

## HOSTILITY IN DEPRESSION<sup>1</sup>

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*Summary.*—Subjects (39 men and 30 women) from two university counseling centers and one university medical center were administered the Hamilton Rating Scale for Depression, the Buss-Durkee Hostility Inventory, the State-Trait Anger Scale, and the Hostility and Direction of Hostility Questionnaire. Results showed significant positive correlations between self-reported severity of depression and all subtypes of hostility including behavior, attitude, affect, intropunitiveness, and extrapunitiveness. Hierarchical regression analysis using demographic and hostility variables as predictors of depression scores showed increasing age, lower education, and female gender to account for 50% of the explained variance. The Intropunitive subscale from the Hostility and Direction of Hostility Questionnaire accounted for an additional 19% of the explained variance and was the single most powerful predictor of depression. Correlational analysis showed women tending to have higher scores on most hostility measures. Implications of these results with respect to theory and clinical practice are discussed.

The relationship between hostility and depression is one that has interested theorists, researchers, and clinicians alike for nearly a century. Freud (1917/1949) originally proposed that melancholia results from the introjection of hostility towards another onto the ego following object loss. More recently, ego psychologists (e.g., Bibring, 1953; Bowlby, 1961; McCranie, 1971) theorized that hostility also serves a defensive function and masks underlying or pending depression. Further, behaviorists (e.g., Ferster, 1973; Seligman, 1975) have suggested that depression results when hostility does not yield desired outcomes. Finally, cognitivists (e.g., Beck, 1967) postulate that depression is a function of one set of attributional properties and hostility another.

Empirically, research on the relationship between hostility and depression is mixed. For instance, some researchers have shown that hostility and depression are not positively related (e.g., Beck & Ward, 1961), while others have reported significant positive correlations between them (Schless, Mendels, Kepperman, & Cochrane, 1974). Likewise, some researchers have found

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depression correlated positively with inwardly directed hostility (e.g., Kendell, 1970), while others have found depression correlated positively with outwardly directed hostility (e.g., Lemaine & Clopton, 1981).

Conceptual and methodological limitations in many of the studies mentioned above may be partly responsible for the confusion in the research on hostility and depression to date. Conceptually, the construct of hostility remains poorly defined and loosely applied. For instance, hostility is often used interchangeably with affects such as anger (e.g., Novaco, 1975), attitudes such as resentment (e.g., Schless, *et al.*, 1974), and behaviors such as aggression or violence (e.g., Kendell, 1970). Studies have not assessed the relationship between depression and hostility measuring all three of the components (affective, attitudinal or cognitive, and behavioral) believed to be related to hostility (Gottschalk, Gleser, & Springer, 1963).

Methodologically, research on the presence and direction of hostility in depression has virtually been limited to depressed vs nondepressed samples. This is unfortunate since the type of hostility as well as the intensity of hostility type could vary significantly with respect to severity of depression. Indeed, earlier research (e.g., Lemaine & Clopton, 1981) has suggested that hostility may be more marked and outwardly directed in milder forms of depression, whereas in more severe forms of depression, hostility may be absent or inwardly directed. However, these studies employed limited measures of hostility which may have obscured important relationships between hostility and depression.

The purpose of this study was to clarify our understanding of the relationship between hostility and depression, particularly with respect to the frequency, type, and direction. Specifically, the research questions addressed in this study were (1) does hostility covary with severity of depression and (2) do certain types of hostility covary with severity of depression more than others?

#### METHOD

##### *Subjects*

Sixty-nine subjects (39 men and 30 women) from Inpatient Psychiatry, the Depression Clinic, the Counseling Center, and the Learning Center at the University of Utah, and Counseling and Career Services at the University of California, Santa Barbara, volunteered as participants. Chemically dependent, psychotic, and organically impaired persons were excluded from the study.

##### *Interviewers*

Three persons conducted the clinical interviews, test administration, and test interpretation in this study. One interviewer was an advanced doctoral student in the Counseling Psychology program at the University of Utah. Another interviewer was an advanced doctoral student in the Clinical

Psychology program at the University of Utah. The third interviewer was a Counseling Psychologist affiliated with the Depression Clinic at the University of Utah Medical Center. All interviewers were well acquainted with and experienced in the use of the selected questionnaires.

