Entrapment and Defeat Perceptions in Depressive Symptomatology: Through an Evolutionary Approach

Serafim Carvalho, José Pinto-Gouveia, Paulo Pimentel, Dulce Maia, Paul Gilbert, and Jorge Mota-Pereira

The social rank and arrested defenses model for mood disorders bridges between animal and human models of psychopathology. There is increasing evidence that depression is associated with subordinated and loss of social rank, feeling inferior, shame, submissive behavior, and feeling defeated. These stressful states activate threat coping responses of fight and flight. If these are aroused but blocked, feelings of entrapment emerge with a negative impact on mood. The current study builds on previous studies and explores the association between depressive symptoms, social rank variables (of social comparison and submissive behavior), entrapment, and defeat in a sample of patients (n = 106) with major depression and in a sample of healthy controls (n = 116). Results showed that social rank variables, entrapment, and defeat were strongly associated with depressive symptoms in both samples. Entrapment and defeat showed significant association with other social rank variables. Logistic regression analysis revealed that defeat and internal entrapment were significant predictors of the belonging to the clinical or control groups. The present study extends previous research and supports the importance of defeat and external entrapment in clinical depression.

Depression is projected to be responsible for the second largest burden of disability from any illness by the year 2020 (Murray & Lopez, 1997), and for the first in high-income countries in 2030 (Mathers & Loncar, 2006). The prevalence of depression has been increasing over the past five decades (Kessler et al., 2003; Klerman, 1988; Seligman, Reivich, Jaycox, & Gillham, 1995). It tends to be recurrent (Coryell et al., 1994) and has a lifetime prevalence of 17.1% (Blazer, Kessler, & McGonagle, 1994).

Depression can be regarded as the changing pattern of positive and negative...
emotion, with a reduction in positive affects and drive and an increase in such negative affects as anxiety and irritability. Given the high and growing rate of depression, evolutionary psychologists and psychiatrists have increasingly considered the evolved and “natural” regulators of mood processes that can tone down positive affect and tone up negative affect (Gilbert, 1992, 2005, 2007); that is: what are the adaptive advantages/functions of being able to regulate mood states in this way?

There are many candidates for processes that can tone down positive affect and tone up negative affect (Gilbert, 2005). Klinger (1975) suggested that depression is linked to blocked goals and incentives, with reduction in positive affect facilitating disengagement from the unobtainable. Similarly, Nesse (2000) suggested that depression was a way of reducing drive and energy expenditure in environments where there would be poor payoffs from effort. Seligman (1975) proposed that depression is related to learning that one is helpless and cannot control aversive outcomes. While these are important general mechanisms that regulate positive and negative affect, they do not address the social aspects of depression and, in particular, the personal self-evaluative experiences that are linked to feelings of inferiority, aloneness, and unlovability, and they cannot explain why depressed people feel subordinated and cannot control aversive outcomes. While these are important general mechanisms that regulate positive and negative affect, they do not address the social aspects of depression and, in particular, the personal self-evaluative experiences that are linked to feelings of inferiority, aloneness, and unlovability, and they cannot explain why depressed people feel subordinated and cannot control aversive outcomes.

Another social model of depression focuses on loss of power in social situations and experiences of defeat (Price, 1972; Price & Sloman, 1987; Price et al., 1994). Highly subordinated animals or animals recently defeated need to down-regulate positive emotion in order to signal defeat states to potential opponents, reduce aspirations and challenging behavior, and be vigilant of the social environment, because social challenges are common on animals in very subordinate positions who were recently socially defeated (Sloman & Gilbert, 2000). In humans, physical and sexual abuse, both in childhood and in marriage, and school and workplace bullying—especially where one is unable to fight back—are common sources for vulnerability to depression (Bifulco & Moran, 1998).

