Available online at www.sciencedirect.com
ScienceDirect
ELSEVIER
Clinical Psychology Review 28 (2008) 179 – 198
CLINICAL PSYCHOLOGY REVIEW

The marital context of depression: Research, limitations, and new directions ☆

Uzma S. Rehman [a,*], Jackie Gollan [b], Amanda R. Mortimer [c]

[a] *Department of Psychology, Queen's University, Kingston, Ontario, Canada K7L 4H4*
[b] *Northwestern University, United States*
[c] *California State University, Fresno, United States*

Received 11 April 2007; accepted 20 April 2007

Abstract

Despite improved recognition and treatment of mood disorders, understanding the mechanics of the interpersonal context of depressive disorders remains a vital area of scientific research. This paper reviews the findings on the marital context of depression by critically examining available empirical research on marital communication behaviors of depressed individuals. The specificity of the observed communication behaviors to depression versus marital distress or a general medical or psychiatric condition is examined. The paper also reviews the evidence on gender differences in marital communication of depressed individuals, depending on whether the husband or wife is depressed. The second part of the paper critically reviews three dominant interpersonal theories of depression as they refer to marital relationships. We discuss the need for theoretically-guided research and identify methodological and conceptual limitations of the current empirical literature, while highlighting the need for further theory development and refinement. Future interpersonal theories need to better account for depression epidemiology and the gender difference in rates of depression, as well as incorporate ideas from other theoretical perspectives.
© 2007 Elsevier Ltd. All rights reserved.

Keywords: Marital; Depression; Research

Contents

1. The marital context of depression 181
 1.1. Methods used to study couples' interactions 181
 1.2. How depression affects marital interactions 182
 1.3. Specificity of findings to depression 182
 1.4. Gender differences 186
 1.5. Critique of studies investigating the marital communication of depressed individuals 187
2. Interpersonal theories of depression 188
 2.1. Coyne's interactional theory of depression 188
 2.2. Marital discord model of depression 189

☆ The authors would like to thank Dr. Amy Holtzworth-Munroe for her valuable comments on an earlier version of the manuscript.
* Corresponding author.
E-mail address: rehman@post.queensu.ca (U.S. Rehman).

0272-7358/$ - see front matter © 2007 Elsevier Ltd. All rights reserved.
doi:10.1016/j.cpr.2007.04.007

2.3. Stress generation model of depression . . . 190
2.4. Critique of interpersonal theories . . . 190
2.4.1. Relapse theories or theories of first depressive onset? . . . 190
2.4.2. Which comes first: marital distress or depression? . . . 191
2.4.3. Gender differences in rates of depression. . . . 191
3. Future directions . . . 191
3.1. Conceptual/theoretical issues . . . 191
3.2. Select methodological issues . . . 193
3.2.1. Issues pertaining to study design . . . 193
3.2.2. Developmental stage of the partnership . . . 194
3.2.3. Incorporate affective science and physiological data . . . 194
3.2.4. Longitudinal studies . . . 195
3.3. Conclusion . . . 195
Acknowledgement . . . 195
References . . . 195

A World Health Organization study ranked the category of depressive disorders as the most burdensome disease in the world in terms of disability-adjusted life years among individuals in the middle years of life (Murray & Lopez, 1996). In the United States, an epidemiological survey of individuals between the ages of 15 and 54 years reported a prevalence of 4.9% for current major depressive disorder and 17% for lifetime major depression (Kessler, 1994). Despite improved recognition and treatment of mood disorders, exploring risk factors for depressive disorders remains an important public health concern. Pursuing additional research to learn how interpersonal factors influence the onset and course of depression is critical in promoting treatment strategies.

Evolving intrapersonal conceptualizations of depression, based primarily on cognitive and biological perspectives, have been the dominant zeitgeist in academic psychology (Joiner, Coyne, & Blalock, 1999). Though these approaches elucidated our understanding of the specific markers and phenotypic variations of depression, these conceptualizations have excluded interpersonal perspectives on depression (Joiner et al.). A substantial base of empirical research has documented the pervasive interpersonal difficulties of depressed individuals (see Joiner, 2002, for review). Hammen's research group conducted an impressive series of studies showing that, compared to nondepressed women, depressed women are significantly more likely to generate stressful interpersonal events, which both perpetuate depressed mood and set the stage for depressive relapse (Hammen, 1999). Advances by this research group and others have demonstrated that depression has interpersonal causes, is interpersonally mediated, and that interpersonal factors are linked to depression relapse (e.g., see Joiner, 2002, for review). As broad support exists for social contributions to the onset and regulation of depression, identifying interpersonal mechanisms that precipitate depression onset may reduce depression-related morbidity and mortality.

Given the immense social importance of marital relationships, it is not surprising that researchers have focused closely on marital quality and dynamics in an effort to better understand the interpersonal difficulties of depressed individuals. This line of research has demonstrated that marital difficulties are both precursors to and sequelae of depression (e.g., Hooley & Teasdale, 1989; Paykel et al., 1969). By examining the current state of knowledge of the marital interactions of depressed individuals, we can begin to understand the reciprocal, dynamic, and transactional processes between contextual variables and depression. However, due to space limitations the design, implementation, and efficacy of couple treatments for depression are not covered in this review. For a review of the treatment literature we refer readers to a review by Beach, Fincham, and Katz (1998).

To our knowledge, no comprehensive academic review of marital interactions of depressed individuals has been published. We review peer-reviewed research on behavioral and emotional interactions of individuals with unipolar depressive disorder and depressed mood that are also in a heterosexual marriage. We examine the extent to which data of processes associated with marriage support three prominent interpersonal theories of depression. These research-based theories include: Coyne's (1976) interactional model, the marital discord model of depression (Beach, Sandeen, & O'Leary, 1990), and Hammen's (1991) stress generation model. In addition, we highlight the limitations of these theoretical perspectives and provide suggestions for overcoming some of the methodological and conceptual limitations of past research.

1. The marital context of depression

To understand the interpersonal context of depression researchers have focused on the quality of marital relationships in individuals with depression. This focus is warranted for three primary reasons: the common co-occurrence of depression and marital distress, evidence that interpersonal difficulties in depression are shown more readily in the context of the spousal relationship, and negative outcomes for both marriages and spouses of individuals with depression.

Marital distress and depression frequently co-occur, particularly among women. In their study on psychosocial variables associated with depression, Brown and Harris (1978) found that the lack of a confiding relationship is a vulnerability factor in the development of depression in women. Specifically, the variable 'low intimacy with husband' was associated with depression in women. In 1987, Weissman reported that individuals in unhappy marriages are 25 times more likely than those in happy marriages to be diagnosed with clinical depression. In their study examining the role of humiliating marital events, such as husband infidelity or threat of marital dissolution on wife depressive symptoms, Cano and O'Leary (2000) found that after controlling for levels of marital discord, women who had experienced such severe marital stressors were six times more likely to be diagnosed with a Major Depressive Episode. These findings remained even after controlling for lifetime and family histories of depression. Depressed individuals in unhappy marriages also recover less quickly from a depressive episode (e.g., McLean, Ogston, & Grauer, 1973), and are more likely to experience a relapse of their depressive symptoms (Fiedler, Backenstraβ, Kronmüller, & Mundt, 1998). Overall, disruptions in the marital relationship appear to maintain, exacerbate, and lead to a recurrence of depressive symptoms, especially for women (e.g., Fincham, Beach, Harold, & Osborne, 1997).

Interpersonal perspectives of depression are important as they provide a framework to understand the impact of depression on the lives of people who live with the depressed individual. Studies have shown that living with a depressed spouse has been associated with negative outcomes for the nondepressed spouse. For example, Coyne et al. (1987) conducted a study comparing the burdens and psychological distress reported by individuals living with a currently depressed partner as compared to individuals living with a formerly depressed partner. The results showed that individuals living with a depressed individual reported more burdens and experienced greater psychological distress as compared to controls living with a formerly depressed partner. Moreover, the results showed that 40% of the partners of depressed individuals met the cutoff score for needing psychological intervention, as measured by the Hopkins Symptom Checklist (HSCL-25), compared to the 17% of the partners in the control group. A careful analysis of the behaviors and patterns that distinguish depressed marital interactions from the marital interactions of nondepressed individuals may be relevant to intervention, as it might shed light on processes that are particularly deleterious to relationship health or that maintain depression (Nelson & Beach, 1990).

A specific focus on intimate relationships is also warranted given the evidence suggesting that depressives' interpersonal problems are pronounced during their interactions with significant others, but when depressed individuals interact with strangers their conversations are indistinguishable from nondepressed-stranger interactions (Marcus & Nardone, 1992). Marital interactions of couples with a depressed partner are reliably more negative and less skilled than the marital interactions of nondepressed couples, as detailed below.

1.1. Methods used to study couples' interactions

Self-report and observational coding methodologies are the primary assessment approaches to measure marital interactions. Self-report of communication style, however, varies due to both verbal skill and introspection ability, and self-reports of couple interactions are subject to attributional biases and selective attention (e.g. Bradbury & Fincham, 1990). Ratings may be influenced by "sentiment override" in which distressed individuals attend almost exclusively to their partners' negative behaviors (Weiss, 1980). Another problem pertaining to self-report data has been termed the "glop problem" by Bank, Dishion, Skinner, and Patterson (1990) and others. The glop problem, which is defined as "high correlations among variables obtained using a common method of measurement, usually with just one reporter" (Gottman, 1998; p. 172), occurs when self-report measures of both communication and marital satisfaction are provided by a single reporter. Due to these limitations in self-report data, this review will rely on studies of spousal communication that used observational techniques. To our knowledge, we have included all published studies of observed marital interaction of depressed individuals.

Although there are methodological differences in how couples are studied across marital observation laboratories, the standard observational paradigm involves couples discussing one or two topics for 7–15 min each, with the

videotape of the interaction being viewed for later coding of communication behaviors. This observational length is adequate to make reliable estimations of different behaviors (Heyman, Chaudhry, Treboux, Waters, & Vivian, 2001). Table 1 provides a complete list of published studies that have examined the marital interactions of depressed individuals using observational methods. For select studies in our review, the examination of the marital interaction of depressed individuals was conducted posthoc. For example, the study by Sher, Baucom, and Larus (1990) is primarily a treatment outcome study; however, since they provided data on marital interaction, their data was highly relevant and integrated into this review. Other studies (e.g., Goering, Lancee, & Freeman, 1992; Hooley, 1986; Hooley & Teasdale, 1989) were excluded because, although they have clear implications for understanding the interpersonal context of depressed individuals' lives, they examined only the communication behaviors of the spouses, and did not look at the reciprocal, dynamic interaction between depressed individuals and their spouses that is the defining feature of interpersonal perspectives.