##### *Measures*

The questionnaires used in this study were the Hamilton Rating Scale for Depression (Hamilton, 1960), the Buss-Durkee Hostility Inventory (Buss & Durkee, 1957), the State-Trait Anger Scale (Spielberger, Jacobs, Russell, & Crane, 1983), and the Hostility and Direction of Hostility Questionnaire (Foulds, Caine, & Creasy, 1960). The Hamilton scale was selected to obtain a severity of depression rating, while the Buss-Durkee inventory was used to measure the cognitive, behavioral, and total components of hostility. The State-Trait Anger Scale was used to measure the affective component of hostility, while the Hostility Questionnaire measured the direction of hostility and general expression of hostility in depression. All measures have shown at least moderate to high reliability and validity (Biaggio & Maiuro, 1983; Moreno, Fuhrman, & Selby, 1993).

##### *Procedure*

The subjects were recruited from the Learning Center, Counseling Center, Depression Clinic, and Inpatient Psychiatric wards at the University of Utah as well as from Counseling and Career Services, at the University of California, Santa Barbara. Students from the Learning Center were approached during class by the investigator. A brief description of the study was provided, and appointments for interviewing and testing were made for interested volunteers. Clients from the Counseling Center and Depression Clinic were approached by the primary case manager and informed of the nature of the study. Interested volunteers were contacted by one of the interviewers, and arrangements were made for interviewing and testing. The same procedure was used at the Counseling and Career Services, University of California, Santa Barbara. Finally, depressed inpatients on the psychiatric wards of the University Medical Center were identified with the assistance of the nursing and psychiatric staff. Potential subjects were approached and briefly informed of the nature of the study. Again, arrangements for interviewing and testing were then made for those interested subjects.

In addition, 20 subjects were randomly selected to complete the aforementioned measures of hostility and depression seven to ten days after initial testing. The purpose of this second assessment was to check the stability of depression ratings over time.

#### RESULTS

##### *Intrarater Reliability*

To obtain a measure of intrarater reliability for the Hamilton Rating

Scale for Depression, 20 subjects from the present study were re-evaluated with this measure seven to ten days after the initial assessment. Test-retest correlation for the two assessments was .89. Interrater reliability was not evaluated due to geographical constraints.

### Correlational Analysis

Pearson product-moment correlation coefficients of the Hamilton Rating Scale for Depression with demographic and hostility variables are presented in Table 1. With regard to demographic variables, there was a significant and moderately strong relationship between the severity of reported depression and increasing age, unemployment, lower education, number of children, and unmarried status. With regard to the hostility variables, significant positive correlations were found between severity of depression and all measures of anger and hostility with the exception of the 'indirect hostility' subscale of the Buss-Durkee, and the 'acting out hostility' subscale of the Hostility and Direction of Hostility Questionnaire. Significant correlations ranged from .27 (Buss-Durkee: Verbal Hostility Scale) to .71 (Hostility and Direction of Hostility: Intropunitive Scale).

Correlations between hostility measures and sex are presented in Table 2. On most scales, there was no significant association between hostility

TABLE 1  
PEARSON CORRELATIONS OF DEMOGRAPHIC AND DIAGNOSTIC  
VARIABLES WITH HAMILTON DEPRESSION SCORES

Variable	r	Variable	r
Age	.36†	Spielberger State Anger	.44‡
Sex	-.02	Spielberger Trait Anger	.40‡
Marital Status	.39†	Direction of Hostility	
Children	.53 <sup>a</sup>	Acting Out Hostility	.20
Education	-.56 <sup>a</sup>	Criticism of Others	.49 <sup>a</sup>
Occupation	-.40‡	Self-criticism	.63 <sup>a</sup>
Loss of Family Member	.15	Projected Delusional Hostility	.48 <sup>a</sup>
Family History of Depression	-.25*	Delusional Guilt	.62 <sup>a</sup>
Buss-Durkee		Intropunitive	.71 <sup>a</sup>
Assault	.33†	Extrapunitive	.46‡
Indirect	.07	Direction	.32†
Irritability	.45‡	General	.62 <sup>a</sup>
Negativism	.28*		
Resentment	.45‡		
Suspicion	.58 <sup>a</sup>		
Verbal	.27*		
Guilt	.53 <sup>a</sup>		
Total	.53 <sup>a</sup>		

Note.—All cell *ns* = 69 except education (*n* = 68) and loss of family member (*n* = 60) due to missing data.