Gilbert (1992, 2005, 2007) also suggested that the experience of defeat can arise from non-aggressive competitions and that competition in everyday life is for social place within affiliative networks. Defeats can arise from loss or a reduction in one’s perceived ability to compete for social place, for example, being rejected as a friend, lover, or for a job, feeling inferior to others because of personal qualities, being overweight or unable to control eating and diet, or feeling inadequate in various roles, such as parent. A sense of defeat can also arise from harsh internal self-criticism (Gilbert, 2007). Therefore, one of the crucial social cognitive processes that influences how people feel and act in certain situations is social comparison (Barkow, 1980; Gilbert, Price, & Allan, 1995; Kemper, 1990). Indeed, perceptions of inferior and unfavorable social comparison have been linked to depression for a long time, with good evidence that depression is associated with feeling inferior, less competent, and less able compared to others (e.g., Gilbert & Allan, 1998; Gilbert et al., 2002). Importantly, however, depression may be primarily linked to qualities regarding the ability to compete in the world (feeling able, motivated, successful) and much less to qualities such as feeling one is a kind, honest, and supportive person (McEwan, Gilbert, &
Duarte, 2012). So it may not be true that depressed people have a global inferiority view of the self, but it’s the competitive dynamics of life that are crucial.

This social rank model acts as a bridge between the affiliative concepts of Bowlby and the competitive dynamic of Price by arguing that it is competing for social place, where one is able to elicit important social resources, such as care support, respect and validation, that is crucial to depression. Hence, being recipient of these and creating positive feelings about oneself in the mind of “the other” has major positive effects on physiological regulation, whereas feeling ashamed, rejected, and marginalized is a major threat and stressor to humans (Gilbert, 2007, 2009).

In a study of students and depressed patients, a scale measuring perceptions of personal defeat was a better predictor of depression than hopelessness (Gilbert & Allan, 1998). Indeed, there are now many studies that have found that perceptions of defeat are associated with a range of psychological difficulties and in particular depression (Gilbert, Allan, Brough, Melley, & Miles, 2002; Wilner & Goldstein, 2001; for a major review, see Taylor, Gooding, Wood, & Tarrier, 2011).

Defensive and Arrested Behaviors

The above mentioned studies direct attention to which defensive behaviors are triggered in defeat states or when individuals feel they are in involuntary subordinate, inferior positions. Dixon and colleagues (Dixon, Fisch, Huber, & Walser, 1989; Dixon, 1998) and Gilbert (1992, 2001) argue that when confronted with a social stressor, animals will either seek support, submit (appease), take flight, or attack. However, if these defensive behaviors are activated but blocked or are ineffective, they can remain in a high state of arousal without resolution, and this has a downward impact on mood.

In regard to social support, there is considerable evidence that people who have received affiliative support in the past, particularly as children, are less vulnerable to depression, and those who currently have access to affiliative supports recover from depression more quickly than those who do not (Brown & Harris, 1998). There is increasing evidence that affiliative relationships have important physiological impacts on the stress response (Heinrichs, Baumgartner, Kirschbaum & Ehlert, 2003), and one way in which psychotherapy may help people is by providing important relationships of validation, understanding, and support (Zuroff & Blatt, 2006).

Another key defensive behavior is submissive behavior. This defensive strategy is usually aimed at avoiding, de-escalating, or terminating conflicts and attacks. Without these involuntary behaviors signalling subordinate status, animals would not be able to resolve conflicts without serious injury (Allan & Gilbert, 1997). Submissive behavior, social anxiety, and poor assertiveness have also long been linked to depression and are known to be vulnerability factors for depression (Alpert et al., 1997).

In contexts where people feel they cannot control their social resources, support is not available, and submissive behaviour is ineffective, depression is linked to feelings of entrapment and wanting to get away (Gilbert, 1992; Gilbert et al., 2002). There is now good evidence from both self-report (Gilbert & Allan, 1998; Gilbert et al., 2002) and life events studies (Brown, Harris, & Hepworth, 1995; Brown et al., 2010; Kendler, Hettema, Butera, Gardner, & Prescott, 2003) that entrapment is strongly linked to depression (Kendler et al., 2003; Sturman & Mongrain 2008; Taylor et al., 2011). According to Gilbert and Allan (1998), the perception of entrapment can be triggered, amplified, and maintained by external context but also by internal processes, such as intrusive, unwanted thoughts and ruminations. For example, ruminating on the sense of defeat or
inferiority may act as an internal signal of down-rank attack that makes an individual feel more and more inferior and defeated. Such rumination may occur despite the fact that an individual successfully escaped from an entrapping external situation because of feelings of failure, which may cause a feeling of internal entrapment (Trachsel, Krieger, Gilbert, & Grosse Holtforth, 2010). Entrapment and arrested flight are major predictors of suicide (O’Connor, 2003; Rasmussen et al., 2010), and the concept of entrapment (arrested and blocked flight motivation) is now recognized as an important process in psychopathology (Taylor et al., 2011).