Table 1 distinguishes between research studies using DSM diagnostic criteria for major depression and those relying on depressive symptom measures. The former studies assess depression using standard diagnostic interviews, such as the Schedule of Affective Disorders and Schizophrenia (SADS; Endicott & Spitzer, 1978) (e.g., Biglan et al., 1985) and the Structured Clinical Interview for DSM-III (SCID; Spitzer & Williams, 1984) (e.g., Nelson & Beach, 1990). In contrast, the latter studies used self-report measures, typically, the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) (e.g., Davila et al., 1997). This methodological distinction is important because elevated symptoms on self-reports like the BDI are inadequate for issuance of a DSM-based diagnosis of major depressive disorder. Specifically, research indicates that self-report measures such as the BDI have insufficient specificity and sensitivity to substitute for DSM diagnoses (Kendall, Hollon, Beck, Hammen, & Ingram, 1987). Nonetheless, given the recent evidence supporting a dimensional conceptualization of depression (see review by Flett, Vrendenburg, & Krames, 1997), studies that have only recruited samples with low levels of depressive symptoms are also relevant for understanding the pathogenesis on unipolar mood disorders and have been included in our review.

1.2. How depression affects marital interactions

Overall, the available data suggest that compared to the marital interactions of nondepressed couples, the marital interactions of couples with a depressed partner are characterized by a higher frequency of negative communication behaviors (e.g., blame, withdrawal, verbal aggression) and a lower frequency of positive communication behaviors (e.g., self-disclosure, problem-solving behaviors, smiling, eye contact) (see Table 1 for a summary of the specific positive and negative behaviors that have been examined by researchers). The low frequency of positive behaviors and high frequency of negative behaviors that characterize the marital interactions of depressed individuals are robust findings: they are consistent despite considerable methodological variability across studies. Although all cited studies used observational data, there were significant differences in terms of their inclusion and exclusion criteria, the measures used to screen for depression, whether the husband or wife or both were depressed, and the type of coding system that was used to code the marital behaviors. Below, we examine whether the observed marital communication behaviors of couples with a depressed partner are specific to depression and influenced by whether the husband or wife is depressed. Lastly, we discuss issues pertaining to the coding of marital interactions that may have limited our progress in understanding the marital context of depression.

1.3. Specificity of findings to depression

In a meta-analysis of 26 studies using data from over 3700 women and 2700 men, Whisman (2001) found that marital dissatisfaction accounted for approximately 18% of the variance of wives' depressive symptoms and 14% of husbands' depressive symptoms. Given this strong association between marital distress and depression, studies of randomly selected depressed couples are likely to include many couples who are also experiencing marital distress. Because marital distress and depression covary, group level differences in observed behaviors could be due to depression, marital distress, or the interaction of the two factors. In addition to muddying theoretical waters, the resultant uncertainty of interpretation could have negative clinical implications, as certain patterns of communication may be erroneously attributed to depression when they are actually related to marital distress (Nelson & Beach, 1990).

Table 1
Observational studies of marital interactions of depressed individuals

Study	Sample	Coded behaviors or coding system	Summary of major findings
Studies listed below used diagnostic criteria for depression and all the depressed spouses were wives			
Biglan et al. (1985)	14 MD/WD, 13 MND/WD, and 25 MND/ND couples	LIFE coding system	– D wives engaged in more depressive behavior than their spouses or the spouses in the ND group; D wives engaged in less problem-solving than their husbands; both D wives and their husbands engaged in less self-disclosure than the spouses in the MND/ND group; depressive behavior can reduce spouses' aversive behavior
Bradbury, Beach, Fincham, and Nelson (1996)	20 MD/WD, 13 MD/ND, and 19 MND/ND couples	KPI	– Wives who endorsed higher levels of maladaptive attributions displayed less positive and more negative behavior during the problem-solving discussion. For husbands, there was no significant association between attributions and behavior. These findings were not moderated by depression or marital distress
McCabe and Gotlib (1993)	23 WD and 30 couples w/ neither spouse D	Modified version of the ICS	– In contrast to ND couples, WD couples demonstrated increasingly negative verbal behavior over the course of their interaction
Nelson and Beach (1990)	20 MD/WD, 20 MD/ND, and 20 MND/ND couples	Modified KPI	– Elevated depressive behavior was found only in depressed wives – No support for coercion hypothesis in the D group
Sayers et al. (2001)	16 MD/WD, 21 MD/ND, and 26 MND/ND couples	MICS-IV	– Compared to nondepressed wives, depressed wives reported higher levels of self-blame and hopeless thoughts in response to a marital problem-solving interaction – In general, wife diagnostic status did not impact husband cognitions – Wives' cognitions of hopelessness predicted their levels of depressed and hostile mood at the end of the problem-solving discussion
Schmaling and Jacobson (1990)	32 MD/WD, 34 MND/WD, 36 MD/ND, and 24 MND/ND couples	KPI and LIFE	– Couples in which the wife was D, exhibited more depressive behavior than ND couples; D wives who were MND exhibited characteristics of MD individuals; coercion hypothesis not supported
Schmaling et al. (1991)	24 MD/WD, 38 MND/WD, 14 MD/ND, and 24 MND/ND couples	Developed new coding scheme	– ND women were more likely to summarize the discussion than D women; husband's attempts to engage the interviewer in the discussion were associated with more severe depressive symptoms
Studies listed below used diagnostic criteria for depression and all the depressed spouses were husbands			
Jacob and Krahn (1988)	38 HAlc, 35 HD, and 34 nondepressed/non-alcoholic couples	Abbreviated version of MICS	– The interactions of couples with a depressed husband and couples with an alcoholic husband were significantly less positive (i.e., lower rates of smiling, laughing, humor, and talk) than control couples
Jacob and Leonard (1992)	49 HAlc, 40 HD, and 42 ND/non-alcoholic couples	MICS, base-rate analyses	– Compared to the other groups, less interdependency in the H→W interactions of the D group (less positive and negative reciprocity)
Studies listed below used diagnostic criteria for depression; compared couples with a depressed husband to couples with a depressed wife			
Gotlib and Whiffen (1989)	20 DPI (13 m, 7 f), 14 NDMP (5 m, 9 f), and 18 NDCC couples	Nonverbal codes (e.g., nodding, eye contact)	– Both the depressed and medical group exhibited significantly less smiling, less pleasant facial expression and less aroused facial expressions, and less eye contact than the community control couples
Hinchliffe et al. (1977)	20 DPI (12 f, 8 m) and 20 ND surgical inpatients	IPA and affect codes	– DPI couples display greater expressiveness than control couples – Compared to female DPIs, male DPIs showed greater reductions in expressiveness from acute to recovery phase

(continued on next page)

Table 1 (*continued*)

Study	Sample	Coded behaviors or coding system	Summary of major findings
Studies listed below used diagnostic criteria for depression; compared couples with a depressed husband to couples with a depressed wife			
			– Female DPIs' levels of negative tension did not decrease at recovery – Both male and females DPIs were able to engage in more functional communication with a stranger than their spouse, during acute phase
Hooper, Vaughan, Hinchliffe, and Roberts (1978)	20 DPI (12 f, 8 m) and 20 ND surgical inpatients	Verbal control codes (e.g., interruptions, speech rate); nonverbal control codes (e.g., gaze)	– Contrary to the expectation: D subjects were more likely to make attempts to control the communication during the acute phase, rather than at recovery; also, D subjects were more likely to have a higher speech rate and make greater use of eye gaze when talking to their spouses during the acute phase, rather than recovery
Johnson and Jacob (1997)	50 HD, 41 WD, and 50 ND couples	MICS	– Couples with a D member were less positive than control couples – Depression among wives was associated with more disturbed marital interaction than depression among husbands
Johnson and Jacob (2000)	49 HD, 41 WD, and 50 ND couples	MICS, sequential analyses	– Unique pattern of interaction in couples with a D husband, such that positive communication from the husband resulted in decreased positivity and increased negativity from their wives
Studies listed below used diagnostic criteria for depression. The depressed group consisted of some couples where the husband was depressed and some couples with the wife depressed. Researchers collapsed across gender			
Basco, Prager, Pita, Ramir, and Stephens (1992)	17 couples w/ 1 spouse D; 17 couples in which neither partner was D	CRAC	– Compared to ND couples, D couples received poorer clinician ratings on: overall performance, involvement, verbal aggression, clarity of communication, problem-solving, and attribution of blame
Hautzinger et al. (1982)	13 MD couples, w/ one spouse D; 13 MDND couples	Nonverbal, self-related, partner-related, and neutral	– Interaction between couples without a D partner was positive, supportive, and reciprocal; couples with a D partner showed uneven, negative, and asymmetrical communication
Hinchliffe et al. (1975)	10 DPI and 11 ND surgical inpatients	4 verbal domains (e.g., expressiveness, responsiveness and 2 nonverbal domains (e.g., posture)	– DPIs have higher levels of tension, negative expression, self-preoccupation and diminished nonverbal communication, compared to surgical controls; compared to their spouses, DPIs were more responsive to strangers; after recovery, the DPI began to resemble the control patients in their spousal interactions
Kowalik and Gotlib (1987)	9 couples w/ one D spouse, 10 w/ one spouse w/ OP, and 10 NDCC couples	Three codes: positive, negative, or neutral	– Observer ratings did not discriminate between groups
Linden et al. (1983)	13 MD couples w/ one spouse D and 13 MDND	Developed a new coding system	– Compared to MD nondepressed couples, the communication MD and depressed couples was more uneven and asymmetrical
Studies listed below measured depressive symptoms but did not assess for diagnostic depression			
Cohan and Bradbury (1997)	60 newlywed couples	Affect coded using SPAFF; verbal content using VTCS	– Wives' problem-solving behavior moderated the effects of life events, particularly interpersonal events, on depressive symptoms; wives engaging in low levels of integrative behavior, high negative behavior, and higher levels of sadness experienced increases in depressive symptoms over time. Expressions of anger appeared to protect wives against negative effects of major events by decreasing their depressive symptoms at time 2.
Davila et al. (1997)	172 newlywed couples	SSICS	– Stress generation model supported for wives, but not for husbands

Table 1 (*continued*)

