The nature and measurement of depression

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ABSTRACT. The initial goal of this study was to determine if the cognitive and affective components of depression, which are measured collectively by the BDI Cognitive-Affective subscale, could be identified as separate factors in a non-clinical population. A pool of 40 cognitive and affective depression items was adapted from the BDI and three other widely used depression measures. These items were administered with both state and trait instructions to 251 university students, who also responded to the BDI, Zung, CES-D, and trait measures of anxiety, anger and curiosity. Contrary to the expected finding of cognitive and affective factors, two very strong factors were identified, which were defined by items that described the presence or absence of state and trait depression. The best depression-present (dysthymia) and depression-absent (euthymia) items were selected to form 20-item State (S-Dep) and Trait (T-Dep) Depression scales, each with 10-item S-Dep and T-Dep Dysthymia and Euthymia subscales. The alpha coefficients for the S-Dep and T-Dep scales and subscales for the total sample, and in separate analyses for females and males, were .90 or higher (mdn. r = .93), indicating strong internal consistency. The T-Dep Scale correlated highly with the BDI, Zung and CES-D (mdn. r = .80), providing impressive evidence of concurrent validity. The correlations of the T-Dep Scale with all three widely used depression measures were also substantially higher than the corresponding correlations of the S-Dep Scale (mdn. r = .66). These findings suggested that while the BDI, Zung and CES-D measure both state and trait depression, they appear to more accurately assess relatively persistent trait-like characteristics.

KEYWORDS. Depression. State. Trait. Instrumental study.

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RESUMEN. El objetivo de este estudio instrumental fue determinar si los componentes cognitivos y afectivos de la depresión podrían ser identificados como factores separados en una muestra no clínica. Estos componentes fueron evaluados colectivamente a través de la subescala cognitiva-afectiva del BDI. Un conjunto de 40 ítems de depresión cognitiva y afectiva fueron adaptados a partir del BDI y otras tres pruebas de depresión frecuentemente utilizadas. Estos ítems se administraron con instrucciones de tipo estado y rasgo a 251 estudiantes universitarios, quienes también respondieron al BDI, Zung, CES-D y a otras medidas de rasgo, ansiedad, ira y curiosidad. Los resultados obtenidos contradicen a los esperados para los factores cognitivo y afectivo, ya que dos factores muy significativos fueron identificados y definidos por ítems que describen la presencia o ausencia de la depresión estado y rasgo. Los mejores ítems representativos de la presencia (distimia) y de la ausencia (eutimia) de depresión fueron seleccionados para formar escalas de 20 item de depresión estado (S-Dep) y depresión rasgo (T-Dep), cada una formada por subescalas de 10 ítem de S-Dep y T-Dep para distimia y eutimia. Los coeficientes alfa de las escalas S-Dep y T-Dep y las subescalas de la muestra total, en análisis separados para mujeres y hombres, fueron de 0,90 o superiores, indicando una fuerte consistencia interna. La escala T-Dep correlacionó significativamente con el BDI, Zung y CES-D, proporcionando una fuerte evidencia de validez concurrente. Las correlaciones de la escala T-Dep con las otras tres medidas de depresión frecuentemente utilizadas fueron también sustancialmente mayores a las correspondientes de la escala S-Dep. Estos resultados sugieren que aunque el BDI, Zung y CES-D evalúan depresión estado y rasgo, parecen evaluar con mayor precisión las características de rasgo relativamente persistentes.

PALABRAS CLAVE. Depresión. Estado. Rasgo. Estudio instrumental.

RESUMO. O objective inicial deste estudo foi determinar se os componentes afectivos e cognitivos da depressão, que são medidos colectivamente pela escala cognitivo-afectiva do BDI, podem ser identificados como factores separados numa população não clínica. Foram adaptados 40 itens de depressão afectiva e cognitiva, do BDI e de três outras medidas de depressão largamente usadas. Estes itens foram administrados com instruções de traço e de estado a 251 estudantes universitários, que também responderam ao BDI, Zung, CES-D e medidas de traço de ansiedade, raiva e curiosidade. Contrariamente aos factores afectivos e cognitivos esperados, foram identificados dois fortes factores, que foram definidos por itens que descrevem a presença ou ausência de estado e traço de depressão. Foram seleccionados os melhores itens de depressão-presente (distimia) e depressão-ausente (eutimia) para formar escalas de Depressão com 20 itens de Estado (S-Dep) e Traço (T-Dep), cada uma com 10 itens S-Dep e T-Dep sub-escalas de Distimia e Eutimia. O coeficiente alfa para as sub-escalas S-Dep e T-Dep e as sub-escalas para o total da amostra e em análises separadas para os homens e para as mulheres, foi igual ou superior a .90 (mdn r= .93), indicando uma forte consistência interna. A Escala T-Dep mostrou-se altamente correlacionada com BDI, Zung e CES-D (mdn r=.80), fornecendo evidência da validade concorrente. As correlações da Escala T-Dep com as outras medidas de depressão largamente usadas também foram substancialmente superiores às correlações correspondentes com a Escala S-Dep (mdn r=.66). Estes resultados sugeriram que apesar de o BDI, Zung e CES-D medirem quer a depressão de estado quer a depressão de traço, parecem avaliar mais precisamente características relativamente persistentes como o traço.

PALAVRAS CHAVE. Depressão. Estado. Traço. Estudo instrumental.

Introduction

Depression is generally considered to be the most prevalent of all diagnosed mental disorders (Gotlib, Roberts, and Gilboa, 1996; Moran and Lambert, 1983; Wolman and Stricker, 1990). The World Health Organization estimates that 340 million people currently suffer from some form of clinical depression, and that depression will become "the leading cause of disability and the 2nd leading contributor to the global burden of disease by the year 2020" (WHO, 2001). In the USA, it is estimated that 10 percent of the population has a depressive disorder (Rosenfeld, 1999), and that one out of every four Americans will experience symptoms of depression that are serious enough to warrant treatment at some time during their lives (Marsella, Hirschfeld, and Katz, 1987). Given its widespread prevalence, it is not surprising that depression has been described as "the common cold of mental health problems that strikes the rich and poor as well as the young and the old" (Rosenfeld, 1999, p.10). Symptoms of depression vary in severity, from feeling sad or gloomy for a relatively short period of time, to deep despair, extreme guilt, hopelessness, and thoughts of death that could result in suicide. Persistent depression can also produce behavioral and physical symptoms such as fatigue, insomnia, impotence, frequent crying, chronic aches and pain, and excessive gain or loss in weight (Rosenfeld, 1999). Clearly, depression is a complex, multifaceted syndrome that is comprised of a number of underlying dimensions.