Another defense when goals are frustrated or blocked is, of course, to be angry and aggressive. However, given that, as noted above, depressed people see themselves in subordinate positions—and we know that subordinates tend or inhibit upward aggression (for fear of retaliation or that such expressions may damage their dependency relationships)—the fight-anger aspect of the innate defensive repertoire can also be activated but must be held in check and arrested. Indeed, anger is known to be activated in depression but is under inhibitory control (van Praag, 1998), and there is now evidence that depression is associated with arrested anger (Gilbert, Gilbert, & Irons, 2004).

These models differ from purely psychological models that focus only on cognitive processes, because they offer links into a continuity of affect regulation system over phylogenetic time, make important connections to animal models of depression, and point to key processes in human depression.

**Aims**

To date most studies have utilized self-report measures to assess depression. This is the first major study to explore the relationship between social ranking variables (i.e., social comparison and submissive behavior), perceptions of entrapment and defeat and depression, in a group of clinical depressed patients evaluated through clinical interviews (SCID-I) and in a control group of general population. We hypothesize that the clinical sample would show higher levels on all study variables. Further, we intended to explore which variables would be the best predictors of the belonging to the clinical or the control group.

**METHOD**

**Participants**

The present study was conducted in a clinical sample of 106 depressed patients and in a control sample of 116 non-depressed subjects from the general community population.

*Control Sample.* A convenience sample from the general community population was collected within the staff of institutions, namely schools and private corporations. Authorization was asked from the manager’s office of 3 private corporations and 3 public institutions, and, after permission was granted, their workers were invited to voluntarily participate. The aims of the investigation were explained, and a date was scheduled to fill the questionnaires. Participants then signed a consent form emphasizing their voluntary contribution and confidentiality. One of the investigators (either JMP or DM) was present during completion of the questionnaires.

Of the 137 individuals that were contacted, 116 agreed to participate in this study and received the complete set of questionnaires (response rate of 85%). Seventy-five percent were female (n = 87), and the mean age was 35.9 years (SD = 10.3), ranging from 18 to 60. Fifty percent of the subjects were married (n = 60), 36% were single (n = 42), 11% were divorced (n = 13), and one was a widow. The participants’ years of education mean was 12.9 (SD = 3.2), and 72%
had middle class professions (e.g., academics, teachers, social workers, engineers, managers, nurses, doctors, middle-level administrators) \((n = 83)\).

**Clinical Sample.** Participants in the clinical sample were recruited in the outpatient clinic at Magalhães Lemos Hospital and integrate a broader research on the socio-cognitive predictors of pharmacological response to depression (Carvalho, 2012). Patients with the suspicion of depression were sent to the clinic by their family doctor, and those whose clinical interview confirmed the diagnosis of depression were submitted to further evaluation for major depression using the Structured Clinical Interview for DSM Axis I Disorders (SCID-I). Patients diagnosed with a major depression episode and without exclusion criteria were invited to participate in the study and were explained its goals. All participants accepted and signed a consent form emphasizing their voluntary contribution and anonymity of their answers. The research project was approved and allowed by the hospital ethical committee.

A total sample of 106 patients met the DSM-IV-TR criteria for major depressive disorder. The response rate was 100%, since all participants diagnosed with major depression and contacted to integrate the study had agreed to participate. Patients with non-controlled organic illness or other major mental illness (e.g., substance abuse or dependence or psychotic disorder) were excluded from the study. Seventy-four percent were female \((n = 78)\), and the mean age was 37.9 years \((SD = 10.6)\), with ages ranging from 18 to 61. Sixty-one percent of the subjects were married \((n = 65)\), 28 percent \((n = 30)\) were single, 8 percent were divorced \((n = 9)\), and two were widows. The participants’ years of education mean was 10.9 \((SD = 4.2)\), and 85% had middle class professions (e.g., academics, teachers, social workers, engineers, managers, nurses, doctors, middle-level administrators) \((n = 90)\).