Study	Sample	Coded behaviors or coding system	Summary of major findings
Studies listed below measured depressive symptoms but did not assess for diagnostic depression			
Fletcher and Thomas (2000)	57 married couples	Positivity and negativity ratings	– Cross-sectional analyses showed that depression had a direct and unmediated effect on problem-solving behaviors and on-line cognitions. Longitudinally, more negative interactive behavior at time 1 predicted an increase in wives', but not husbands', depressive symptoms. For both partners, a more positive interpretation of spousal behavior at time 1 was related to lower levels of depression at time 2.
Ruscher and Gotlib (1988)	11 couples w/ one or both partners was experiencing depressive symptoms and 11 ND couples	Gotlib and Kowalik (1985)	– Couples with a D partner had a lower proportion of positive verbal and a higher proportion of negative verbal and nonverbal behavior than ND couples (mostly by the D spouse); D individuals were more likely to have discrepant messages than their spouses or ND couples
Scudlich et al. (1994)	267 couples	Developed from MDR	– Dysphoric husbands, and, to a lesser extent, wives, engaged in various negative conflict strategies and emotions and the absence of constructive strategies, even after controlling for marital satisfaction
Sher et al. (1990)	All MD couples: 14 w/ one D spouse, 12 w/ 1 spouse w/ OP, and 9 MDND	MICS-III	– Couples in the D group were oldest and the D spouses expressed the most negative and least positive communication; after controlling for age, there was only a trend toward significance

MD = maritally distressed; MND = maritally nondistressed; D = depressed; WD = wife depressed; HD = husband depressed; ND = nondepressed; DPI = depressed psychiatric inpatient; NDPI = nondepressed psychiatric inpatient; NDMP = nondepressed medical patients; NDCC = nondepressed community control; OP = other psychopathology; HAlc = husband alcoholic; CRAC = The Clinician Rating of Adult Communication (Basco et al., 1992); ICS = Interaction Coding System (Kowalik & Gotlib, 1987); IPA = Interactional Process Analysis (Mishler & Waxler, 1968); KPI = Ktegorienystem fur Partnerschaftliche Interaktion (Hahlweg, Revenstorf, & Scindler, 1984); LIFE = Living in Familial Environments coding system (Biglan et al., 1985); MICS = Marital Interaction Coding System (Weiss, Hops, & Patterson, 1973); MICS-IV = Marital Interaction Coding System, Version IV (Weiss, 1992); SPAFF = Specific Affect Coding System (Gottman, 1994); VTCS = Verbal tactics Coding Scheme (Sillars, 1982).

As we note in our table, studies that aimed to disentangle the effects of marital distress and depression can be categorized into two groups. The first group consists of studies that have attempted to statistically control for marital distress (Johnson & Jacob, 1997; Ruscher & Gotlib, 1988; Schmaling et al., 1991; Schudlich, Papp, & Cummings, 2004). Taken together, the results of this first group of studies show that when marital distress levels are statistically controlled, depressed and nondepressed couples continue to differ on communication behaviors, but the differences do not remain as strong. Johnson and Jacob (1997) examined marital satisfaction's mediation of the relationship between depression and communication behaviors. Their results showed that depression accounted for a significant proportion of the variance in the scores on congeniality after controlling for marital satisfaction. When marital satisfaction was statistically accounted for, however, the association between depression and negativity no longer was significant.

A second technique that is used to disentangle the effects of marital distress and depression is grouping participants by their presenting severity of depression and marital distress and comparing the phenotype of behavior within and by groups. This second approach has generated studies that support the finding of more negative statements and evaluations in maritally distressed couples with a depressed partner than maritally distressed couples without a depressed partner, although they have methodological limitations. Two of the earliest studies to use this technique (Hautzinger et al., 1982; Linden et al., 1983), compare couple interactions of maritally distressed couples with one depressed partner with maritally distressed and nondepressed couples. Both of these studies showed that, compared to couples who were dealing with marital distress alone, couples who were experiencing both depression and marital distress engaged in more frequent depressogenic communication of self, personal well-being, and their future.

These studies' findings do not address whether the observed behaviors of couples with a depressed partner are unique to the psychological problem of depression, or are instead characteristic of couples in which one partner has a psychological or physical illness. Gotlib and Whiffen (1989) addressed the issue of specificity by comparing depressed marital interactions in psychiatric patients to marital interactions in two comparison groups: nondepressed medical patients and nondepressed community comparison subjects. Their analyses of the behaviors exhibited during marital interaction showed that the depressed and medical patients did not differ significantly from each other in terms of

frequency of smiling, eye contact, and pleasant facial expressions. Moreover, both groups rated their marriages as less satisfactory than those of the nondepressed community sample. Problematic interpersonal behavior in both depressed and medical patients suggests that the behaviors that differentiated the couples in these groups from the couples in the community sample may be nonspecific behavioral markers of interaction where at least one partner is experiencing a negative life circumstance. However, these results need to be interpreted cautiously for two reasons. First, due to the relatively small number of interactional behaviors coded in this investigation, the data provide limited understanding of the transactional interchange between partners. Second, although the two groups did not differ in the behaviors analyzed during the interaction, the couples in the depressed group endorsed more negative feelings post-interaction than the couples in the medical group, as well as rated their partners' behavior more negatively. This suggests group differences that were not tapped by the observational measures employed.

The issue of specificity was also examined by Jacob and Leonard (1992), who compared the marital interactions of three groups of men: alcoholic, depressed, and nondistressed. The focus of this study was on interactional patterns rather than frequencies of specific behaviors. Results showed that couples with a depressed husband could be reliably distinguished from couples with an alcoholic husband in terms of interactional sequencing. For example, compared to couples with an alcoholic husband, the marital interactions of couples with depressed husbands were characterized by less interdependency and less negative reciprocity.

1.4. Gender differences

Most studies examining the interaction patterns of couples with a depressed partner have focused on depressed wives (e.g., Biglan et al., 1985; Nelson & Beach, 1990). In part, this focus is a result of the greater incidence of depression among women (e.g., Nolen-Hoeksema, 1987). However, it is unclear whether the behaviors and patterns exhibited by dyads with a depressed wife generalize to dyads with a depressed husband. There are many reasons to hypothesize that the types of behaviors and patterns displayed may depend on whether the depressed partner is male or female. First, studies done with nondepressed subjects have documented gender differences in communication patterns and interpretations of affectively relevant messages. For example, there is evidence indicating that women are more emotionally expressive (Flaherty & Richman, 1989) and report higher levels of both positive and negative emotions (Ben-Zur & Zeidner, 1988; Fujita, Diener, & Sandvik, 1991). Second, there is evidence that women are more likely to display symptoms of depression and to seek help for mild levels of depression (Hammen & Padesky, 1977). In light of the evidence that men who express depressive symptoms are evaluated more negatively, compared to women expressing depressive symptoms (Hammen & Peters, 1977), it is possible that men inhibit expression of depressive symptoms during social interactions. Lastly, data suggest that women may have a greater interpersonal orientation toward, and responsibility for, the marital relationship (Nolen-Hoeksema & Girgus, 1994). As a result, the proportional effect of depression reported by the wife may exert greater negative impact on marital communication and the marital relationship itself than that reported by the husband. Evidence for this hypothesis has emerged from a study conducted by Jacob and Johnson (1997), which reported that families with a depressed mother display greater negativity and less positivity than families with a depressed father.

As mentioned above, many studies of marital communication of depressed individuals have only included depressed wives. A few studies have reported results either only for depressed husbands (e.g., Jacob & Leonard, 1992), or for both depressed husbands and wives after collapsing across gender (Hautzinger et al., 1982; Kowalik & Gotlib, 1987). All three of these designs make it impossible to comment on gender differences. Thus, we concentrate on reviewing studies that have systematically examined gender differences in marital communication of couples with a depressed husband to those of couples with a depressed wife.

The first such study was conducted by Gotlib and Whiffen (1989). The researchers compared marital interaction behaviors of 7 depressed females and 13 depressed males and found no evidence for gender differences in the actual behaviors displayed during the marital interactions. The only gender difference that emerged was that depressed women reported more negative mood following their interactions with their spouses as compared to depressed men. This finding suggests that "depressed women react differently than do depressed men to topographically similar interactions" (p. 29). These results need to be interpreted with caution as the study's sample size was small and there may not have been adequate power to reveal gender differences in marital interaction behaviors.

Johnson and Jacob (1997) examined gender differences in marital communication in 50 couples with a depressed husband, 41 couples with a depressed wife, and 50 couples with no depression. Couples with a depressed wife were

less positive than couples with a depressed husband. It is worth noting that this outcome emerged despite higher levels of depression among the male depressives within the sample, suggesting that depressed females' marital behaviors are more impacted by their depression than are males. These findings appear consistent with previous literature stating that women are more expressive of negative affect and depression than men (Hammen & Padesky, 1977).

In a later study, Johnson and Jacob (2000) compared sequential patterns of communication of couples with a depressed husband, couples with a depressed wife, and couples without a depressed partner. There were no clear patterns of sequential interaction that distinguished between couples with a depressed wife and couples without a depressed partner. In contrast, the researchers found that positive communication from depressed husbands resulted in decreased positivity and increased negativity from their wives.

Contrary to the result of Johnson and Jacob's (1997) study, Schudlich et al. (2004) found that husbands' dysphoria was related to greater disturbances in marital communication, as compared to wives' dysphoria. These findings emerged despite the fact that wives' levels of dysphoria were significantly higher than husbands' levels of dysphoria. The authors take this pattern of results to suggest that husbands' problems may be more likely to spill over into the marriage, as compared to wives' problems.

The numerous methodological differences in the studies may be contributing to these discrepant findings. For example, both of Johnson and Jacob's studies (1997, 2000) included individuals who met diagnostic criteria for depression. In contrast, the study by Schudlich et al. (2004) included subjects who endorsed subclinical levels of depressed mood. Further research is needed to clarify if there are gender differences in the marital communication of depressed individuals and to elucidate the nature of these differences.

1.5. Critique of studies investigating the marital communication of depressed individuals

Issues pertaining to the coding of marital interactions need to continue to be refined in future research. As the technology for coding and analyzing marital interactions has become more sophisticated, marital researchers have been able to move beyond base-rate comparisons to examining patterns of communication by mapping out the interdependencies of behaviors within couples using microanalytic coding systems and sequential analyses. Through the use of such coding systems and analytic tools, communication researchers can identify a spouse's behavior that precedes and predicts acceleration and deceleration of consequent partner behavior (Jacob & Leonard, 1992) and provide a much richer account of how behavior changes over time.