In a comprehensive review of the history of depression and melancholia, Jackson (1986, 1995) traces the origins of these concepts to the 5th Century B.C. writings of Hippocrates, the father of modern medicine. The Greek term, *melancholia*, was used by Hippocrates to describe a "black mood", which he attributed to excessive black bile in the brain. Melancholia was considered to be a mental disorder that involved prolonged sadness and fear, along with "despondency, sleeplessness, irritability, restlessness," and aversion to food (Jackson, 1995, p. 8). In the 2nd Century A.D., Rufus of Ephesus and Galan described persons who suffered from melancholia as sad, gloomy, and fearful, with delusional ideas involving guilt and sin. Galan's restatement of Hippocrates' description of melancholia as consisting of affective feelings, self-depreciating cognitions, and somatic symptoms prevailed for the next 1,500 years. During the 17th and 18th centuries, there were occasional references in English to the term depression, which came from the Latin, *deprimere,* to press down (Jackson, 1995). In the 19th Century, Pinel and Greisinger considered depression to be synonymous with melancholia, which Pinel defined as "characterized by great depression of spirits" that involved gloom, despair, and suspicion (Jackson, 1995, p. 7). These negative mood states were also emphasized by Greisinger (1845). In the 1880's, Emil Kraepelin (1887) differentiated between melancholia, which he regarded as a diagnostic entity or type of insanity, and depression, which he used mainly to describe dysphoric mood or affect. Although Kraepelin clearly distinguished between depression and melancholia, subsequent ambiguity in the definition of depression appears to have resulted from differences in the emphasis on depression as an affective mood that varies in intensity and the diagnosis of depression as a psychiatric disorder (Beckham, 1991; Beckham, Leber, and Youll, 1995; Jackson, 1995; Koebler, Moul, and Farmer, 1995).

While the criteria for the diagnosis of depression have always emphasized negative affective feelings and self-depreciating cognitions, manifestations of somatic symptoms and performance deficits are also essential requirements for this diagnosis. In the first edition of the American Psychiatric Association's (1952) *Diagnostic and Statistical Manual of Mental Disease (DSM),* depression was defined as an affective mental disorder with dysphoric mood and loss of interest "that cannot be described or broken down into simple components" (Moran and Lambert, 1983, p.264). This definition of depression, which also included the manifestation of somatic symptoms, was essentially unchanged in the DSM-II (American Psychiatric Association, 1968), which provided guidance for the construction of the Hamilton (1960) Rating Scale for Depression (HRS-D) and the original form of the Beck Depression Inventory (BDI) (Beck, Ward, Mendelson, Mock, and Erbaugh, 1961).

The definition of depression and the criteria for its diagnosis as a clinical syndrome are reflected in the content of the items in psychometric tests that are used to assess depression. Ritterband (1995) compared the number of citations of the BDI in articles published over the past two decades with those of three other widely used depression measures, the ZUNG Self-rating Depression Scale (Zung, 1965, 1967, 1969, 1986), the Center for Epidemiological Studies Depression Scale (CES-D) (Radloff, 1977), and Lubin's (1965, 1981) Depression Adjective Check List (DACL). His finding that the BDI was cited four times more frequently than any of the other three depression measures clearly indicated that the BDI is currently the most widely used psychometric measure of depression, and the standard by which other depression measures are evaluated. Revisions of the BDI, as well as the development of other widely used depression measures, have been guided by psychiatric nosology as defined by the DSM. The BDI items were constructed to assess increasing levels of the severity of symptoms of depression that were most often reported by depressed psychiatric patients, and that were rarely reported by non-depressed psychiatric patients (Beck *et al.,* 1961). Consequently, the cognitive, affective, and physiological symptoms, and the performance decrements that are assessed by the BDI evaluate the severity of depression as a mental disorder (Beck, 1963; Beck, 1971; Beck, Rush, Shaw, and Emery, 1979; Beck and Steer, 1987; Beck, Steer, and Brown, 1996). Beck and his colleagues consider the cognitive-affective manifestations of depression to be the most essential defining characteristics of depressive disorders. According to Beck, cognitions with "ideational content that emphasizes loss or deprivation are the essential qualities of the state of depression" (Beck and Clark, 1988, p. 23), and "automatic thoughts and images of loss and failure dominate the stream of consciousness" of depressed persons (Clark, Beck, and Stewart, 1990, p.2). Beck also makes an important distinction between "hot" cognitions that involve depressive feelings and negative self-evaluative thoughts (e.g., "I feel that I am a failure") and "cold" cognitions (e.g., "I guess it will be a cloudy day") in which the person has no particular investment (A. T. Beck, personal communication, July 27, 2001). It follows that "hot" cognitions, such as thoughts of being a failure, trigger negative feelings because of their significance to a person's self concept. Factor analyses of responses to the 21 BDI-IA items have consistently found, before rotation, a single underlying general depression factor (Byrne, Baron, and Campbell, 1993; Clark,

Cavanaugh, and Gibbons, 1983; Shaver and Brennan, 1991; Tanaka and Huba, 1984). With oblique rotation, two highly correlated factors have been identified that provided the basis for deriving the BDI Cognitive-Affective and Somatic-Performance subscales (Beck and Steer, 1987). The Cognitive-Affective subscale consists of items that assess negative thoughts and feelings, whereas the Somatic-Performance subscale is comprised of items that evaluate somatic symptoms and performance decrements. A similar two-factor structure was found for the revised BDI-II, though the factors were somewhat different for psychiatric outpatients and college students (Beck *et al.,*1996). Ritterband and Spielberger (1996) examined the factor structure of the BDI-IA for a large heterogeneous sample of university students. Consistent with the results of previous studies (Clark *et al.*, 1990; Shaver and Brennan, 1991; Tanaka and Huba, 1984), a very strong depression factor was found before rotation for both males and females, along with two relatively weak factors. Moreover, almost all of the BDI items had dominant salient loadings (.30 or greater) on this strong first factor, whereas item loadings on the second and third factors were either secondary or non-salient. With oblique (promax) rotation, two factors were identified, defined respectively by the items comprising the BDI Cognitive-Affective and Somatic-Performance subscales. These findings were generally consistent with the results of previous studies of the factor structure of the BDI (e.g., Beck and Beamesderfer, 1974; Beck and Steer, 1987; Weckowicz, Muir, and Cropley, 1967).

