDRAWAL:

In the last week, have you been as social as usual? IF NO: Tell me which fits you best. (READ DOWN ANCHOR DESCRIPTIONS AND RATE ACCORDINGLY.)

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>interacts with other people as usual</td>
</tr>
<tr>
<td>1</td>
<td>less interested in socializing with others but continues to do so</td>
</tr>
<tr>
<td>2</td>
<td>interacting less with other people in social (optional) situations</td>
</tr>
<tr>
<td>3</td>
<td>interacting less with other people in work or family situations (i.e., where this is necessary)</td>
</tr>
<tr>
<td>4</td>
<td>marked withdrawal from others in family or work situations</td>
</tr>
</tbody>
</table>

23. WEIGHT GAIN:

Have you gained any weight in the last week? IF YES: How much?

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>no weight gain</td>
</tr>
<tr>
<td>1</td>
<td>probable weight gain due to current depression</td>
</tr>
<tr>
<td>2</td>
<td>definite (according to patient) weight gain due to depression</td>
</tr>
</tbody>
</table>

24. APPETITE INCREASE:

In the past week, has your appetite been greater than when you feel well or OK? IF YES: Do you want to eat a little more, somewhat more, or much more than when you feel well or OK?

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>no increase in appetite</td>
</tr>
<tr>
<td>1</td>
<td>wants to eat a little more than usual</td>
</tr>
<tr>
<td>2</td>
<td>wants to eat somewhat more than normal</td>
</tr>
<tr>
<td>3</td>
<td>wants to eat much more than usual</td>
</tr>
</tbody>
</table>

25. INCREASED EATING:

In the past week, have you actually been eating more than when you feel well or OK? IF YES: A little more, somewhat more, or much more than when you feel well or OK?

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>is not eating more than usual</td>
</tr>
<tr>
<td>1</td>
<td>is eating a little more than usual</td>
</tr>
<tr>
<td>2</td>
<td>is eating somewhat more than usual</td>
</tr>
<tr>
<td>3</td>
<td>is eating much more than usual</td>
</tr>
</tbody>
</table>
26. CARBOHYDRATE CRAVING (In relation to total amount of food desired or eaten):

In the last week, have you been craving or eating more starches or sugars? IF YES: Have you been eating more starches or sugars than when you feel well or OK, much more, or irresistibly craving them?

0 - no change in food preference
1 - craving more carbohydrates (starches or sugars) than before
2 - craving much more carbohydrates than before
3 - irresistible craving for sweets or starches

Item 26
Score:

27. HYPERSONMIA (Compare sleep length to euthymic and NOT to hypomanic sleep length. If this is not well established, use 8 hours):

Have you been sleeping more than usual this week? IF YES: How much more? IF NO: What about weekends?

0 - no increase in sleep length
1 - at least 1 hour increase in sleep length
2 - 2+ hour increase
3 - 3+ hour increase
4 - 4+ hour increase

Item 27
Score:

SLEEP LENGTH USED (CIRCLE ONE): EUTHYMIC / 8-HOUR

28. FATIGABILITY (or low energy, or feelings of being heavy, leaden weighed down):

RATINGS BASED ON QUESTION 09 SOMATIC SYMPTOMS GENERAL

0 - does not feel more fatigued than usual
1 - feels more fatigued than usual but this has not impaired function significantly; less frequent than in (2)
2 - more frequent than usual; at least one hour a day; at least three days a week
3 - fatigued much of the time most days
4 - fatigued almost all of the time

Item 28
Score:

29. DIURNAL VARIATION TYPE B:

This week, have you regularly had a slump in your mood or energy in the afternoon or evening?

- IF YES: Is that every day? At what time has the slump usually occurred? How big a slump--would you say that it's generally mild, moderate, or severe?

0 - no
1 - yes, of mild intensity
2 - yes, of moderate intensity
3 - yes, of severe intensity

O'Clock (time slump usually occurs)

Item 29
Score:

TOTAL 8-ITEM
S.A.D. SCORE:
(8 sum Items 22 through 29)

For Database Purposes Only. Rating was completed 0 = at interview, 4 = two weeks on treatment
APPENDIX D

MOOD DISORDERS CLINIC - GENERAL CONSENT

I understand that I am undergoing an assessment procedure in the Mood Disorders Clinic of the Clarke Institute of Psychiatry. As part of this assessment I will be interviewed by members of the clinic staff using several different interviews and questionnaires, and will undergo routine blood tests and other measures which will be useful in assessing and making recommendations for my condition. Some of these measures may be repeated from time to time during my follow-up at the clinic.

The information collected on me and other patients in the clinic as part of this routine assessment will also be useful in understanding more about the nature of mood disorders and may lead to new advances in understanding, treating and preventing this condition, which will help other patients in the future.

I give my permission for the information collected on me over time to be included in future studies. These studies may be published in scientific journals in order to improve the understanding and treatment of mood disorders. My name will not be made available to anyone outside of the immediate staff of the clinic, and I will not be identified in any way, or in any publication or presentation that may arise from the clinic.

The above has been explained to me by and I understand and agree to the use of data collected in this way.

Print Name ___________________________ Date ___________________________

Signature ___________________________ Witness ___________________________

SUPPLEMENTAL CONSENT

I also give my permission to be contacted in the future regarding data I’ve provided during the course of my assessment and treatment in the Mood Disorders Clinic of the Clarke Institute of Psychiatry. If, at that time, I am asked to participate in another study I will be asked to give consent for that particular study.

Signature ___________________________ Witness ___________________________
VITA AUCTORIS

Nicola E. Fitzgerald was born in 1976, in Etobicoke, Ontario. She graduated from T.L. Kennedy Secondary School in 1995. From there she went onto the University of Toronto where she earned an Honours B.Sc. in Psychology in 1999. She is currently a candidate for the Master’s degree in Clinical Psychology at the University of Windsor and hopes to graduate in Fall 2002, after which she will continue with her doctoral studies.