Another coding issue that needs to be considered more carefully in future research is the topic of discussion within marital interactions. Studies of marital interactions of depressed individuals have demonstrated that there is situational specificity in depressive behavior, suggesting the need to assess marital communication in different types of discussions (Schmaling & Jacobson, 1990). By far, most studies of marital interaction ask couples to discuss problem areas in the relationship. Even within the context of conflict discussions, most of the topics that are chosen are high-conflict topics. Schudlich et al. (2004) have recommended examining the marital interactions of depressed individuals during discussion of relatively minor sources of disagreement. As the researchers suggest, it is possible that group differences in observed behavior may be even greater during such discussions. Other topics that need to be explored in future research are social support and intimacy discussions (note that in Davila et al., 1997, participating couples were asked to engage in social support discussions). It is conceivable that in the context of such discussions behaviors emerge that are not evoked in conflict discussions or that occur in higher or lower frequency than in the context of conflict discussions. For example, it may be that depressed individuals are even more likely to withdraw during a discussion of intimacy as compared to a conflict discussion.

The studies reviewed in the previous section further the essential work required to understand the marital context of depression. However, in most of these studies, researchers have taken codes that have reliably distinguished between distressed and nondistressed couples to examine whether these codes are also able to distinguish between couples with a depressed partner to couples without a depressed partner. Exceptions to this approach are illustrated by Ruscher and Gotlib (1988) who compared the discrepancy between verbal and nonverbal contents, a hypothesis generated directly from Coyne's (1976) interactional theory of depression. Similarly, Biglan et al. (1985) and Nelson and Beach (1990) have conducted sequential analyses to test whether depressive behavior emitted by a partner suppresses the spouse's aggressive behavior, as would be predicted by Patterson's (1982) coercion hypothesis. Unfortunately, however, these investigations are the exceptions and not the rule. The majority of observational studies with depressed couples have failed to develop and investigate

theoretically relevant codes for depression. To advance substantially our understanding of the marital context of depression, observational studies need to be grounded in a solid theoretical framework and the choice of the coding system should link directly to the theoretical question being investigated, rather than being chosen based on convenience.

2. Interpersonal theories of depression

In this section of the paper, we examine three prominent interpersonal theories of depression, examine their limitations, and discuss how these theories can guide future investigations of the marital context of depression. In contrast to intrapersonal models of depression (e.g., cognitive and biological models), interpersonal perspectives are in their infancy stages and are currently less formalized. However, they do provide frameworks that can be used to conceptualize and illuminate the role of marital processes in depression. The interpersonal theories that have been included have fundamental similarities: (a) They are all based on the premise that contextual factors (e.g., marital quality) are key in understanding depressive disorders; (b) they view the relationship between social interactions and depression as dynamic and unfolding over time; (c) they share a common focus on functionality of behavior; and, (d) they have all spurred significant empirical research in detailing interpersonal processes in depression. Despite these similarities, they highlight and emphasize different theoretical constructs, thus meriting individual attention.

2.1. Coyne's interactional theory of depression

Coyne’s influential 1976 model postulated that the interpersonal behaviors of depressed individuals elicit rejection from others. When an individual is depressed, s/he seeks reassurance and support from others in the environment. Initially, individuals in the environment yield to these demands, but as time progresses and the demands continue, the depressive’s behavior produces increasing hostility and resentment in others. Such feelings subsequently lead to guilt because the depressive person’s distress is obvious. In an attempt to inhibit hostility, those surrounding the depressed person respond to them with false reassurance and support, but are only partially successful in providing support. The depressed individual senses the discrepancy between the positive verbal statements and the negative nonverbal behaviors addressed to them, which causes them to feel confused and rejected. The depressed individual displays increasing negative symptoms in an attempt to regain the reassurance and support they require. These behaviors lead to further alienation, until eventually those surrounding the depressed person are forced to withdraw from them (Alloy, Fedderly, Kennedy-Moore, & Cohan, 1998; Coyne, 1976; Ruscher & Gotlib, 1988).

This theory was originally conceived almost 30 years ago, and it has received considerable empirical attention. Numerous studies have investigated whether depressed individuals elicit interpersonal rejection from others by examining their interactions with strangers, friends, and romantic partners. The research findings are inconsistent: many studies have demonstrated that depressed individuals do elicit rejection from others, though other studies have failed to replicate these results (for example, see Coyne, 1976, and Strack & Coyne, 1983, for confirming evidence; see Gotlib & Robinson, 1982; King & Heller, 1984, and Rosenblatt & Greenberg, 1991, for disconfirming results). The strongest and most consistent support for Coyne’s theory emerges when this theory is tested in the context of significant interpersonal relationships, such as romantic relationships, rather than in interactions with strangers. This indicates that the interpersonal dysfunction of depressed individuals is most likely manifest in the context of long-term and significant relationships (for review, see Marcus & Nardone, 1992). For the purposes of this review, we will focus on studies that have tested this theory in the context of the marital relationship.

The first part of Coyne’s theory postulates that depressed individuals are more likely to seek reassurance and support from their partners, as compared to nondepressed individuals. Data from the marital interaction literature provide both direct and indirect support for this hypothesis. Compared to nondepressed individuals, depressed individuals are more likely to share dysphoric feelings and negative self-evaluations with their spouses (Hautzinger et al., 1982). There is also evidence indicating that depressed individuals may be most expressive and engaged with their spouses when they are discussing negative issues (Hinchliffe, Vaughan, Hooper, & Roberts, 1977) and may be excessively self-preoccupied, making them less able to respond to their spouse’s needs (Hinchliffe et al., 1975).

Coyne’s theory also predicts that depressed individuals induce negative affect in others. In a pioneering study examining this question, Coyne et al. (1987) compared the psychological burden experienced by 42 adults who lived with a depressed partner to the experiences of a comparison group of 23 adults who lived with a partner who was not

depressed at the time of the study but had previously sought either in- or outpatient treatment for depression. Respondents who were living with a depressed partner endorsed high levels of psychological distress and up to 40% met criterion for referral for therapeutic intervention. Only 17% of the comparison group met this cutoff score. Krantz and Moos (1987) also conducted a study that focused on the functioning of spouses of depressed patients. The results of this longitudinal investigation showed that, compared to the spouses of nondepressed individuals, spouses of depressed individuals reported more problems on a variety of indices of social and family functioning.

2.2. Marital discord model of depression

The marital discord model of depression, advanced by Beach et al. (1990), also posits a longitudinal relationship between marital dissatisfaction and depression. However, they suggest that marital distress leads to depression by reducing available support while increasing levels of stress and hostility. According to Beach et al., marital support is decreased through reductions in couple cohesion, perceived and actual coping assistance, self-esteem support, spousal dependability, intimacy, and acceptance of emotional expression. The model also identifies five facets of the marital relationship that can increase levels of stress and thus contribute to depressive symptoms: verbal and physical aggression, threats of separation and divorce, severe spousal denigration, criticism or blame, severe disruption of scripted routines, and major idiosyncratic marital stressors.

Observations of the marital interactions of depressed individuals provide indirect evidence for this model (e.g., McCabe & Gotlib, 1993). Across studies, the marital interactions of depressed individuals are characterized by higher levels of negative behaviors, such as hostility and criticism, and lower levels of positive behaviors, such as validation and support than those of nondepressed spouses (see review above). Given the correlational nature of these studies, it is impossible to comment on whether the increased negativity and decreased positivity evidenced in these interactions contributed to the development of depression. It is equally plausible that the behaviors are a result of preexisting depression.

The marital discord model of depression has been tested in a series of longitudinal studies examining temporal associations between marital distress and depression. The results of these investigations have been inconsistent. One group of studies has found that marital distress at time one predicts depressive symptoms at a later time (e.g., Burns, Sayers, & Moras, 1994; Whisman & Bruce, 1999). Other studies have found support for the role of depressive symptoms in reducing marital satisfaction over time (e.g., Fincham et al., 1997). The differences in the findings are not surprising in light of significant methodological differences across the studies. For example, some studies have used newlywed couples (e.g., Fincham et al.), while other studies included couples married for a longer period (e.g., Whisman & Bruce, 1999). Also, studies have varied in terms of the length of follow-up period and the measurement of depression (e.g., diagnostic depression versus self-reported depressive symptoms). Across studies, it appears that the marital dissatisfaction to depression pathway may be more fitting for women, whereas the depression to marital dissatisfaction pathway may fit the data better for men (see review by Whisman, 2001).

The longitudinal data cited above do not inform us about the mechanisms by which the marital dissatisfaction experienced by wives is translated into increased depressive symptoms. The marital discord model predicts that increased marital stress and decreased spousal support are the mediators of this relationship. Such mediational hypotheses need to be directly tested in future longitudinal work. Some recent findings emerging from the marital support literature can help further refine the marital discord model of depression and point to mechanisms that should be investigated in future work.

In support of a more contextualist perspective, there is evidence indicating that a more sophisticated conceptualization of social support may be needed, one that recognizes that there are considerable individual differences in what constitutes supportive behavior (Beach et al., 1998). Researchers examining marital support behaviors are increasingly realizing that perceived support is not always highly correlated with observed support, and that perceived support is linked to psychological variables of interest (Beach et al., 1998). Why do actual support transactions not have stress-buffering effects (Cohen & Wills, 1985) while perceived support consistently demonstrates these effects (e.g., Sarason, Sarason, & Gurung, 1997)? A study conducted by Bolger, Zuckerman, and Kessler (2000) investigated this question and revealed some interesting answers. The study participants consisted of couples where one partner was undergoing a major stressor. The researchers asked the individuals experiencing the stressor to rate the level of emotional support they received from their partners and asked the respective partners to rate the level of emotional support that they provided. The results of the study indicated that providing support was associated with decreased depressive symptoms, whereas receiving support was associated with increased depressive symptoms in the

recipient, leading the researchers to suggest that "the most beneficial support is that which is invisible to the recipient" (p. 958), possibly because it does not compromise the recipient's self-esteem.

2.3. Stress generation model of depression

Hammen's (1991) stress generation model of depression poses the hypothesis that the distinction between diathesis and stress may be unclear, and depressed individuals may inadvertently make behavioral choices that increase the subjective and objective indices of stress. The increase of stress partially explains the demoralization and depressogenic response of some individuals. Hammen and colleagues make a distinction between the effects of independent and dependent stressful events. Special significance is assigned to stressful events that are interpersonal in nature, as the theory proposes that depressed individuals may be particularly likely to create interpersonal stress in their lives.