**Measures**

All instruments used in this study were translated into Portuguese by a bilingual translator, and the comparability of content was verified through stringent back-translation procedures.

**Depression.** The Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I) (First, Spitzer, Gibbon, & Williams, 1996; Portuguese translation and adaptation by Maia, Pinto-Gouveia, & Carvalho, 2007) is a semi-structured interview for assessing the major DSM-IV Axis I diagnoses and was used to establish the major depressive disorder diagnosis. The Clinician Version (SCID-CV) was used in this study. Studies using SCID-I (Stein, Kupfer, & Schatzberg, 2005) found that overall reliability for current episodes of major depression was fair to good in patient samples (Mean \(k = .61\)). The inter-rater reliability ranged from moderate \((k > .75)\) to very high \((k > .85)\) across nine studies. In addition, SCID-I convergent and discriminant validities appear reasonably strong for mood disorders (Stein, Kupfer, & Schatzberg, 2005).

**Beck Depression Inventory (BDI).** The BDI (Beck, Epstein, Brown, & Steer, 1988; Portuguese version by Vaz-Serra & Pio-Abreu, 1973a, 1973b) is a well-known scale for measuring depression used by clinicians and researchers (Beck et al., 1979) and is regarded as the best measure of depression severity in a clinical population (Gotlib & Hammen, 1992). The BDI is a 21-item self-report depression instrument used to screen and measure depression severity and is responsive to change during treatments. BDI scores range from 0 to 63. An extensive review concluded that BDI had good internal consistency with Cronbach’s alpha, ranging between .73 and .95, and a test-retest reliability between .48 and .86 (Stein et al., 2005). In this study, the
Cronbach’s alpha was .86 for the clinical sample and .89 for the control sample.

Social Rank. The Social Comparison Scale (SCS; Allan & Gilbert, 1995; Portuguese translation and adaptation by Gato & Pinto-Gouveia, 2003) was designed to capture the internal sense of social rank by measuring how one thinks one stands in relation to others. It is used to assess participants’ self-evaluation of their relative social rank compared with others. The scale uses a semantic differential approach that was developed into an 11-item scale. For each item, participants were asked “in relation to others I generally feel,” to which they would circle a number on a 10-point Likert scale, for example, Inferior 1 2 3 4 5 6 7 8 9 10 Superior. The 11-item self-report scale measures dimensions that focus primarily on judgments of social rank (inferiority-superiority), relative attractiveness, and judgments of group fit. A low score indicates that a person judges himself relatively inferior compared to others, while a high score indicates a personal judgment of relative superiority. The scale has been found to have good reliability, with Cronbach’s alphas of .86 and .89 for the clinical population and .88 and .91 for the control population. The SCS has been used in a number of studies and has been correlated with psychological vulnerability, psychopathology, particularly, internal and external entrapment, submissive behavior, external shame, social anxiety, eating disorders, anhedonia, and depression (Gilbert & Allan, 1994; Gilbert et al., 1995b, 1996, 2002; Troop et al., 2003). In this study, the Cronbach’s alpha was .93 for the clinical sample and .94 for the control sample.