The importance of differentiating between the depressive thoughts and feelings assessed by the BDI Cognitive-Affective subscale and the physiological symptoms and performance decrements measured by the Somatic-Performance subscale has been consistently emphasized by Beck and his colleagues (Beck *et al.,* 1996; Beck and Steer, 1987; Beck, Steer, and Garbin, 1988) and by other investigators (Clark, Watson, and Reynolds, 1995; Endler, Rutherford, and Denisoff, 1999). Twelve of the 13 BDI Cognitive-Affective subscale items emphasize depressive thoughts (e.g., "I am disappointed in myself", "I don't enjoy things the way I used to") which are clearly "hot" or affective cognitions that give meaning to the circumstances under which feelings of depression are experienced. In contrast, "I feel sad", is the only BDI-IA item that gives relatively little emphasis to associated thoughts or cognitions, and may thus be conceptualized as an affective feeling item. High scores on the BDI Cognitive-Affective subscale are considered by Beck to be an essential requirement for differentiating between depressed psychiatric patients and medical patients "whose symptoms, such as fatigue, might also be mistaken for those of depression" (Beck and Steer, 1987, p.16). Consistent with this interpretation, Ritterband (1998) found that the significantly higher BDI Depression scores of cancer patients, when compared with healthy controls, were due almost entirely to their substantially higher scores on the BDI Somatic-Performance subscale. Since no difference was found in the scores of the cancer patients and healthy controls on the BDI Cognitive-Affective subscale, the higher overall BDI Depression scores of the cancer patients were attributed to the somatic symptoms caused by their medical condition and/or the treatment they were receiving, and were not due to clinical depression as a mood disturbance. Similarly, Callahan, Kaplan, and Pincus (1991) found that rheumatoid arthritis patients had higher BDI Depression scores, due primarily to their elevated scores on the BDI Somatic-Performance subscale.

The validity of the BDI as a measure of clinical depression is well established. However, the instructions for responding to this measure and the content of the individual BDI items appear to confound the assessment of the severity of depression at a particular time with individual differences in the frequency that symptoms of depression are experienced. The instructions for the original BDI (Beck *et al.,* 1961), which required respondents to report how they felt at the time they were tested, led Sacco (1981) to conclude "... that the BDI scores represented mood states for the day on which the BDI was administered" (Beck and Steer, 1987, p. 4). In keeping with subsequent modifications of the DSM, respondents to the BDI-IA (Beck *et al.,* 1996) were instructed to report how "... you have been feeling the past week, including today" (Beck and Steer, 1987, p. 5). The instructions for the BDI-II, the most recent revision of this measure, require the respondent to indicate how "... you have been feeling during the past two weeks, including today" (Beck *et al.,* 1996, p. 8). Thus, the BDI-IA and, especially, the BDI-II, appear to assess depression as a more persistent state or relatively stable trait or syndrome.

The major goal of the present study was to determine if depressive feelings and cognitions, such as those measured collectively by the BDI Cognitive-Affective subscale, could be identified as separate dimensions of depression. Items that described affective feelings or affective cognitions were adapted from the BDI and three other widely used measures of depression to assess the intensity and frequency of occurrence of depressive feelings and cognitions. A second goal was to develop state and trait scales for assessing depressive feelings and cognitions, and to evaluate the internal consistency and the concurrent, convergent, and divergent validity of these scales. The structure of this article follows the procedures suggested by Bobenrieth (2002) for research papers on health science, and the general methodology for classification and description proposed by Montero and León (2002).

Method

Subjects

The participants in this study were 251 university students (170 females, 81 males) enrolled in undergraduate courses at the University of South Florida who received extra credit toward their final course grade for participating. Consistent with the general enrollment of a large state university located in an urban area, a substantial number of participants were employed at least part-time, and more than 40 percent were 23 years of age or older.

Instruments

The study participants responded to a battery of five psychometric tests, given in the following sequence: (1) Beck Depression Inventory; (2) Zung Self-rating Depression Scale; (3) Center for Epidemiologic Studies Depression Scale; (4) State-Trait Personality Inventory; and (5) a questionnaire consisting of 40 state and 40 trait items that were constructed to assess affective feelings and cognitions associated with depression. Each of these measures is briefly described below.

—*Beck Depression Inventory (BDI).* The revised 21-item BDI, which Beck *et al.* (1996) refer to as the BDI-IA, was used in this study to assess cognitive-affective, behavioral, and somatic symptoms of depression. The participants were instructed to respond to the BDI items by choosing one of four statements of varying severity that "best describes the way you have been feeling the past week, including today" (Beck and Steer, 1987, p. 5). Each item is scored on a 4-point rating scale, with values ranging from 0 (No depression) to 3 (Maximum depression). The 13-items comprising the BDI Cognitive-Affective subscale evaluate sadness, pessimism, guilt feelings, irritability, suicidal thoughts, and other affective and cognitive symptoms of depression. The BDI Somatic-Performance subscale consists of 8 items that assess sleep disturbance, loss of appetite, fatigue, work difficulty, and other somatic and performance decrements. The reliability and validity of BDI scores based on all 21 items have been established for psychiatric and medical patients and normal adults in a number of studies (e.g., Beck and Steer, 1987; Beck *et al.,* 1988). However, relatively little research has been reported on the BDI subscales (Endler *et al.,* 1999).

—*Zung Self-Rating Depression Scale (ZUNG).* The 20-item Zung (1965) Scale was designed to assess the severity of depression. Respondents are instructed to report *how often* during the past week specific affective, cognitive, physiological-somatic, and psychomotor symptoms of depression were experienced. For example, in responding to the item, "I feel down-hearted, blue, and sad", subjects rate themselves on the following 4-point frequency scale: (1) None or little of the time; (2) Some of the time; (3) Good part of the time; (4) Most or all of the time. Summing the ratings for the 20 items yields a score range of 20 to 80. Moderate to high correlations of the ZUNG with other widely used measures of depression have been reported (e.g., Biggs, Wylie, and Ziegler, 1978; Marone and Lubin, 1968; Zung, 1967, 1969, 1986).

—*Center for Epidemiologic Studies Depression Scale (CES-D).* The 20-item CES-D, which was developed to measure depressive symptomatology in non-psychiatric populations (Radloff, 1977), assesses depressed mood, feelings of guilt, failure and helplessness, psychomotor retardation, loss of appetite, and sleep disturbance. Respondents report how often during the past week they felt or behaved as described by each of the 20 CES-D items by rating themselves on a 4-point frequency scale. Scores for each item can vary from 0 ("Rarely or none of the time; less than 1 day") to 3 ("Most or all of the time; 5-7 days"); scale scores range from 0 to 60. Impressive evidence of the concurrent and convergent validity of the CES-D is reflected in correlations of .81 with the BDI and .90 with the ZUNG (Weissman, Prussoff, and Newberry, 1975).