\**p* < .05. †*p* < .01. ‡*p* < .001. <sup>a</sup>*p* < .0001.

scores and sex; however, there was a general tendency for females to achieve higher scores. Two of the scales, 'trait anger' and 'self-criticism,' were positively and significantly associated with female gender.

TABLE 2  
PEARSON CORRELATIONS OF HOSTILITY VARIABLES WITH SEX (*N* = 69)

Variable	r	Variable	r
Buss-Durkee Inventory		Direction of Hostility	
Assault	.00	Acting Out Hostility	.06
Indirect	.19	Criticism of Others	.08
Irritability	.20	Self-criticism	.31*
Negativism	-.02	Projected Delusional	-.01
Resentment	.22	Delusional Guilt	.02
Suspicion	.08	Intropunitive	.20
Verbal	.14	Extrapunitive	.07
Guilt	.12	Direction	.22
Total	.18	General	.13
Spielberger Trait Anger	.30*		

\**p* < .05.

### Regression Analysis

A hierarchical regression was performed in which an initial block of demographic variables and a second block of hostility variables were entered to predict scores on the Hamilton Rating Scale for Depression. Within each block the variables were entered stepwise, i.e., entered only if they significantly contributed to the equation. Preliminary examination of the correlation matrix for the hostility variables showed high intercorrelations among many of the scales. Thus, in order to avoid problems associated with multicollinearity and singularity, the Buss-Durkee scales and the Hostility and Direction of Hostility Questionnaire General scale were omitted from the regression.

The top portion of Table 3 shows the results of this regression. From the block of demographic variables, only education, age, and sex were significant predictors of depression as measured by the Hamilton depression scale and accounted for 50% of variance (Multiple *R* = .50). From the block of hostility variables, only the Intropunitive subscale from the Hostility and Direction of Hostility Questionnaire was a significant predictor of depression, accounting for an additional 19% of the variance (Multiple *R* = .19).

Some cases had missing data on the five demographic variables not included in the regression equation. These cases were deleted listwise from the analysis even though they had complete data on the three demographic variables that were ultimately included. To salvage these cases, a second, similar regression was conducted in which the first block consisted only of the three demographic variables entered in the original regression; the second block re-

TABLE 3  
SUMMARY OF HIERARCHICAL REGRESSION ANALYSES FOR VARIABLES  
PREDICTING HAMILTON DEPRESSION SCORES

Variable	B	SEB	$\beta$
8 Demographic Variables (N = 59) <sup>a</sup>			
Education	-1.21	0.41	-.30*
Age	0.34	0.09	.30†
Sex	-5.36	1.76	-.26*
Direction of Hostility: Intropunitive	1.63	0.30	.55‡
3 Demographic Variables (N = 68) <sup>b</sup>			
Education	-1.16	0.37	-.29*
Age	0.36	0.08	.33‡
Sex	-4.60	1.56	-.22*
Direction of Hostility: Intropunitive	1.62	0.26	.55‡

Note.—Values reported in both equations are from after the evaluation of the second block of variables. In both equations, only the Direction of Hostility: Intropunitive variable was entered from the second block.

<sup>a</sup>R<sup>2</sup> from first block = .48;  $\Delta$ R<sup>2</sup> for second block = .19 (*ps* < .0001).

<sup>b</sup>R<sup>2</sup> from first block = .50;  $\Delta$ R<sup>2</sup> for second block = .19 (*ps* < .0001).

\**p* < .01. †*p* < .001. ‡*p* < .0001.

mained unchanged. The results of this regression are given in the lower portion of Table 3. Nine cases were recovered, and the pattern of results was unchanged from the first regression.