Entrapment Scale (ES). The ES was created by Gilbert and Allan (1998; Portuguese translation and adaptation by Carvalho, Pinto-Gouveia, Castilho, & Pimentel, 2010) and measures feelings of entrapment. In this 16-item self-report measure, participants are asked to indicate on a 5-point Likert scale the extent to which each statement represents their view of themselves (1 = “not at all like me” to 5 = “extremely like me”). The scale is composed of internal entrapment (IE) and external entrapment (EE) subscales. Internal entrapment (6 items) relates to escape motivation triggered by internal feelings and thoughts (e.g., “I feel powerless to change myself”), while external entrapment (10 items) measures perceptions of entrapment by external situations and escape motivation (e.g., “I am in a relationship that I can’t get out of”). Higher scores indicate greater feelings of entrapment. The original scale had satisfactory psychometric properties (Gilbert & Allan, 1998). For internal entrapment, the
Cronbach’s alpha was .93 for the student group and .86 for the depressed group. For external entrapment, the Cronbach’s alpha was .88 for the student group and .89 for the depressed group. The scale was used in a number of studies and usually correlates with psychological vulnerability, psychopathology, and particularly depressive symptoms, for example, social comparison, submissive behavior, hopelessness, anhedonia, suicidality, and depression (Carvalho, Pinto-Gouveia, Castilho, & Pimental, 2011a; Carvalho et al., 2007; Gilbert et al., 2002; Gilbert & Allan, 1998; Taylor, Wood, Gooding, & Tarrier, 2010). In this study, Cronbach’s alpha of internal entrapment was .92 for controls and .88 for the clinical sample. For the external entrapment subscale, Cronbach’s alpha was .95 for controls and .89 for the clinical sample.

Defeat Scale (DS). The DS was designed by Gilbert & Allan (1998; Portuguese translation and adaptation by Carvalho, Maia, Pimentel, Pereira, & Pinto-Gouveia, 2010), and captures a sense of failed struggle and loss of rank social standing and control. This self-report questionnaire consists of 16 items, and participants were asked to indicate, on a 5-point Likert scale, the degree to which the items represent their thoughts and feelings and how much they had felt defeated in the previous 7 days (e.g., “I feel defeated by life” or “I feel that I am basically a winner”). Higher scores indicate greater feelings of defeat. In the original study, the Cronbach’s alpha was .94 for the student group and .93 for the depressed group. The DS was used in a number of studies, and it usually correlates with psychological vulnerability (e.g., social comparison, submissive behavior, external and internal entrapment, hopelessness, suicidality) and psychopathology, in particular depressive symptoms (Allan & Gilbert, 1998; Carvalho et al., 2008, 2011b; Gilbert et al., 2002; Taylor et al., 2010). In this study, the Cronbach’s alpha was .92 for controls and .93 for the clinical sample.

RESULTS

Data Analysis

Data analysis was carried out using the SPSS package, version 15. In order to compare demographic characteristics between the clinical and control samples, we conducted chi-square tests for categorical variables and independent sample t-tests for the numeric ones. To explore whether there were significant differences between the clinical sample and the control group in the variables studied, independent sample t-tests were conducted. Then, Pearson product-moment correlation coefficients were calculated to explore the association between social rank variables and measures of depression in both samples. Finally, to investigate the contribution of each independent variable to differentiate from the clinical and control groups (outcome variable), we conducted a multiple logistic regression analysis using the enter method.

Descriptives. Regarding social demographic variables, no significant differences were found between the clinical and control samples in terms of age, gender, marital, or economic status, with the exception of educational level, with the control sample showing a greater number of years of education (M = 12.9; SD = 3.2) than the depressed sample (M = 10.9, SD = 4.2) (t(220) = -3.95, p < .001).

The means and standard deviations for all variables in control and patient samples are presented in Table 1. As expected, statistically significant higher mean scores were found in the depressed sample for all measures. The descriptive statistics for the variables studied are similar to those found in previous studies (e.g., Allan & Gilbert, 1995; 1997; 2002; Cheung, Gilbert, & Irons, 2004; Gilbert & Allan, 1994; 1998; Gilbert, 2000; Gilbert & Miles, 2000; Gilbert et al., 2002; O’Connor, Berry, Weiss, & Gilbert,
To explore the relationship between entrapment and defeat, social rank variables, and depressive symptoms, we conducted Pearson product-moment correlations in both control and clinical samples (Table 2).

In the control sample, submissive behavior and social comparison showed a moderate correlation with depression ($r < .40$). Feelings of defeat were highly correlated with internal and external entrapment. However, no significant correlation was found between submissive behavior and social comparison.

In the major depressive disorder sample, all variables were significantly associated with depressive symptomatology, showing robust correlations with BDI scores ($r > .50$). Contrary to controls, depressed patients’ perception of social rank, as measured by social comparison and submissive behavior scales, were strongly inversely correlated. In addition, both social rank variables were also highly or moderately associated with defeat and entrapment.