—*State-Trait Personality Inventory (STPI).* The 60-item STPI (Form X) consists of six 10-item scales for measuring state and trait anxiety, anger, and curiosity (Spielberger *et al.,* 1979). In responding to the STPI state items, participants rate the intensity of their feelings at a particular time on a 4-point scale. For example, "I feel nervous": (1) Not at all; (2) Somewhat; (3) Moderately so; (4) Very much so. The STPI trait items assess how frequently feelings of anxiety,

anger, and curiosity are generally experienced. Subjects respond to each trait item by rating themselves on a 4-point frequency scale, e.g., "I feel inadequate": (1) Almost never; (2) Sometimes; (3) Often; (4) Almost always. Alpha coefficients, ranging from .80 to .87 for the trait measures, and from .78 to .92 for the state measures, provide evidence of the internal consistency of the six STPI scales (Jacobs, Latham, and Brown, 1988).

—*State (S-Dep) and Trait (T-Dep) Depression Items*. A pool of 40 items was constructed to assess depressive feelings and cognitions by identifying and adapting cognitive-affective items from the BDI and three other widely-used depression measures: The Zung, the CES-D, and the Depression Scale of Zuckerman and Lubin's (1985) Multiple Affect Adjective Check List (MAACL). Eleven BDI items and 29 items from the other three scales were adapted with both state and trait instructions to assess the intensity of affective feelings of depression (S-Dep) and individual differences in depression as a personality trait (T-Dep). The wording for each item followed, as closely as possible, the description of depressive feelings or cognitions in the measure from which it was adapted. Participants responded to each S-Dep and T-Dep item by rating themselves on the same 4-point intensity and frequency scales that are used with the STPI to assess emotional states and personality traits (Spielberger *et al.,* 1979).

Procedure

The participants in this study were tested during regular class periods, or in small groups in which they volunteered to participate outside of class time. At the beginning of each testing session, the experimenter introduced himself and provided general information about the study. The participants were informed that they would be asked to respond anonymously to several questionnaires that inquired about the feelings and attitudes of college students, and that their participation in the study was completely voluntary. They were also told that the questionnaires would take approximately one hour to complete, and that the results would be used only for research purposes. The packet of questionnaires included the BDI, ZUNG, CES-D, and the STPI Trait scales, which were presented with standard instructions in the order indicated. The final questionnaire was comprised of the pool of 40 S-Dep and 40 T-Dep items. Participants first responded to the S-Dep items and then immediately responded to the T-Dep items.

Results

The primary goal of this study was to determine if factor analysis of items that described depressive feelings and cognitions could identify independent factors from which scales could be derived for measuring the affective feelings and cognitions that are associated with depression. The responses of the 251 study participants to the pool of 40 state and 40 trait items constructed to assess depressive feelings and cognitions were evaluated in separate principle axis factor analyses of the S-Dep and T-Dep items. It was expected that two factors, each defined by items that assessed either affective feelings or affective cognitions, would be identified in the separate analyses of the state

and trait depression items. In the analysis of the state depression (S-Dep) items for the combined sample of 251 students, eigenvalues of 1.00 or greater (17.92, 2.92, 1.12, 1.06) indicated that four factors could be extracted. However, Cattell's (1966) scree test suggested the extraction of only two factors. In keeping with these criteria, 2, 3 and 4 factor principle axis solutions were computed. The two-factor solution for the combined sample with oblique (promax) rotation had the best simple structure, and was considered most meaningful. The findings for females and males in the separate principle factor analyses of the S-Dep items, both before and after oblique rotation, were quite similar to those obtained for the combined sample. The results of the analyses of the S-Dep items for the combined sample, before and after rotation, and for females and males after rotation, are reported in Table 1. Before rotation, only one large state depression factor was found for the combined sample; all 40 S-Dep items had dominant salient loadings of .43 or higher on this very strong first factor; the loadings of 37 of these items were greater than .50. The loadings of all 25 depression-present items were positive on this factor, whereas the loadings for the 15 depression-absent items were all negative. It may also be noted in Table 1 that the depression-absent items had stronger loadings on the second factor than the depression-present items. Of the 40 S-Dep items, only 5 items, which are underlined in Table 1, had dual secondary loadings of .40 or greater on the second factor.

With promax rotation, two very distinct S-Dep factors were identified for the combined sample, and in the separate analyses for both men and women (see Table 1). However, contrary to the expected finding of factors comprised of items that described affective feelings or affective cognitions, the two factors consisted of items indicating either the presence or absence of depression. The S-Dep items are listed in Table 1 in the descending order of magnitude of their dominant loadings for the combined sample after rotation on either Factor F-I or F-II. Of the 25 S-Dep items with content indicating the presence of depression, 21 had dominant salient loadings of .40 or greater on F-I for the combined sample, and for both females and males, whereas 14 of the 15 S-Dep depression-absent items had dominant salient loadings on F-II. Two depression-present items (30, 33), listed at the bottom of Table 1, had dominant negative loadings on Factor II for the combined sample, and for both sexes.

The results of the factor analysis of the trait depression (T-Dep) items are reported in Table 2. For the combined sample, eigenvalues greater than 1.00 (17.82, 2.04, 0.90, 0.77) and the scree test both indicated that only two factors should be extracted. All but one of the 40 T-Dep items had dominant salient loadings on the first factor of .40 or higher before rotation, providing strong evidence of a single underlying trait depression dimension. With promax rotation, two distinctive but substantially correlated T-Dep factors, consisting of items that described either the presence or absence of depression, were identified for the combined sample, and for both females and males. The T-Dep items are listed in Table 2 in the descending order of their dominant loadings for the combined sample on either Factor I or Factor II after rotation. Of the 25 T-Dep depression-present items, 20 of these items had dominant salient loadings of .40 or greater on the F-I factor for the combined sample, and for both females and males. Of the 15 T-Dep items with content indicating the absence of depression, 14 items had dominant loadings of .50 or higher on Factor II in all three analyses.

TABLE 1. Factor loadings based on principle axis factor analyses of the 40 State Depression items for the combined sample before rotation, and for the combined sample and for females and males with promax rotation.