The stress generation model has clear implications for understanding the marital context of depression, as evidenced in a study conducted by Davila et al. (1997). The results found clear support for the stress generation model for wives, but not for husbands: among wives, initial depressive symptoms were associated both with expecting husbands to be negative and critical during a social support discussion and with behaving negatively when receiving social support and when providing it to their partners. Importantly, this set of behaviors was associated with an increase in marital distress over the one-year period and this increased marital distress was associated with a further increase in depressive symptoms.

Jones, Beach and Forehand (2001) tested the stress generation model in a sample of intact community families. Similar to the study by Davila et al. (1997), the authors examined gender differences in stress generation by testing the model separately for men and women. Consistent with the study by Davila et al., Jones and colleagues found support for the role of marital processes in stress generation. Women who endorsed depressive symptoms were also likely to report greater stress in their relationship and the perceived marital stress, in turn, predicted an increase in depressive symptoms. These results emerged after controlling for initial levels of wife-reported marital stress. Also consistent with the study by Davila et al., the researchers failed to find support for stress generation in husbands: husbands' depressive symptoms were not longitudinally related to their self-reported marital distress.

Empirical support for negative self-verification strivings in depressed individuals also offers support for the stress generation model. According to Swann's (1983) self-verification theory, people seek feedback from others that confirms their own self-view. The theory predicts that individuals with low self-esteem seek out negative feedback from others in their environment, a process that has been termed 'negative self-verification'. Katz and Beach (1997) examined the effects of partner verification on marital satisfaction and depressive symptoms. Their findings replicated previous results that show that self-verifying feedback has a positive effect on relationship adjustment; more interestingly, though, the data suggest that when the negative self-views held by depressed individuals are validated by their partners, it can lead to an increase in depressive symptoms. This has important implications for the study of marital interaction of depressed individuals: behaviors that appear positive (e.g., validation) may actually contribute to depressive symptoms, while behaviors that may appear negative (e.g., disagreeing with partner, refusing to agree with his/her perspective) may be linked to reductions in depressive symptoms of the depressed spouse. At a broader level, this example illustrates that coding behaviors simply as 'positive' and 'negative' in a theoretical vacuum, without considering the function of the behaviors, may lead to erroneous conclusions about marital behaviors that are associated with depression or elevated depressive symptoms.

2.4. Critique of interpersonal theories

Interpersonal theories of depression have significant limitations that need to be addressed before they can make a real contribution to our understanding of the phenomenon of depression. Some of the major limitations are described below.

2.4.1. Relapse theories or theories of first depressive onset?

One common limitation of the above theories is that they lack clarity regarding the explanatory mechanisms of the first onset of depression. Coyne's (1976) model discusses how the interpersonal behaviors of depressed individuals and others' responses to them maintain and exacerbate depressive symptoms, but does not outline the mechanisms by which the depression first occurs. Similarly, Hammen's (1991) stress generation framework posits that depressed individuals generate interpersonal stress that translates into increased risk of depression, but remains undefined on the

mechanisms of first onset of depression. These theories are best conceptualized as relapse theories of depression. A focus on relapse is clearly warranted given that depression is a highly recurrent phenomenon (Angst, 1986). There is also evidence indicating that the factors involved in first onset of depression may be distinct from factors involved in recurrence (Post, 1992). This evidence suggests that a focus on factors involved in relapse of depression is not necessarily a shortcoming, as long as interpersonal theories are presented as theories of relapse and not as theories of onset.

2.4.2. Which comes first: marital distress or depression?

In explaining the link between depression and marital distress, each of the above theories gives causal primacy to either marital distress or depression. For example, in the marital discord model of depression proposed by Beach et al. (1990), marital distress leads to depression, whereas in Coyne's interactional model (1976) and Hammen's stress generation model (1991) depression is seen to set the stage for difficulties in the interpersonal domain that, in turn, maintain and exacerbate depressive symptoms. Researchers examining the relationship between marital dysfunction and depression are beginning to question whether determining the temporal primacy of depression or marital dysfunction is the most relevant or important question to ask. Rather, they are suggesting a shift in the focus of research to examine the reciprocal influences of depression and marital distress. For example, Davila (2001) states, "It is time to abandon the idea of determining whether marital dysfunction is a better predictor of depression or vice versa and to focus instead on the ongoing association of the two over time and the mechanism of this association" (p.73). There is evidence for a 'doubly developmental perspective', as illustrated by a longitudinal study conducted by Kurdek (1998), that showed that marital dissatisfaction and depression exert reciprocal influences on one another. One reason that such multi-wave designs may not have been widely used in the past is that the statistical challenges associated with analyzing such data were formidable. However, in light of new statistical techniques for analyzing multi-wave data, such as hierarchical linear modeling and growth curve analysis, it is becoming possible to conduct within-subject analyses of the dynamic association of two variables over time. Interested readers are encouraged to consult Karney (2001) for a more detailed and thorough exposition on statistical models that can capture the dynamic relationship between marital distress and depression.

2.4.3. Gender differences in rates of depression

A well-established epidemiological finding about depression that is not adequately addressed by interpersonal theories is the gender difference in the prevalence of the disorder. The prevalence rate of depression among women is approximately twice that of men (Nolen-Hoeksema, 1987). Although Hammen's model is often presented as a model that accounts for depression in women (e.g., Hammen, 2003), the theory does not offer any explanations as to why women are more likely to generate interpersonal stress than men. Most of the empirical tests of this model have been conducted on women (e.g., Davila, Hammen, Burge, Paley, & Daley, 1995; Hammen, 1991) or have collapsed across men and women (e.g., Hammen & Brennan, 2001). In one of the few studies that tested this model separately for husbands and wives, no evidence for the stress generation hypothesis was found for husbands, whereas the data supported the model for the wives (Davila et al., 1997). To remain relevant, interpersonal theories of depression must address the gender difference in depression prevalence. In particular, we need to address why interpersonal factors play a different role in men and women's depression and to elucidate what specific interpersonal processes may be particularly relevant for women versus men.

3. Future directions

If interpersonal perspectives in the study of depression are going to make a meaningful contribution to our understanding of the etiology and recurrence of depression, certain conceptual and methodological issues need to be addressed in future work.

3.1. Conceptual/theoretical issues

Interpersonal theories should integrate knowledge from other perspectives on depression. Depression is a complex disorder with multiple etiological pathways (Kendler et al., 1995). It is unlikely that interpersonal perspectives alone can sufficiently explain the heterogeneous presentation and course of depression. Toward this end, integrative

frameworks that combine interpersonal and intrapersonal perspectives may have greater explanatory power than when either perspective is considered alone. The theoretical work by Joiner and Metalsky (1995) provide an excellent example of such an integrative framework. Their work incorporates both self-verification theory and Coyne's (1976) interactional model of depression. This integrated perspective argues that, consistent with Coyne's perspective, individuals engage in reassurance-seeking in pursuit of affectively pleasing information. However, this leaves them cognitively dissatisfied and prompts them to engage in self-verification strivings. Joiner and Metalsky found support for the idea that depressed individuals engaged in both behaviors and that both behaviors are detrimental to interpersonal relationships. This work is an important first step. Below, we offer examples of how the integration of interpersonal perspectives with cognitive, neurobiological, developmental, and life stress perspectives on depression offers promising avenues for future work in understanding the marital context of depression.

Integration of interpersonal and cognitive models of depression provides a particularly useful starting point for work on predictors of depression informed by both cognitive and social models of depression. Current perspectives indicate that a marital discord model of depression that accounts for marital attributions may be able to elucidate the mechanisms by which marital processes impact depressive symptoms. The effects of attributions of partner behavior on marital satisfaction have been investigated by numerous studies. Bradbury and Fincham (1990) conducted a comprehensive review of the literature on marital attributions and concluded that negative attributions by one spouse are cross-sectionally and longitudinally associated with marital dissatisfaction. In their meta-analytic review examining whether contagion of depression occurs, Joiner and Katz (1999) posited that spousal attributions are the mechanism by which depressed individuals induce depressive symptoms in their partners. Joiner and Katz predicted that a spouse's negative attributions about his/her partner's depression, marital distress, or both, may serve as a risk factor for his/her own depression. For example, it is possible that if the spouse of a depressed individual views his/her partner's depression to be the result of stable dispositional characteristics, he/she is more likely to experience depressive symptoms. Joiner and Katz also suggested that the attribution-depression link may lead partners of depressed individuals to evaluate themselves negatively for having a partner who is depressed. In their study designed to examine cognitive vulnerability factors that might explain the link between marital distress and depression, Sayers, Kohn, Fresco, Bellack, and Sarwer (2001) found that partner-blame and hopelessness cognitions mediated the association between wives' levels of marital distress and their mood following a conflict discussion with their partners.

Coyne (1999) cautions against the integration of cognitive and interpersonal theories due to concerns that such attempts are reductionistic and give primacy to cognitions over behavior. Although this warning may be warranted, we believe that attempts at integration are increasingly attentive to the dynamic association between thoughts and behavior, and have moved beyond the presumption that only cognitions can impact subsequent behavior rather than vice versa. In a truly transactional model, cognitions and behavior will be seen to have reciprocal influences on each other.

Current perspectives recognize that the neurobiology of stress should be considered in understanding the substrates of onset of depression. Biological research has started to define the neuroarchitecture of biological systems in depression in ways that may be relevant to a refined assessment of depression in the context of interpersonal and marital distress. One such opportunity would be to strengthen the research using biological measurement of stress reactivity (e.g., salivary cortisol changes measured before, during, and after observational session using the focal point of marital conflict) to see how biological reactivity is related to marital interaction. From this work, we could learn more of the link between stress and depression in marriage, and perhaps more importantly, provide initial data from which we can modify clinical interventions (e.g., helping the partner who demonstrates more stress response with coping skills to offset the biological impact of these discussions). In this manner, we start to develop methods of integrating data regarding function (or dysfunction) of specific neurobiological systems into current interpersonal perspectives of marital function. To extend this point further, it may also be possible to demonstrate an association between the basic research on the irregularities of serotonin (5-hydroxytryptamine, 5-HT) in frontal and limbic neural circuits as risk factors for depression in distressed marriages. We propose that this diathesis-stress perspective may illustrate that a detrimental effect on the normative function of the 5-HT, when, as is found in the basic stress research, individuals are chronically overexposed to personally relevant and intensely-experienced stress. Our review of the research suggests that there is limited study of the neurobiological and neuroendocrine correlates of depression unique to distressed relationships, and that the information gleaned from the integration of this approach would bring to bear the important basic research from the stress literature.