#### DISCUSSION

Present findings offer strong support for the association between depression and multiple types of hostility, e.g., behavioral, affective, attitudinal, and global. The finding that depression scores are associated with overt manifestations of hostility is in contrast to cognitive (e.g., Beck, 1967), behavioral (e.g., Seligman, 1975), and classical psychoanalytic theories of depression (Freud, 1917/1949). This finding is also contrary to the bulk of previous research on hostility and depression which has indicated either no relationship between overt hostility and depression (e.g., Moore & Paolillo, 1984) or an inverse one (e.g., Kendell, 1970).

One explanation for this finding is the use of a clinical sample. Many earlier research studies examining the relationship between hostility and depression included college students or other nonclinical samples who tend to report lower levels of depression (e.g., Biaggio, 1987). In contrast, a more recent study (Maiuro, O'Sullivan, Michael, & Vitaliano, 1989) examined hostility and depression in 62 male psychiatric patients with histories of either assaultive, suicide-attempting, or nonviolent behavior. Results of their study showed both suicide-attempting and assaultive patients have significantly higher scores on measures of hostility and depression than nonviolent controls, but no groups were significantly different from each other on measures of overt forms of hostility.

With regard to the attitudinal component of hostility, the relatively higher correlations found between various attitudinal subscales (e.g., resentment, suspicion, and guilt) and depression are consistent with previous research (e.g., Schless, *et al.*, 1974). With respect to affect, the significant correlation between reported anger and depression is also consistent with previous findings (e.g., Biaggio, 1987) and suggests that there may be an association between severity of depression and a tendency not to monitor or control angry feelings. In sum, present data provide additional support for a relationship between affective and attitudinal types of hostility and depressive symptomatology.

With regard to the relationship between depression and direction of hostility (i.e., inward vs outward), present findings show generally higher correlations between severity of reported depression and scales measuring inwardly directed hostility (e.g., delusional guilt, self-criticism, intropunitiveness) compared to scales measuring outwardly directed forms of hostility (e.g., assault, verbal hostility, extrapunitiveness). Further, regression analysis showed the Intropunitive scale to be the only significant diagnostic predictor of depression. These findings are consistent with most theories of depression which have suggested it is the tendency of depressed persons to blame themselves for negative events in their lives, which causes or exacerbates their emotional disturbance. Thus, additional support is provided for the contention that an important component of depression is hostile thoughts and feelings about self.

However, the significant correlations between depression and outwardly directed hostility suggest that a more complex relationship exists between these phenomena than previous theory, clinical observation, and research indicate. One hypothesis is that, although severely depressed individuals may be more overtly hostile than less depressed persons, they are also more intropunitive. However, this explanation does not account for the phenomenon of 'extrapunitive' suicide, i.e., individuals who commit suicide to punish others or who first kill others and then themselves. In these cases, overt hostile thoughts and feelings appear to be a significant component of severe depression. This stands in marked contrast to 'intropunitive' suicide which is committed as a consequence of feelings of hopelessness, helplessness, and hostility turned inward. In sum, the type of hostile behavior observed in depressed persons may be the result of the severity of the depression in combination with other psychological and situational variables.

With respect to demographic variables, present findings clearly show the influence of age, gender, and educational status on depression ratings. Higher depression ratings were strongly associated with lower education, increasing age, and female gender. The relationship between lower education and depression is consistent with self-reinforcement theory (Heiby, 1983). That is,

less education may lead to reductions in environmental reinforcements and subsequent reduction in self-reinforcement which increases a person's proneness for becoming depressed. Increasing age has been shown in many research studies to be an important component in depression and suicidal behavior. Friends and relatives die, social isolation may increase, and the prospect of death becomes more real (Osgood, 1985).

Finally, women have been reported to be about twice as likely to suffer from depression as men (Strickland, 1992). One explanation for this may be that women have been encouraged to present themselves as attractive, sensitive to other persons, and passive in relationships (Strickland, 1992). These roles, as well as subservience to men and a lack of occupational opportunities, may produce more depression in women (Bernard, 1976). This lack of control in life situations may cause them to attribute their 'helplessness' to an imagined lack of personal worth. However, the present findings may be more reflective of how women tend to respond to depressed moods rather than support real sex differences in rates of depression. Nolen-Hoeksema (1991) found that women were more likely than men to ruminate in response to depressed moods, whereas men tended to dampen or find ways of minimizing dysphoria. When tendency to ruminate was statistically controlled, sex differences in duration of depressed moods disappeared.