STATE DEPRESSION ITEMS[1]	PRINCIPLE FACTORS[2] COMBINED SAMPLE		PROMAX ROTATION[3] COMBINED SAMPLE		FEMALES		MALES	
	F-I	F-II	F-I	F-II	F-I	F-II	F-I	F-II
08 I feel low	.76	.34	.85		.83		.90	
09 I feel miserable	.67	.40	.85		.76		.92	
03 I feel hopeless	.77	.31	.83		.79		.86	
25 I feel awful	.72	.33	.82		.79		.86	
31 I feel rejected	.75	.30	.80		.73		.85	
16 I feel blue	.76	.26	.77		.71		.91	
21 I am disappointed in myself	.73	.26	.74		.68		.85	
01 I feel depressed	.75	.23	.73		.62		.82	
26 I feel gloomy	.72	.23	.72		.63		.85	
18 I feel downhearted	.70	.25	.72		.65		.93	
10 I feel I've failed more than average	.63	.29	.71		.71		.79	
32 I am suffering	.75	.21	.71		.60		.79	
40 I feel terrible	.74	.21	.71		.65		.79	
06 I feel sad	.73	.19	.68		.65		.67	
19 I feel I may be punished	.55	.23	.60		.68		.55	
02 I cry more now than I used to	.62	.17	.58		.66		.78	
15 I feel guilty a good part of the time	.62	.11	.52		.48		.61	
22 I feel lonely	.67	.08	.52		.46		.57	
38 I feel unhappy	.64	.10	.52		.47		.74	
07 I feel discouraged about the future	.67	.07	.51		.43		.57	
37 I feel that people dislike me	.57	.09	.47		.42		.58	
12 I don't enjoy things the way I used to	.51	-.03	.30		.37			-.35
24 I am critical of myself for my weaknesses	.43	-.03	.25			-.23		-.31
28 I feel healthy	-.65	.52		.91		.90		.93
29 I feel safe	-.58	.44		.78		.74		.85
13 I feel peaceful	-.71	.38		.77		.82		.64
04 My mind is as clear as it used to be	-.57	.42		.75		.74		.78
23 I feel active	-.56	.41		.74		.72		.80
39 I feel alive	-.75	.31		.71		.66		.81
35 I feel enthusiastic	-.74	.31		.70		.70		.75
11 I enjoy life	-.75	.29		.69		.73		.58
27 I feel hopeful about the future	-.69	.30		.67		.65		.77
17 I feel whole	-.68	.29		.66		.68		.59
14 I feel strong	-.71	.28		.65		.70		.53

Item								
34 I find it easy to make decisions	-.54	.34		.64		.66		.68
36 I feel fine	-.72	.22		.59		.56		.67
05 I feel good	-.71	.13		.48		.47	-.43	.57
20 I feel happy	-.78	.09	-.42	.46		.47	-.54	.47
33 Put off decisions more than I used to	.49	-.18		-.44		-.43		-.40
30 I am less interested in other people...	.46	-.14		-.37		-.38		-.32
Eigenvalues:	17.92	2.92	10.82	7.84	9.50	7.91	13.80	8.36

[1] Items are listed in the descending order of the magnitude of their dominant loadings on Factor I or II for the combined sample with promax rotation.
[2] All loadings on both factors are reported. Duel salient loadings of .40 or greater on Factor II are underlined.
[3] Dominant loadings are reported for each item; only salient secondary loadings (.40 or greater) are reported.

TABLE 2. Factor loadings based on principle axis factor analyses of the 40 Trait Depression items for the combined sample before rotation, and for the combined sample and for females and males with promax rotation.

| | PRINCIPLE FACTORS[2] | | PROMAX ROTATION[3] | | | | | |
| | COMBINED SAMPLE | | COMBINED SAMPLE | | FEMALES | | MALES | |
TRAIT DEPRESSION ITEMS[1]	F-I	F-II	F-I	F-II	F-I	F-II	F-I	F-II
26 I feel gloomy	.78	.31	.85		.77		.89	
25 I feel awful	.77	.27	.79		.80		.77	
40 I feel terrible	.78	.26	.79		.71		.81	
09 I feel miserable	.80	.24	.78		.67		.76	
08 I feel low	.76	.24	.75		.76		.79	
01 I feel depressed	.75	.23	.73		.66		.78	
18 I feel downhearted	.66	.27	.72		.66		.76	
32 I am suffering	.72	.23	.72		.57		.67	
31 I feel rejected	.65	.24	.69		.56		.83	
16 I feel blue	.70	.21	.68		.62		.83	
06 I feel sad	.72	.20	.68		.58		.81	
38 I feel unhappy	.66	.18	.63		.45		.74	
03 I feel hopeless	.73	.14	.62		.50		.70	
21 I am disappointed in myself	.72	.13	.60		.65		.45	
15 I feel guilty a good part of the time	.60	.17	.58		.62		.65	
22 I feel lonely	.63	.16	.58		.54		.59	
10 I feel I've failed more than average	.69	.14	.58		.66			
19 I feel I may be punished	.45	.17	.48		.59		.26	-.43
07 I feel discouraged about the future	.70	.03	.47		.58			
37 I feel that people dislike me	.48	.10	.41		.28		.43	-.44
12 I don't enjoy things the way I used to	.56	.03	.38			-.36	.61	
02 I cry more now than I used to	.44	.08	.37		.41		.79	
33 Put off decisions more than I used to	.53	-.01	.32			-.33	.45	
30 I am less interested in other people...	.37	-.01	.22			-.36	.47	
24 I am critical of myself for my weaknesses	.42	-.04		-.25	.36			-.58
29 I feel safe	-.57	.41		.78		.80		.79
17 I feel whole	-.70	.36		.78		.79		.84
28 I feel healthy	-.65	.34		.73		.73		.68
11 I enjoy life	-.77	.27		.71		.76		.69
13 I feel peaceful	-.66	.31		.70		.65		.67
14 I feel strong	-.68	.30		.70		.63		.82
05 I feel good	-.81	.24		.68		.70		.75
39 I feel alive	-.66	.29		.68		.83		.42
20 I feel happy	-.84	.22		.67		.78	-.43	.54

Item							
27 I feel hopeful about the future	-.73	.23	.64	—	.66	—	.65
23 I feel active	-.60	.28	<u>.63</u>	—	<u>.54</u>	—	<u>.73</u>
04 My mind is as clear as it used to be	-.57	.27	.61	—	.54	—	.70
36 I feel fine	-.75	.20	.61		.64		.59
35 I feel enthusiastic	-.77	.18	.59		.62	-.40	.50
34 I find it easy to make decisions	-.54	.19	.49		.52		.30
Eigenvalues:	17.82	2.04	9.67	7.22	8.48	7.77	11.64 7.90

[1] Items are listed in the descending order of the magnitude of their dominant loadings on Factor I or II for the combined sample with promax rotation.

[2] All loadings on both factors are reported. Dual salient loadings of .40 or greater on Factor II are underlined.