Research examining the role of interpersonal factors in the onset, maintenance, and recurrence of depression can be enriched by integrating theory and data from life events models of depression.

A set of robust findings have emerged over the years linking life stressors to the onset of depressive symptomatology. First, although the magnitude of the association varies across studies depending on how life events are measured, there is a consistent association between exposure to stressful life events and the subsequent onset of episodes of major depression (Monroe & Hadjiyannakis, 2001). Second, there is evidence of a dose–response relationship, such that severe events are more strongly associated with depression than non-severe events (Kessler, 1997).

Increasingly, marital researchers are also beginning to recognize the role of negative life events in dyadic functioning. Cohan and Bradbury (1997) outline three lines of research that link life events, depression, and marriage. First, there are data suggesting that higher levels of life events are related to decreases in marital satisfaction. Second, research findings suggest that life events are associated with marital communication. For example, in a study examining marital functioning during the transition to parenthood, Belsky, Spanier, and Rovine (1983) found that affectional displays between spouses declined 1–3 months after the birth of a child and this decline was related to decrease in marital satisfaction. Lastly, there are data to suggest that the onset or exacerbation of depressive symptoms is related not only to one's own life events but also to one's spouse's life events. The depressive symptoms, in turn, affect marital functioning.

There are meaningful ways in which the data from marital observations of depressed individuals can be incorporated into the study of life events and depression. To our knowledge, there is only one study that has simultaneously examined the influences of negative life events and marital communication on depression and dyadic functioning using a longitudinal design (Cohan & Bradbury, 1997). The results of this study revealed important and surprising results: The researchers found that spouses' problem-solving behaviors moderated, but did not mediate, the association between life events and individual and dyadic adjustment. Importantly, the results showed that the effects of negative life events were not uniformly detrimental across couples; in fact, when wives' verbal content was constructive and they expressed anger during the marital interaction, their marital satisfaction increased and depressive symptoms decreased. Wives who engaged in these behaviors appeared to emerge strengthened, or were less negatively affected by, negative life events. Conversely, negative verbal content and expressions of sadness predicted an increased vulnerability to negative life events. It is important that future research build upon this seminal study. The findings of this study can be refined and developed by using contextual measures of life events. In general, stronger associations between stress and depression have been found in studies using 'contextual' measures, rather than life event checklists (Kessler, 1997). We would also recommend examining the association between these variables across long follow-up periods with a greater number of assessment periods. Finally, it would be useful to examine the interplay between these variables as couples negotiated a specific type of life event (e.g., role transition for new parents).

Interpersonal theories should incorporate perspectives that aim to explain the gender difference in the incidence of depression. Future research in the interpersonal domain needs to address the different prevalence rates of depression among men and women. Based on a review of the literature, Nolen-Hoeksema (2002) suggests that two interpersonal psychological factors that contribute to the gender difference in depression are greater interpersonal orientation and increased rumination in women. Given that the gender difference in depression rates emerges in adolescence and the increased risk for women continues through young adulthood, it would be fruitful to examine the interpersonal challenges that are associated with the developmental transition from mid-adolescence through young adulthood (Nolen-Hoeksema & Girgus, 1994), specifically for females. To examine the role of interpersonal factors in the onset of depression, researchers need to conduct studies during adolescence before the onset of the first episode of depression. In the context of marital relations, it would be useful to examine to what degree interpersonal orientation to marriage and family, rumination, and reassurance-seeking from partner play a role in recurrence of depression or the length of a depressive episode.

3.2. Select methodological issues

3.2.1. Issues pertaining to study design

A fundamental controversy in the depression literature is whether the underlying structure of depression is more consistent with a dimensional or a taxonic representation. This distinction has significant methodological implications. For example, artificially dichotomizing a continuous variable can significantly reduce the power of a study (e.g., Maxwell, Delaney, & Dill, 1984). Based on a comprehensive review of the literature, Flett et al. (1997) concluded that the bulk of the evidence supported a dimensional perspective. Based on this evidence, we recommend that future

studies not be limited to examining specific levels of depression, but rather recruit participants with a wide range of depressive symptoms. Such work is more broadly relevant, and is highly informative in improving public health awareness and treatment development.

A second design concern is how to address the symptomatic and temporal confounds between marital distress and depression. Typically, the two ways that these issues have been addressed is to either deliberately choose groups based on the presence and absence of depression and/or marital distress or to statistically control for marital distress. Both of these approaches have significant limitations. Specifically, given the high comorbidity between marital distress and depression, when groups are selected that are maritally distressed/nondepressed or depressed/maritally nondistressed the generalizability of findings may be compromised because the two problems frequently co-occur. The issue of statistical control also poses difficulty, particularly in terms of drawing inferences from the results (for a detailed discussion of the problems associated with statistically controlling for variables, see Christenfeld, Sloan, Carroll, & Greenland, 2004). We believe that, as the use of advanced regression models is becoming more common in psychological research, rather than conceptualizing marital distress as a confounding variable its role in depression should be tested using mediational and moderational models. The sampling implications are, again, that researchers should include a wide range of depressive symptoms and marital distress scores.

The third design issue we would like to highlight is the need to take history of depression into account. One frequent criticism of previous studies of marital distress and depression is that researchers have not always assessed history of depression. History of depression is such a significant predictor of subsequent depression that once it has been taken into account many previously significant psychosocial predictors of depression lose their significance (Coyne & Benazon, 2002). As a result, change in depression over time could erroneously be attributed to marital distress, when it is in fact due to a history of depressive illness.

3.2.2. Developmental stage of the partnership

Because the processes that characterize early marriage may be different from processes that characterize later stages of marriage, it would be instructive for researchers to examine how the length of the relationship and the developmental stage of the relationship impact the behaviors that are observed during the marital interaction (e.g. Davila et al., 1997). The results of several studies point to the importance of taking into account the stage of the relationship when interpreting the patterns of communication evidenced during a marital interaction (e.g., Nelson & Beach, 1990). In the study of Davila et al. using newlywed couples the researchers failed to find any cross-spouse effects for stress generation: the participants' own perceptions and behaviors, and not their spouse's, were associated with subsequent depressive symptoms. It is possible that it may take time for the cross-spouse effects to become evident, and studies of longer-term marriages will reveal different findings in this realm.

3.2.3. Incorporate affective science and physiological data

In the marital observation literature, affect expression and comprehension is most commonly measured using behavioral codes. At best, this methodology is conceptualized as affective/behavioral coding, and does not give direct assessment of physiological responses (e.g. Weiss & Heyman, 1990). We foresee future investigations enriching data by adding physiological measures of affective processing, including heart rate and skin conductance responses to arousing stimuli. We feel these explorations will increase current knowledge for several reasons. First, studies reveal that physiological measures of affect account for a significant amount of variance in couples' satisfaction scores, above and beyond the variance accounted for by the behavioral and behavioral/affective codes (e.g., Levenson & Gottman, 1983, 1985). Second, given the centrality of mood to the phenomenology of depression, physiological measures of emotion and affect may be particularly useful in examining the longitudinal association between affective experiences during marital interactions and future depressive symptoms. Third, the area of social neuroscience (Cacioppo, 2002) is providing excellent data regarding affective processing in response to social data. Such work could be extended creatively to develop innovative and nuanced explanations of the interpersonal contextual cues arising in couple conflicts. For example, research by Cacioppo and colleagues suggests that two asymmetries in affective information processing are evident in humans. They include positivity offset, which is the tendency for positive affect to be greater than negative affect at low levels of activation; and, negativity bias, which is the propensity for negative affect to increase at a greater rate than positive affect as activation increases (Crawford & Cacioppo, 2002; Ito & Cacioppo, 2000; Ito, Cacioppo, & Lang, 1998). Although we now understand how these asymmetries influence emotion information processing in healthy adults, it is unclear how they function in depressed adults in the context of marital distress.

3.2.4. Longitudinal studies

With a few exceptions (e.g., Cohan & Bradbury, 1997; Davila et al., 1997), all of the studies in Table 1 are cross-sectional studies. To truly understand the temporal relationship between marital communication behaviors, marital satisfaction, and depression there need to be a greater number of longitudinal investigations of the interplay between these variables. Moreover, results from the marital observation literature show that behaviors that relate to marital satisfaction cross-sectionally may differ from, or even be opposite of, behaviors that relate to marital satisfaction longitudinally (e.g. Weiss & Heyman, 1990). It is quite possible that behaviors that relate positively to depression in the short term concurrently are predictive of decreases in depressive symptoms longitudinally, with mediation by marital satisfaction. Wife conflict engagement may have a positive concurrent association with the wife's depressive symptoms, possibly due to a decline in her marital satisfaction; however, in the long-term the extent to which she is able to maintain interest or stay engaged in the conflict may predict longitudinal declines in her depressive symptoms.

3.3. Conclusion

The full potential of theoretical and empirical advancements that can be achieved by carefully detailing and investigating the marital context of depression has not been realized. In part, this is due to methodological limitations of past research, particularly problems arising due to poor sample selection and cross-sectional design. Also, much of this research has been developed in a theoretical vacuum despite the availability of interpersonal models of depression. Traditionally, it has been too challenging to test reciprocal and dynamic models of the association between contextual variables and depression, but methodological and statistical advancements are making this more feasible. There is abundant room for integrative research; however, investigators should proceed with integrative work cautiously and avoid giving causal primacy to intra-individual factors. True attempts at integration need to remain faithful to the central thesis of the interpersonal perspective: that the context of depression keeps changing and unfolding over time.

Acknowledgement

This research was supported by a grant from the Ontario Mental Health Foundation awarded to Uzma Rehman.

References

Alloy, L. B., Fedderly, S. S., Kennedy-Moore, E., & Cohan, C. L. (1998). Dysphoria and social interaction and integration of behavioral confirmation and interpersonal perspectives. *Journal of Personality and Social Psychology*, *74*, 1566−1579.

Angst, J. (1986). The course of affective disorders. *Psychopathology*, *19*, 47−52.

Bank, L., Dishion, T., Skinner, M., & Patterson, G. R. (1990). Method variance in structural equation modeling: Living with "glop". In G. Patterson (Ed.), *Depression and aggression in family interaction* (pp. 247−279). Hillsdale, NJ: Erlbaum.