With regard to the relationship between sex and hostility, the results of this study are generally contrary to findings of previous studies. Specifically, not only was there no significant association between sex and overt hostility scores but also a general tendency for women to have higher scores on all hostility scales. Further, on scales measuring Trait Anger and Self-criticism, there was a significant tendency for women to obtain higher scores. Several factors may account for this finding: (a) a more explicit measurement of hostility, (b) the impact of changing role definitions and behavioral expectations of women in our society, or (c) the effects of longstanding social, political, and economic inequalities between the sexes in American life.

#### *Theoretical Implications*

With respect to theory, present findings stand in marked contrast to several traditional approaches to the relationship between hostility and depression. For example, these results do not support Freud's (1917/1949) contention that depression is a function of unconscious hostility for another person directed at the ego. Rather, the subjects in this study reported feelings of hostility toward others *as well as* themselves. Further, the results of this study do not support the neoclassical psychoanalytic position (Bibring, 1953; Bowlby, 1961; McCranie, 1971) which contends that hostility defends against underlying or pending depression, or the cognitive (Beck, 1967) and reformulated helplessness (Peterson & Seligman, 1985) models wherein depression is considered to be a function of one set of attributional properties

and hostility another. Rather, subjects in the present study demonstrated hostile and depressed features *simultaneously*. In light of these findings, there seems to be a need for the development of alternative models for explaining the relationship between hostility and depression which would incorporate both conscious and unconscious cognitive processes as well as inward and outward expressions of hostility in depression.

#### *Clinical Implications*

Present findings have several important implications for the assessment, diagnosis, and treatment of depressed persons. With respect to assessment, practitioners should actively question and listen for signs of hostility in their clinical interviews with patients. If hostility is high, then the probability of a moderate to severe depression is likely. Moreover, contrary to clinical lore, the hostile patient may not be recovering from depression but, in fact, worsening. Entertaining this possibility is made even more important given evidence which suggests that suicide attempters are more hostile than non-suicidal neurotics and controls (Philip, 1970).

Diagnostically, the results of this study suggest that current criteria for diagnosing depression may be insufficient. For instance, in the DSM-III-R (American Psychiatric Association, 1987), the only reference to hostility under criteria for Major Depression is "irritability," and even then it is noted as an "associated feature." The present findings suggest that hostility is a *pronounced* rather than associated feature in depression and that other forms of hostility besides irritability, e.g., resentment, suspicion, aggression, and anger, warrant consideration in making this diagnosis.

In terms of treatment, as noted above, the presence of hostility is not necessarily a good prognostic sign. To the contrary, such features could indicate a serious condition which shows attention to outwardly as well as inwardly directed hostility. Experiential techniques encouraging the unbridled intensification and expression of hostility in depressed persons may be particularly contraindicated. Instead, treatment approaches addressing underlying psychodynamics, cognitive distortions, social skill deficits or biochemical imbalances may yield more favorable outcomes with these persons.

Finally, the finding that women in this study were equally as aggressive, and more angry, irritable, and resentful than men suggests that some longstanding assumptions about hostility in men and depression in women may not be true. Although men may have a genetic predisposition to exhibit greater hostility, present results suggest that environmental factors may operate in ways that increase hostility in women beyond traditional expectations. Consequently, the use of treatment strategies which incorporate various social factors may be needed when working with mood disturbance in female patients.

*Further Research*

Although this study has addressed important questions pertaining to the relationship between hostility and depression, a number of questions remain. For instance, how do hostility and depression covary over time? How does hostility covary with specific types of depression, e.g., dysthymic disorder versus major depression? How does hostility covary with depression when controlling for other psychiatric disorders, e.g., personality disorders, or medical disorders? Certainly, one of the limitations of this study was the lack of control for the variables embedded in these questions. Further research is necessary to examine the full meaning of present findings and to delineate the relationship between depression and hostility.

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