Further, we explored whether years of education was related to depression, entrapment, defeat, and social rank variables in both groups. In the clinical sample, a positive low correlation was found between years of education and depression.

Multiple Logistic Regression Analysis. To better understand the contribution of external and internal entrapment, defeat, social comparison, and submission to differentiate the clinical from the control group, we conducted a multiple logistic regression analysis (see Table 2). Given the significant correlation between years of education and BDI scores in the clinical group, this variable was also included as a predictor in the regression model.

In the logistic regression model, each independent variable was tested individually and the dependent variable was the variable group with two categories (1 = Patients and 0 = Controls). A series of tests were performed to evaluate data adjustment to the final model. The Omnibus Tests of Model Coefficients ($\chi^2(6) = 151.033; p = .000$) and the Hosmer and Lemeshow Test ($\chi^2(8) = 8.592; p = .378$) showed that the model adequately fitted the data.

The model explained 65.9% of the variance (Nagelkerke $R^2 = .659$) and correctly identified 86.5% of the cases. In particular, 83.0% of the cases were correctly identified by the model in the patients group, and 89.7% in the control group. Outliers analysis revealed that the selected cases through residuals evaluation (DEV, SRE, and ZRE) did not significantly influence the parameters when influence measures were analyzed (Cook, Leverage, and DFBeta), suggesting that the model should be kept (Pestana & Gageiro, 2009; Tabachnick & Fidell, 2007).

### TABLE 1. Means (M), Standard Deviations (SD), and Independent Sample t Test for All Measures Between the Clinical and the Control Samples

<table>
<thead>
<tr>
<th></th>
<th>Clinical sample ($n = 106$)</th>
<th>Controls sample ($n = 116$)</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>BDI</td>
<td>26.22 (10.11)</td>
<td>5.44 (6.00)</td>
<td>18.79</td>
<td>.000</td>
</tr>
<tr>
<td>Submissive behavior</td>
<td>26.78 (11.22)</td>
<td>17.18 (8.30)</td>
<td>7.219</td>
<td>.000</td>
</tr>
<tr>
<td>Social comparison</td>
<td>54.78 (19.42)</td>
<td>70.25 (16.46)</td>
<td>-6.42</td>
<td>.000</td>
</tr>
<tr>
<td>External entrapment</td>
<td>22.06 (10.78)</td>
<td>5.48 (8.42)</td>
<td>12.82</td>
<td>.000</td>
</tr>
<tr>
<td>Internal entrapment</td>
<td>14.02 (6.88)</td>
<td>2.62 (4.19)</td>
<td>15.04</td>
<td>.000</td>
</tr>
<tr>
<td>Defeat</td>
<td>35.85 (13.45)</td>
<td>13.13 (9.76)</td>
<td>14.48</td>
<td>.000</td>
</tr>
</tbody>
</table>

Note. BDI = Beck Depression Inventory.
Although correlation analyses pointed to the existence of strong associations among independent variables, there was no evidence of the presence of multicollinearity. For example, the ratios between beta values and respective standard errors of predictor variables were all above 1.96 (Pestana & Gageiro, 2009; Tabachnick & Fidell, 2007).

In the logistic regression, two predictors emerged as significant of the belonging to the depressed group: internal entrapment, odds ratio (OR) = 1.174, 95% confidence interval (CI) [1.056, 1.305], \( p = .003 \), and defeat, OR = 1.077, 95% CI [1.016, 1.142], \( p = .013 \) (see Table 3).

### DISCUSSION

The purpose of the present study was to investigate a number of processes identified through an evolutionary analysis of mood regulation. These are social comparison, submissive behavior, defeat, and entrapment. We also wanted to compare and contrast how these variables performed in a depressed and non-depressed population.

In line with evolutionary predictions, our results reveal a strong association between ranking variables and higher levels of depression. The clinical sample scored significantly higher than the control sample in all variables. These results are consistent with our hypothesis and previous findings in different samples which found strong associations between social ranking variables and psychopathology, for example, in patients with major depression (Gilbert & Allan, 1998; O’Connor et al., 2002; Sturman & Mongrain, 2008), depression in schizophrenia (Birchwood et al., 2000; Rooke & Birchwood, 1998), social anxiety (Cunha, Soares, & Pinto-Gouveia, 2008; Gilbert, 2000), high-stress mothers (Wilner & Goldstein, 2001), and in eating disorders (Troop et al., 2003).