Basco, M. R., Prager, K. J., Pita, J. M., Ramir, L. M., & Stephens, J. J. (1992). Communication and intimacy in the marriages of depressed patients. *Journal of Family Psychology*, *6*, 184−194.

Beach, S. R. H., Fincham, F. D., & Katz, J. (1998). Marital therapy in the treatment of depression: Toward a third generation of therapy and research. *Clinical Psychology Review*, *18*, 635−661.

Beach, S. R. H., Sandeen, E. E., & O'Leary, K. D. (1990). *Depression in marriage: A model for etiology and treatment.* New York: Guilford Press.

Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry*, *4*, 561−571.

Belsky, J., Spanier, G. B., & Rovine, M. (1983). Stability and change in marriage across the transition to parenthood. *Journal of Marriage and the Family*, *45*, 567−577.

Ben-Zur, H., & Zeidner, M. (1988). Sex differences in anxiety, curiosity, and anger: A cross-cultural study. *Sex Roles*, *19*, 335−347.

Biglan, A., Hops, H., Sherman, L., Friedman, L. S., Arthur, J., & Osteen, V. (1985). Problem-solving interactions of depressed women and their husbands. *Behavior Therapy*, *16*, 431−451.

Bolger, N., Zuckerman, A., & Kessler, R. C. (2000). Invisible support and adjustment to stress. *Journal of Personality and Social Psychology*, *79*, 953−961.

Bradbury, T. N., Beach, S. R. H., Fincham, F. D., & Nelson, G. M. (1996). Attributions and behavior in functional and dysfunctional marriages. *Journal of Consulting and Clinical Psychology*, *64*, 569−576.

Bradbury, T. N., & Fincham, F. D. (1990). Attributions in marriage: Review and critique. *Psychological Bulletin*, *107*, 3−33.

Brown, G., & Harris, T. (1978). Social origins of depression: A reply. *Psychological Medicine*, *8*, 577−588.

Burns, D., Sayers, S., & Moras, K. (1994). Intimate relationships and depression: Is there a causal connection? *Journal of Consulting and Clinical Psychology*, *62*, 1033−1043.

Cacioppo, J. T. (2002). Social neuroscience: Understanding the pieces fosters understanding the whole and vice versa. *American Psychologist*, *57* (11), 819−831.
Cano, A., & O'Leary, K. D. (2000). Infidelity and separations precipitate major depressive episodes and symptoms of nonspecific depression and anxiety. *Journal of Consulting and Clinical Psychology*, *68*, 774–751.
Christenfeld, N. J. S., Sloan, R. P., Carroll, D., & Greenland, S. (2004). Risk factors, confounding, and the illusion of statistical control. *Psychosomatic Medicine*, *66*, 868−875.
Cohan, C. L., & Bradbury, T. N. (1997). Negative life events, marital interaction, and the longitudinal course of newlywed marriage. *Journal of Personality and Social Psychology*, *73*, 114−128.
Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, *98*, 310−357.
Coyne, J. C. (1976). Toward an interactional description of depression. *Psychiatry*, *39*, 28−40.
Coyne, J. C. (1999). Thinking interactionally about depression: A radical restatement. In T. Joiner & J. C. Coyne (Eds.), *The interactional nature of depression: Advances in interpersonal approaches* (pp. 365−392). Washington DC: American Psychological Association.
Coyne, J. C., & Benazon, N. R. (2002). Not agent blue: Effects of marital functioning on depression and implications for treatment. In S. Beach (Ed.), *Marital and family processes in depression: A scientific approach* (pp. 25−43). Washington DC: American Psychological Association.
Coyne, J. C., Kessler, R. C., Tal, M., Turnbull, J., et al. (1987). Living with a depressed person. *Journal of Consulting and Clinical Psychology*, *55*, 347−352.
Crawford, L. E., & Cacioppo, J. T. (2002). Learning where to look for danger: Integrating affective and spatial information. *Psychological Science*, *13*, 449−453.
Davila, J. (2001). Paths to unhappiness: The overlapping courses of depression and romantic dysfunction. In S. Beach (Ed.), *Marital and family processes in depression: A scientific approach* (pp. 71−87). Washington DC: American Psychological Association.
Davila, J., Bradbury, T. N., Cohan, C. L., & Tochluk, S. (1997). Marital functioning and depressive symptoms: Evidence for a stress generation model. *Journal of Personality and Social Psychology*, *73*, 849−861.
Davila, J., Hammen, C., Burge, D., Paley, B., & Daley, S. E. (1995). Poor interpersonal problem solving as a mechanism of stress generation in depression among adolescent women. *Journal of Abnormal Psychology*, *104*, 592−600.
Endicott, J., & Spitzer, R. L. (1978). A diagnostic interview: The schedule for affective disorders and schizophrenia. *Archives of General Psychiatry*, *35*, 837−844.
Fiedler, P., Backenstraß, M., Kronmüller, K. T., & Mundt, Ch. (1998). Expressed emotion, marital quality and satisfaction, and relapse in depression. *Nervenarzt*, *69*, 600−608.
Fincham, F. D., Beach, S. R. H., Harold, G. T., & Osborne, L. N. (1997). Marital satisfaction and depression: Different causal relationships for men and women? *Psychological Science*, *8*, 351−357.
Flaherty, J., & Richman, J. A. (1989). Gender differences in the perception and utilization of social support: Theoretical perspectives and an empirical test. *Social Science & Medicine*, *28*, 1221−1228.
Fletcher, J. O. G., & Thomas, G. (2000). Behavior and on-line cognition in marital interaction. *Personal Relationships*, *7*, 111−130.
Flett, G. L., Vrendenburg, K., & Krames, L. (1997). The continuity of depression in clinical and nonclinical samples. *Psychological Bulletin*, *121*, 395−416.
Fujita, F., Diener, E., & Sandvik, E. (1991). Gender differences in negative affect and well-being: The case for emotional intensity. *Journal of Personality and Social Psychology*, *61*, 427−434.
Goering, P. N., Lancee, W. J., & Freeman, S. J. J. (1992). Marital support and recovery from depression. *British Journal of Psychiatry*, *160*, 76−82.
Gotlib, I. H., & Robinson, L. A. (1982). Responses to depressed individuals: Discrepancies between self-report and observer-rated behavior. *Journal of Abnormal Psychology*, *91*, 231−240.
Gotlib, I. H., & Whiffen, V. E. (1989). Depression and marital functioning an examination of specificity and gender differences. *Journal of Abnormal Psychology*, *98*, 23−30.
Gottman, J. M. (1994). *What predicts divorce?* Hillsdale, NJ: Erlbaum.
Gottman, J. M. (1998). Psychology and the study of the marital processes. *Annual Review of Psychology*, *49*, 169−197.
Hahlweg, K., Revenstorf, D., & Scindler, L. (1984). Effects of behavioral marital therapy on couples' communication and problem-solving skills. *Journal of Consulting and Clinical Psychology*, *52*, 553−566.
Hammen, C. (1991). The generation of stress in the course of unipolar depression. *Journal of Abnormal Psychology*, *100*, 555−561.
Hammen, C. (1999). The emergence of an interpersonal approach to depression. In T. Joiner & J. C. Coyne (Eds.), *The interactional nature of depression: Advances in interpersonal approaches* (pp. 21−35). Washington DC: American Psychological Association.
Hammen, C. (2003). Interpersonal stress and depression in women. *Journal of Affective Disorder*, *74*, 49−57.
Hammen, C., & Brennan, P. A. (2001). Depressed adolescents of depressed and nondepressed mothers: Tests of an interpersonal impairment hypothesis. *Journal of Consulting and Clinical Psychology*, *69*, 284−294.
Hammen, C. L., & Padesky, C. A. (1977). Sex differences in the expression of depressive responses on the Beck Depression Inventory. *Journal of Abnormal Psychology*, *86*, 609−614.
Hammen, C., & Peters, S. (1977). Differential responses to male and female depressive reactions. *Journal of Consulting and Clinical Psychology*, *45*, 994−1001.
Hautzinger, M., Linden, M., & Hoffman, N. (1982). Distressed couples with and without a depressed partner: An analysis of their verbal interaction. *Journal of Behavioral Therapy and Experimental Psychiatry*, *13*, 307−314.
Heyman, R. E., Chaudhry, B. R., Treboux, D., Waters, E., & Vivian, D. (2001). How much observational data is enough? An empirical test using marital interaction coding. *Behavior Therapy*, *32*, 107−122.
Hinchliffe, M., Hooper, D., Roberts, F. J., & Vaughan, P. W. (1975). A study of the interaction between depressed patients and their spouses. *British Journal of Psychiatry*, *126*, 164−172.