[3] Dominant loadings are reported for each item; only salient secondary loadings (.40 or greater) are reported.

In summary, before rotation, the principle axis factor analyses of the S-Dep and T-Dep items for the combined sample, and for both females and males, identified a single depression factor. All 40 S-Dep items and 39 of the 40 T-Dep items had dominant salient loadings of .40 or greater on this very strong depression factor for the combined sample. With promax rotation, two factors were clearly identified for the combined sample, and for both females and males. However, the two factors were defined by items with content that described either the presence or absence of depression, rather than affective feelings and cognitions. Therefore, the major goal of this study was modified to select the best items from the item pool for developing state and trait depression scales, each with subscales for assessing the presence or absence of depression.

Selection of items for State and Trait Depression Scales and subscales

Of the 40 S-Dep items, the 25 items listed above the dotted lines in the factor columns of Table 1 (14 S-Dep present; 11 S-Dep absent) had dominant loadings of .65 or greater on either Factor I or Factor II for the combined sample with promax rotation. These 25 items were further evaluated in a principle axes factor analysis for the combined sample with promax rotation (results not reported in tabular form). The three S-Dep items with the smallest dominant loadings in this analysis (10, 17, 21) were dropped from further consideration, leaving 12 S-Dep present and 10 S-Dep absent items. In order to select the 10 best items for the S-Dep depression-present subscale the content validity of the 3 items with the smallest dominant loadings on the S-Dep present factor was examined. Item #6 ("I feel sad"), which was adapted from the BDI, was considered to be more closely related to affective feelings of depression than either item #32 ("suffering") or #40 ("terrible"). Therefore, item #6 was retained for the 10-item S-Dep present subscale.

A similar procedure was followed in selecting the items for the 20-item T-Dep scale and the 10-item T-Dep present and absent subscales. Of the 40 T-Dep items, the 24 items listed above the dotted lines in the factor columns of Table 2 (13 T-Dep present; 11 T-Dep absent) had dominant loadings of .62 or greater on either Factor I or Factor II for the combined sample with promax rotation. Items #38 and #39, which had factor loadings below .50 in the factor analyses for either females or males, were dropped from the item pool. The remaining 22 items (12 T-Dep present, 10 T-Dep absent) had factor loadings of .62 or higher for the combined sample, and .50 or higher for both sexes. Of the 12 T-Dep present items, #9, #25, and #40 had very strong loadings on Factor I for the combined sample, and for both sexes (mdn. loading = .78) and also correlated very highly with each other (r = .70 or greater), suggesting redundancy of item content. However, item #9 ("I feel miserable") correlated more highly with the other 9 T-Dep present items than did either item #25 ("awful") or item #40 ("terrible"), and was retained for the final 10-item T-Dep present subscale.

The 20 S-Dep and 20 T-Dep items selected for the State and Trait Depression scales were further evaluated in principle axis factor analyses with promax rotation for the combined sample, and for females and males. The results of these analyses, which are reported in Table 3, identified strong state and trait depression-present and depression-absent factors, with excellent simple structure. All 20 S-Dep and all 20 T-Dep items had

dominant salient loadings of .60 or greater on either the Depression Present (F-I) or the Depression Absent (F-II) factor for the combined sample, with no salient dual loadings. In the analyses of the S-Dep and T-Dep items the factor structure for the combined sample, and for both females and males, was quite similar. However, for the females, the S-Dep and T-Dep depression-absent factors (F-I) were slightly stronger than the depression-present factors (F-II), whereas the S-Dep and T-Dep depression-present factors for the males were substantially stronger than the depression-absent factors, as reflected in the magnitude of the eigenvalues reported in Table 3.

The means, standard deviations, and alpha coefficients for the 20-item State and Trait Depression scales, and for the 10-item S-Dep and T-Dep depression-present and depression-absent subscales are reported in Table 4 for the combined sample, and separately for females and males. In computing the S-Dep and T-Dep scale scores, the 10 state and 10 trait depression-absent items were reverse scored. The scores for the 10-item depression present and absent subscales, which will be subsequently referred to as State and Trait Dysthymia and Euthymia, were determined by summing the actual ratings for each item. Since the Euthymia items were not reverse scored, higher scores on the S-Euthymia and T-Euthymia subscales indicated more positive feelings and less depression. The alpha coefficients for the State and Trait Depression scales, and for the S-Dep and T-Dep Dysthymia and Euthymia subscales, were .90 or higher for the combined sample and for both sexes (mdn. r = .93), indicating very good internal consistency especially for the relatively brief subscales. The mean S-Dep and T-Dep scale and S-Dysthymia subscale scores for females and males were quite similar as may be noted in Table 4. Although the males scored slightly higher than the females on State and Trait Euthymia, none of the F-tests for gender differences were statistically significant.

The correlations of the 20-item S-Dep and T-Dep scales with each other, and with the other depression and personality measures, are reported in Table 5. The S-Dep scale correlated .67 with the T-Dep scale for females, and .77 for males. Thus, the intensity of the feelings of depression at the time the tests were administered, as measured by the S-Dep scale, correlated substantially with the T-Dep measure of individual differences in the frequency of occurrence of depression as a personality trait. The correlations of the T-Dep scale with the BDI, ZUNG and CES-D for both females and males, which ranged from .73 to .86 (mdn. r = .805), were substantially larger than the corresponding correlations of the S-Dep scale with the other three depression measures (mdn. r = .665). Thus, while the BDI, Zung, and CES-D assess both state and trait depression (Ritterband and Spielberger, 1996), the higher correlations with the T-Dep scale may be interpreted as indicating that all three of these widely used depression measures more accurately assess relatively persistent trait-like depressive characteristics.

As may be noted in Table 5, the T-Dep scale correlated with the other three measures of depression (mdn. r = .805) as highly as these measures correlated with each other (mdn. r = .805), indicating a high degree of concurrent validity. The correlations of the T-Dep scale with the ZUNG and the CES-D were higher than the corresponding correlations with the BDI for both females and males, which was consistent with the fact that responses to the ZUNG, CES-D, and the T-Dep scale are based on frequency ratings, whereas the BDI requires respondents report the severity of depressive feelings

TABLE 3. Factor loadings based on principle axis factor analyses with promax rotation of the items selected for the State and the Trait Depression Scales for the combined sample and in separate analyses for females and males.