Results from correlation analysis reveal that in both samples, defeat, internal and external entrapment, and the other social rank variables have moderate to high significant correlations with BDI. This indicates that, as evolutionary theory predicts, they have general and increasing impacts on mood regulation.

In the patients sample, defeat shows the highest correlation with BDI, followed by external entrapment, negative social comparison, internal entrapment, and submissive behavior. In the general population sample, defeat and external and internal entrapment have the same most robust correlation with BDI, but submissive behavior and social comparison have only moderate correlations, showing that patients see their current circumstances with more feelings of inferiority and behaving submissively. Of particular note is that the experience of internal and external entrapment is particularly associated

### TABLE 2. Correlations (Two-Tailed Pearson r Values) for All Scales in Both Samples

<table>
<thead>
<tr>
<th></th>
<th>BDI</th>
<th>SB</th>
<th>SC</th>
<th>EE</th>
<th>IE</th>
<th>D</th>
<th>YoE</th>
</tr>
</thead>
<tbody>
<tr>
<td>BDI</td>
<td>.53**</td>
<td></td>
<td>-.60**</td>
<td>.64**</td>
<td>.53**</td>
<td>.68**</td>
<td>.23*</td>
</tr>
<tr>
<td>SB</td>
<td>.38**</td>
<td>-.64**</td>
<td>.51**</td>
<td>.49**</td>
<td>.56**</td>
<td>-.07ns</td>
<td></td>
</tr>
<tr>
<td>SC</td>
<td>-.33*</td>
<td>-.07ns</td>
<td>-.52**</td>
<td>-.50**</td>
<td>-.63**</td>
<td>.06**</td>
<td></td>
</tr>
<tr>
<td>EE</td>
<td>.77**</td>
<td>.34*</td>
<td>-.36**</td>
<td>.73**</td>
<td>.71**</td>
<td>.04**</td>
<td></td>
</tr>
<tr>
<td>IE</td>
<td>.73**</td>
<td>.30*</td>
<td>-.36**</td>
<td>.73**</td>
<td>.70**</td>
<td>-.01**</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>.77**</td>
<td>.39**</td>
<td>-.46**</td>
<td>.70**</td>
<td>.79**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>YoE</td>
<td>-.16ns</td>
<td>-.03ns</td>
<td>.04ns</td>
<td>-.12ns</td>
<td>-.12ns</td>
<td>-.17ns</td>
<td></td>
</tr>
</tbody>
</table>

**Note.** Patients in italics above the diagonal in the upper side of the table, controls below the diagonal in the lower side of the table. BDI = Beck Depression Inventory; SB = Submissive behavior; SC = Social comparison; EE = External entrapment; IE = Internal entrapment; D = Defeat; YoE = Years of education

\( * p < .01; ** p < .001; ns = Non-significant. \)
with feelings of defeat in the two samples, a finding obtained also in an earlier study (Gilbert & Allan, 1998). These results suggest that life events and difficulties perceived as entrapments predispose to feelings of defeat.

These findings suggest that especially among patients with more submissive behaviors and negative social comparisons, life events and difficulties would be easily interpreted in a way that makes them feel entrapped or defeated, and as a result, they fall more easily into depression.

Three former studies found that life events and difficulties involving entrapment were important predictors of depression (Brown et al., 1995; Kendler et al., 2003), and of depression in schizophrenic patients (Rooke & Birchwood, 1998). In a recent study, Sturman & Mongrain (2008) found that a composite value, called involuntary subordination and formed by the sum of total entrapment and social comparison, predicted depression relapse in a 16-month follow-up study. These results support the importance of studying submissive behaviors and negative social comparison together with internal and external entrapment and defeat in depression.