Hinchliffe, M., Vaughan, P. W., Hooper, D., & Roberts, F. J. (1977). The melancholy marriage: An inquiry into the interaction of depression: II. Expressiveness. *British Journal of Medical Psychology*, *50*, 125−142.
Hooley, J. M. (1986). Expressed emotion and depression interactions between patients and high- versus low-expressed-emotion spouses. *Journal of Abnormal Psychology*, *95*, 237−246.
Hooley, J. M., & Teasdale, J. D. (1989). Predictors of relapse in unipolar depressives: Expressed emotion, marital distress, and perceived criticism. *Journal of Abnormal Psychology*, *98*, 229−235.
Hooper, D., Vaughan, P. W., Hinchliffe, M. K., & Roberts, F. J. (1978). The melancholy marriage: An inquiry into the interaction of depression. Power. *British Journal of Medical Psychology*, *51*, 387−398.
Ito, T. A., & Cacioppo, J. T. (2000). Electrophysiological evidence of implicit and explicit categorization processes. *Journal of Experimental Social Psychology*, *36*, 660−676.
Ito, T. A., Cacioppo, J. T., & Lang, P. J. (1998). Eliciting affect using the International Affective Picture System: Trajectories through evaluative space. *Personality & Social Psychology Bulletin*, *24*, 855−879.
Jacob, T., & Johnson, S. L. (1997). Parent–child interaction among depressed fathers and mothers: Impact on child functioning. *Journal of Family Psychology*, *11*, 391−409.
Jacob, T., & Krahn, G. L. (1988). Marital interactions of alcoholic couples: Comparison with depressed and nondistressed couples. *Journal of Consulting and Clinical Psychology*, *56*, 73−79.
Jacob, T., & Leonard, K. (1992). Sequential analysis of marital interactions involving alcoholic, depressed and nondistressed men. *Journal of Abnormal Psychology*, *101*, 647−656.
Johnson, S. L., & Jacob, T. (1997). Marital interactions of depressed men and women. *Journal of Consulting and Clinical Psychology*, *65*, 15−23.
Johnson, S. L., & Jacob, T. (2000). Sequential interactions in the marital communication of depressed men and women. *Journal of Consulting and Clinical Psychology*, *68*, 4−12.
Joiner, T. (2002). Depression in its interpersonal context. In Gotlib & Hammen (Eds.), *Handbook of depression* (pp. 295−313). New York, NY: Guilford Press.
Joiner, T., Coyne, J. C., & Blalock, J. (1999). On the interpersonal nature of depression: Overview and synthesis. In T. Joiner & J. C. Coyne (Eds.), *The interactional nature of depression: Advances in interpersonal approaches* (pp. 3−20). Washington DC: American Psychological Association.
Joiner, T. E., Jr., & Katz, J. (1999). Contagion of depressive symptoms and mood: Meta-analytic review and explanations from cognitive, behavioral, and interpersonal viewpoints. *Clinical Psychology, Science and Practice*, *6*, 149−164.
Joiner, T. E., & Metalsky, G. I. (1995). A prospective test of an integrative interpersonal theory of depression: A naturalistic study of college roommates. *Journal of Personality & Social Psychology*, *69*, 778−788.
Jones, D. J., Beach, S. R. H., & Forehand, R. (2001). Stress generation in intact community families: Depressive symptoms, perceived family relationships stress, and implications for adolescent adjustment. *Journal of Social and Personal Relationships*, *18*, 443−462.
Karney, B. R. (2001). Depressive symptoms and marital satisfaction in the early years of marriage: Narrowing the gap between theory and research. In S. Beach (Ed.), *Marital and family processes in depression: A scientific approach* (pp. 45−68). Washington DC: American Psychological Association.
Katz, J., & Beach, S. R. H. (1997). Self-verification and depressive symptoms in marriage and courtship: A multiple pathway model. *Journal of Marriage and the Family*, *59*, 903−914.
Kendall, P., Hollon, S., Beck, A., Hammen, C., & Ingram, R. R. (1987). Issues and recommendations regarding use of the Beck Depression Inventory. *Cognitive Therapy and Research*, *11*, 289−299.
Kendler, K. S., Kessler, R. C., Walter, E. E., MacLean, C., Neale, M. C., Heath, A. C., et al. (1995). Stressful life events, genetic liability, and onset of an episode of depression in women. *American Journal of Psychiatry*, *152*, 833−842.
Kessler, R. C. (1994). The National Comorbidity Survey of the United States. *International Review of Psychiatry*, *6*, 365−376.
Kessler, R. C. (1997). The effects of stressful life events on depression. *Annual Review of Psychology*, *48*, 191−214.
King, D. A., & Heller, K. (1984). Depression and the response of others: A re-evaluation. *Journal of Abnormal Psychology*, *93*, 477−480.
Kowalik, D. L., & Gotlib, I. H. (1987). Depression and marital interaction: Concordance between intent and perception of communication. *Journal of Abnormal Psychology*, *96*, 127−134.
Krantz, S. E., & Moos, R. H. (1987). Functioning and life context among spouses of remitted and nonremitted depressed patients. *Journal of Consulting and Clinical Psychology*, *55*, 353−360.
Kurdek, L. A. (1998). The nature and predictors of the trajectory of change in marital quality over the first four years of marriage and for first-married husbands and wives. *Journal of Family Psychology*, *12*, 494−510.
Levenson, R. W., & Gottman, J. M. (1983). Marital interaction: Physiological linkage and affective exchange. *Journal of Personality and Social Psychology*, *45*, 587−597.
Levenson, R. W., & Gottman, J. M. (1985). Physiological and affective predictors of change in relationship satisfaction. *Journal of Personality and Social Psychology*, *49*, 85−94.
Linden, M., Hautzinger, M., & Hoffman, N. (1983). Discriminant analysis of depressive interactions. *Behavior Modification*, *7*, 403−422.
Maxwell, S. E., Delaney, H. D., & Dill, C. A. (1984). Another look at ANCOVA versus blocking. *Psychological Bulletin*, *95*, 136−147.
Mishler, E. G., & Waxler, N. E. (1968). *Interaction in families: An experimental study of family processes and schizophrenia.* Oxford, England: John Wiley & Sons.
McCabe, S. B., & Gotlib, I. H. (1993). Interactions of couples with and without a depressed spouse: Self-report and observations of problem-solving situations. *Journal of Social and Personal Relationships*, *10*, 589−599.
McLean, P. D., Ogston, K., & Grauer, L. (1973). A behavioral approach to the treatment of depression. *Journal of Behavior Therapy and Experimental Psychiatry*, *4*, 323−330.
Marcus, D. K., & Nardone, M. E. (1992). Depression and interpersonal rejection. *Clinical Psychology Review*, *12*, 433−449.

Monroe, S. M., & Hadjiyannakis, K. (2001). The social environment and depression: Focusing on severe life stress. In Gotlib & Hammen (Eds.), *Handbook of depression* (pp. 314−340). New York, NY: Guilford Press.

Murray, C. J. L., & Lopez, A. D. (Eds.). (1996). *The global burden of disease: A comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020.* Cambridge, MA: Harvard University Press.

Nelson, G. M., & Beach, S. R. H. (1990). Sequential interaction in depression: Effects of depressive behavior on spousal aggression. *Behavior Therapy*, *21*, 167−182.

Nolen-Hoeksema, S. (1987). Sex differences in unipolar depression: Evidence and theory. *Psychological Bulletin*, *101*, 259−282.

Nolen-Hoeksema, S. (2002). Gender differences in depression. In Gotlib & Hammen (Eds.), *Handbook of depression* (pp. 492−509). New York, NY: Guilford Press.

Nolen-Hoeksema, S., & Girgus, J. S. (1994). The emergence of gender differences in depression during adolescence. *Psychological Bulletin*, *115*, 424−443.

Patterson, G. R. (1982). *A social learning approach in family intervention: Volume 3.* Coercive family process Eugene, OR: Castalia.

Paykel, E. S., Myers, J. K., Dienelt, M. N., Klerman, G. L., Lindenthal, J. J., & Pepper, M. P. (1969). Life events and depression: A controlled study. *Archives of General Psychiatry*, *21*, 753−760.

Post, R. (1992). Transduction of psychosocial stress into the neurobiology of recurrent affective disorder. *American Journal of Psychiatry*, *149*, 999−1010.

Rosenblatt, A., & Greenberg, J. (1991). Examining the world of the depressed: Do depressed people prefer others who are depressed? *Journal of Personality and Social Psychology*, *60*, 620−629.

Ruscher, S. M., & Gotlib, I. H. (1988). Marital interaction patterns of couples with and without a depressed partner. *Behavior Therapy*, *19*, 455−470.

Sarason, B. R., Sarason, I. G., & Gurung, R. A. R. (1997). Close personal relationships and health outcomes: A key to the role of social support. In S. Duck (Ed.), *Handbook of personal relationships: Theory, research, and interventions* (pp. 547−573). Hoboken, NJ, US: John Wiley & Sons.

Sayers, S. L., Kohn, C. S., Fresco, D. M., Bellack, A. S., & Sarwer, D. B. (2001). Marital cognitions and depression in the context of marital discord. *Cognitive Therapy and Research*, *25*, 713−732.

Schmaling, K. B., & Jacobson, N. S. (1990). Marital interaction and depression. *Journal of Abnormal Psychology*, *99*, 229−236.

Schmaling, K. B., Whisman, M. A., Fruzzetti, A. E., & Truax, P. (1991). Identifying areas of marital conflict interactional behaviors associated with depression. *Journal of Family Psychology*, *5*, 145−157.

Schudlich, T. D., Papp, L. M., & Cummings, E. M. (2004). Relations of husbands' and wives' dysphoria to marital conflict resolution strategies. *Journal of Family Psychology*, *18*, 171−183.

Sher, T. G., Baucom, D. H., & Larus, J. M. (1990). Communication patterns and response to treatment among depressed and nondepressed martially distressed couples. *Journal of Family Psychology*, *4*, 63−79.

Sillars, A.L. (1982). Verbal tactics coding scheme: Coding manual. Unpublished manuscript, Ohio State University, Columbus, OH.

Spitzer, R. L., & Williams, J. B. (1984). Diagnostic dilemmas. *Psychosomatics: Journal of Consultation Liaison Psychiatry*, *25*, 16−20.

Strack, S., & Coyne, J. C. (1983). Social confirmation of dysphoria: Shared and private reactions to depression. *Journal of Personality and Social Psychology*, *44*, 798−806.

Swann, W. B. (1983). Self-verification: Bringing social reality into harmony with the self. In J. Suls & A. G. Greenwald (Eds.), *Social psychology perspectives*, *Vol. 2* (pp. 33−66). Hillsdale, NJ: Erlbaum.

Weiss, R. L. (1980). In J. P. Vincent (Ed.), *Strategic behavioral marital therapy: Toward a model for assessment and intervention. Advances in family intervention, assessment and theory*, *Vol. 1* (pp. 229−271).

Weiss, R.L. (1992). MICS-IV: Marital Interaction Coding System. Unpublished manual.

Weiss, R. L., & Heyman, R. E. (1990). Observation of marital interaction. In F. Fincham & T. Bradbury (Eds.), *The psychology of marriage: Basic issues and applications* (pp. 87−117). New York, NY, US: Guilford Press.

Weiss, R. L., Hops, H., & Patterson, G. R. (1973). A framework for conceptualizing marital conflict, a technology for altering it, some data for evaluating it. In L. Hamerlynck, E. Wethington, & R. C. Kessler (Eds.), *Perceived support, received support, and adjustment to stressful life events. Journal of health and social behavior*, *Vol. 27* (pp. 78−89).

Weissman, M. M. (1987). Advances in psychiatric epidemiology: Rates and risks for major depression. *American Journal of Public Health*, *77*, 445−451.

Whisman, M. A. (2001). The association between depression and marital dissatisfaction. In S. Beach (Ed.), *Marital and family processes in depression: A scientific approach* (pp. 3−24). Washington DC: American Psychological Association.

Whisman, M. A., & Bruce, M. L. (1999). Marital distress and incidence of major depressive episode in a community sample. *Journal of Abnormal Psychology*, *108*, 674−678.