PROMAX ROTATION[1]

STATE DEPRESSION ITEMS	COMBINED SAMPLE F-I	COMBINED SAMPLE F-II	FEMALES F-II	FEMALES F-I	MALES F-I	MALES F-II
08 I feel low	.86		.86		.93	
09 I feel miserable	.83		.74		.92	
03 I feel hopeless	.80		.78		.86	
16 I feel blue	.77		.70		.93	
25 I feel awful	.76		.71		.83	
31 I feel rejected	.76		.69		.81	
01 I feel depressed	.74		.66		.86	
06 I feel sad	.72		.72		.68	
26 I feel gloomy	.72		.63		.84	
18 I feel downhearted	.69		.67		.82	
28 I feel healthy		.92		.92		.96
29 I feel safe		.81		.78		.87
13 I feel peaceful		.71		.75		.57
23 I feel active		.71		.68		.74
39 I feel alive		.70		.65		.79
04 My mind is as clear as ever		.68		.68		.67
27 Hopeful about the future		.67		.63		.79
35 I feel enthusiastic		.67		.68		.68
14 I feel strong		.66		.70		.54
11 I enjoy life		.62		.65	−.42	.47

TRAIT DEPRESSION ITEMS	COMBINED SAMPLE F-I	COMBINED SAMPLE F-II	FEMALES F-II	FEMALES F-I	MALES F-I	MALES F-II
26 I feel gloomy	.83		.75		.94	
01 I feel depressed	.80		.74		.86	
09 I feel miserable	.79		.66		.89	
08 I feel low	.75		.72		.87	
18 I feel downhearted	.73		.71		.75	
32 I am suffering	.73		.64		.78	
06 I feel sad	.71		.61		.87	
16 I feel blue	.70		.68		.74	
31 I feel rejected	.66		.56		.84	
03 I feel hopeless	.60		.41		.84	
29 I feel safe		.76		.80		.72
17 I feel whole		.76		.74		.76
28 I feel healthy		.73		.70		.65
13 I feel peaceful		.73		.69		.67
14 I feel strong		.73		.65		.74
11 I enjoy life		.72		.78		.65
05 I feel good		.70		.76		.66
20 I feel happy		.66		.78	−.44	.55
27 Hopeful about future		.63		.63		.60
23 I feel active		.63		.52		.72

[1] The items are listed in the descending order of magnitude of their dominant loadings on Factor I or II for the combined sample. Only salient loadings of 40 or greater are reported.

TABLE 4. Means, standard deviations, and alpha coefficients for he State and Trait Depression Scales and the Dysthymia and Euthymia Subscales for the combined sample, and females and males, and F-tests of gender differences.

	COMBINED SAMPLE			FEMALES			MALES			
	Mean	SD	Alpha	Mean	SD	Alpha	Mean	SD	Alpha	F-Val.
S-DEPRESSION	29.26	10.36	.94	29.53	9.76	.93	28.69	11.56	.96	.36
S-DYSTHYMIA	12.07	4.40	.93	11.91	3.82	.90	12.42	5.44	.96	.75
S-EUTHYMIA	32.82	7.05	.93	32.38	7.03	.92	33.74	7.06	.94	2.06
T-DEPRESSION	35.87	11.66	.95	36.33	11.24	.95	34.90	12.53	.96	.82
T-DYSTHYMIA	15.88	5.75	.93	15.84	5.06	.91	15.99	7.01	.96	.04
T-EUTHYMIA	30.03	6.86	.93	29.52	6.99	.93	31.11	6.49	.92	2.98

TABLE 5. Correlations for females and males of the State and Trait Depression Scales with the BDI, Zung, and CESD measures of depression, and the STPI T-Anxiety, T-Anger, and T-Curiosity Scales.

		DEPRESSION MEASURES				STPI SCALES		
		T-DEP	BDI	ZUNG	CESD	T-ANX	T-ANG	T-CUR
S-Dep	Female	.67	.57	.66	.58	.55	.22	-.43
	Male	.77	.67	.69	.73	.66	.21	-.48
T-Dep	Female		.76	.85	.79	.81	.30	-.46
	Male		.73	.82	.86	.88	.41	-.63
BDI	Female			.77	.86	.74	.30	-.30
	Male			.78	.78	.80	.37	-.39
ZUNG	Female				.83	.75	.33	-.36
	Male				.88	.84	.47	-.56
CESD	Female					.74	.27	-.33
	Male					.83	.45	-.47

Significance:	p<.05	p<.01	p<.001
Female	.15	.19	.24
Male	.22	.27	.36

and cognitions experienced during the past week. The finding that the T-Dep scale correlated more highly with the ZUNG than the BDI (see Table 5) was probably due to the fact that both the ZUNG and the T-Dep scale are based on frequency ratings of equal numbers of depression-present and depression-absent items. The higher correlations of the T-Dep scale with the CES-D may reflect the fact that both of these measures were developed to evaluate depression in non-clinical populations, whereas the BDI was designed to assess symptoms of depression experienced by psychiatric patients.

The correlations of the 10-item T-Dep Dysthymia and Euthymia subscales with the BDI, ZUNG and CES-D were also substantial, ranging from .70 to .86 for T-Dysthymia, and from -.65 to -.75 for T-Euthymia. The negative correlations of the 10-item S-Euthymia subscale with the three widely used depression measures, which ranged from -.55 to -.69, were larger than the corresponding positive correlations of .41 to .43 of the 10-item S-Dysthymia subscale with these measures. Thus, the T-Dep Dysthymia subscale correlated more highly with the other depression measures than the T-Dep Euthymia subscale, whereas the corresponding correlations of the S-Dep Euthymia subscale were stronger than those found for the S-Dep Dysthymia subscale.

Correlations of the S-Dep, T-Dep, BDI, ZUNG, and CES-D with the STPI T-Anxiety, T-Anger, and T-Curiosity scales are also reported in Table 5. All four trait depression measures correlated as highly with the STPI T-Anxiety scale (mdn. $r = .805$) as they did with each other. Given the high comorbidity of depression and anxiety (Mineka, Watson, and Clark, 1998; Gotlib and Cane, 1989), a substantial relation between measures of these constructs was expected, but the magnitude of this relationship in a non-clinical population was somewhat surprising. The S-Dep scale also correlated substantially with T-Anxiety, but to a lesser degree. All four trait depression measures also correlated positively and significantly with the STPI T-Anger scale (mdn. $r = .35$), but these correlations were much smaller than with T-Anxiety. The significant negative correlations of the depression scales with T-Curiosity (mdn. $r = -.445$) suggested that depression may inhibit curiosity and exploratory behavior.