A logistic regression analysis was conducted to identify which variables were significant predictors of belonging to the clinical (n = 106) and Control (n = 116) groups. Results indicated that internal entrapment and defeat were the two significant predictors of the model. Our findings showed that the probability of being depressed (clinical group) as opposed to not being depressed (control group) increases by a factor of 1.174 per one unit of increase in the internal entrapment scale. This means that individuals with higher internal entrapment have a higher probability of belonging to the clinical group. Similarly, regarding defeat, these results show that an increase of one unit in the defeat scale has a multiplicative effect of 1.077 in the probability of belonging to the clinical group. In other words, higher levels of defeat are associated with a greater probability of being depressed. Moreover, the model correctly identified 83% of the cases in the clinical group and 89.7% in the control group. These results suggest that our model has high sensitivity and specificity, and can have clinical utility.

Our findings can be understood in light of evolutionary and social rank models of depression (Gilbert, 1992, 2005, 2007; Price, 1972; Price & Sloman, 1987; Price et al., 1994; Sloman & Gilbert, 2000) in that they highlight a strong association between internal entrapment and defeat and depression. Regarding internal entrapment, our results suggest that being depressed is highly related to a sense of being trapped, not being able to escape one’s inner feelings and thoughts, and being powerless to change. In terms of defeat, our data point to the importance of a sense of failed struggle and loss of social standing and control in the experience of being depressed. In addition, these findings extend previous research on the social rank model, showing that when all these variables are considered simultaneously, it is internal entrapment and defeat that correctly identify depressed and non-depressed individuals. Also, this is the first study to investigate the impact of each of these variables

<p>| TABLE 3. Logistic Regression Analysis with Internal Entrapment and Defeat Predicting Belonging to the Clinical (n = 106) and Control (n = 116) Groups |
|---------------------------------|-----------------|-----|----|----|----------|----------|---------|</p>
<table>
<thead>
<tr>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal entrapment</td>
<td>.160</td>
<td>.054</td>
<td>8.772</td>
<td>1</td>
<td>.003</td>
<td>1.174</td>
<td>1.056</td>
</tr>
<tr>
<td>Defeat</td>
<td>.074</td>
<td>.030</td>
<td>6.232</td>
<td>1</td>
<td>.013</td>
<td>1.077</td>
<td>1.016</td>
</tr>
<tr>
<td>Constant</td>
<td>-3.902</td>
<td>1.713</td>
<td>5.192</td>
<td>1</td>
<td>.023</td>
<td>.020</td>
<td></td>
</tr>
</tbody>
</table>
in predicting the belonging to a depressed or non-depressed group.

Additionally, although correlation analysis results revealed that having more number of years of education was associated with greater depressive symptoms in the clinical group, this variable did not emerge as a significant predictor of belonging to the clinical or control groups.

These results have important implications for the clinical assessment and treatment of major depressive disorder, suggesting that evaluation of the sense and sources of defeat and feelings of internal entrapment could provide important information about themes to develop in such treatment (Gilbert, 2007). Specifically, it might be important in depression therapy to target that sense of being trapped in one’s inner feelings and thoughts and of feeling defeated, exploring with the patient possible ways to get out from under these feelings.

**Limitations and Future Directions**

Our results should be interpreted while considering a few methodological limitations. One limitation is the transversal nature of the study, as it is impossible to determine the causal relations between variables. In fact, our data could be interpreted the opposite way, meaning that current depression could influence feelings of entrapment and defeat. So, the development of prospective studies to evaluate the causal relations between the studied variables might help to address this limitation. In spite of other possible interpretations for our results, they emphasize that there is a strong association between depression and feelings of entrapment and defeat. On the other hand, a depression diagnosis does not exclude the hypothesis that a relatively high percentage of patients also have Axis II psychiatric co-morbidity, and that may interfere with the results.

Nonetheless, the present study gives strong support to the importance of defeat and internal entrapment in clinical depression and is in agreement with Gilbert’s proposal that defeat and entrapment are important variables for understanding the social rank model of depression (Taylor et al., 2011). Defeats and entrapments appear to be central to a biopsychosocial model of depression that can bridge between animal and human models of mood regulation and mood disorder. A better understanding of these processes will help to build physiological and psychotherapy models, as well as offer opportunities for early detection and prevention (Gilbert, 2007). We are undertaking future work to explore the degree to which these variables can also predict response to pharmacological treatment and relapse.

**REFERENCES**