Discussion

The primary goal of the present study was to determine if the depressive cognitions and feelings measured collectively by the BDI Cognitive-Affective subscale could be identified as separate factors in a non-clinical population. In keeping with this goal, 40 items that described either depressive feelings or cognitions were selected from widely used measures of depression, and adapted to assess the intensity of depression as an affective mood state and individual differences in depression as a personality trait. This pool of 40 state and 40 trait items was administered to 251 undergraduate university students, along with the BDI, Zung, CES-D, STPI, and Anger Expression scales. In principle axis factor analyses of responses to the 40 state depression items before rotation, one very strong depression factor and several smaller factors were found for the combined sample, and for both females and males. Moreover, all 40 S-Dep items had dominant salient loadings of .40 or greater on this factor. Similarly, a very strong

trait depression factor was also found in the comparable analyses of the trait items; all but one of the 40 T-Dep items had dominant salient loadings on this factor. These findings provide compelling evidence that depressive feelings and cognitions combine to form unitary state and trait depression dimensions that can be measured effectively by items with content that describe either the presence or absence of depression. It is also interesting to note that all 25 items with content relating to the presence of depression had substantial positive loadings on both the state and trait depression factors, whereas all 15 items describing the absence of depression had strong negative loadings on these factors.

In separate factor analyses of the 40 state and 40 trait depression items with promax rotation, two factors were identified for the combined sample, and for both females and males. However, contrary to the expected finding of correlated factors that described depressive feelings and cognitions, the content of the items with strong loadings on the first factor described the presence of depression (e.g., feeling miserable, gloomy, sad, disappointed in myself), whereas those items with large loadings on the second factor described the absence of depression (e.g., feeling healthy, safe, peaceful, hopeful about the future). The finding of robust state and trait depression-present and depression-absent factors was consistent with previous research in which depression and anxiety items coalesced to form positive and negative affectivity factors (Tellegen, 1985; Watson and Clark, 1991, 1997; Watson and Tellegen, 1985). According to Mineka, Watson, and Clark (1998), "Negative affect reflects the extent to which a person is experiencing negative mood states such as fear, sadness, anger, and guilt, whereas positive affect reflects the extent to which one reports positive feelings such as joy, enthusiasm, energy, and alertness" (p. 392).

Clark and Watson (1991a, 1991b) have developed a tripartite model, which takes positive and negative affectivity into account and that claims to differentiate between depression and anxiety. The three major dimensions posited by this model are: (a) General Distress, which corresponds essentially with negative affectivity, is prevalent in both depression and anxiety; (b) Anhedonia, defined by the absence of positive affect, is more characteristic of depression; and (c) Physiological hyper-arousal, defined primarily by somatic symptoms, is relatively specific to anxiety. However, contrary to the tripartite model, the results of the present study indicated that positive and negative affectivity were highly inversely correlated, and that both were major components of a single depression dimension. Recent research has also demonstrated that the negative affective feelings of depression and anxiety, which coalesce to define the General Distress factor in the tripartite model, can be clearly differentiated in ratings of the intensity of these emotional states (Owen, 2001).

In the present study, most of the state and trait items with content that described affective feelings of depression had higher loadings on the depression-present and depression-absent factors than items that described affective cognitions. These findings may be interpreted as indicating that affective feelings of depression are more universal, and therefore relatively more homogeneous, than depressive cognitions. It seems reasonable to expect that individuals who respond to a particular situations with similar depressive feelings may have different thoughts about these situations, which give rise

to different cognitive interpretations. Contrary to the expected finding in this study of factors defined by affective feelings and cognitions, oblique rotation of responses to the state and trait items identified depression-present and depression-absent factors for both females and males. Consequently, the goals of the study were modified to select the best items for developing state and trait depression scales, each with subscales for assessing the presence or absence of depression. Of the pool of 40 items given with state and trait instructions, 33 state and 31 trait items had loadings of .50 or higher on either the depression-present or depression-absent factor for the combined sample, with no salient dual loadings. Items with the largest loadings on these factors were selected to form 20-item scales for measuring state and trait depression, taking conceptual meaning and content redundancy into account.

The alpha coefficients for the 20-item State and Trait Depression scales were .93 or higher (mdn. r = .95) for the combined sample, and in separate analyses for both females and males. The alphas for the 10-item State and Trait Dysthymia and Euthymia subscales ranged from .90 to .96 (mdn. r = .93). Thus, the internal consistency of the S-Dep and T-Dep scales and subscales was excellent, and somewhat higher than the alphas for the BDI, Zung and CES-D, which ranged from .86 to .93. It is especially impressive that the alphas for the 10-item S-Dep and T-Dep Dysthymia and Euthymia subscales for both females and males were quite comparable to those for the 20-item CES-D, and higher than the corresponding alphas for the BDI and the ZUNG, which are also comprised of twice as many items.

The 20 item T-Dep Scale correlated highly (mdn. r = .80) with the BDI, ZUNG, and CES-D for both females and males, indicating good concurrent validity. The corresponding correlations of the S-Dep scale were substantially smaller (mdn. r = .66), suggesting that the three widely used depression measures assess more trait-like indi-vidual differences in depression, rather than the intensity of depressive feelings at a particular time. The T-Dep Scale and the other three depression measures also correlated highly with the STPI T-Anxiety scale and, to a much lesser degree, with T-Anger. Significant negative correlations with T-Curiosity were found for all five depression measures. Overall, the convergent and divergent validity of the S-Dep and T-Dep scales was commensurate with that of the BDI, Zung and CES-D.

The concept of item-intensity specificity explicitly points out that "… individual items used to measure the intensity of a personality state are more effective at some levels of the intensity dimension than at others" (Spielberger, Gorsuch, and Lushene, 1970, p.11). Although the theoretical and methodological importance of item-intensity specificity was emphasized by Anastasi (1988), this concept has been largely ignored or, at best, only marginally recognized in the construction of measures of emotional

states and personality traits. Item-intensity specificity was implicitly utilized by Zuckerman (1960), whose Affect Adjective Check List included a number of adjectives that described positive feelings to measure lower levels of anxiety. This concept explicitly guided the construction of the State Anxiety scale of the State-Trait Anxiety Inventory (STAI) (Spielberger, 1988; Spielberger *et al.,* 1970), which consists of equal numbers of anxiety-present and anxiety-absent items to facilitate measuring a wide range of the intensity of anxiety as an emotional state. In the measurement of anxiety, items that described positive feelings, when reverse scored, were more sensitive measures of lower levels of anxiety, whereas items describing the presence of negative feelings were better for assessing higher levels of intensity.

In measuring depression, the concept of item-intensity specificity calls attention to the fact that depression-absent items (e.g., feeling safe, strong, enthusiastic), when reverse scored, are more sensitive for assessing lower levels of depression, whereas depression-present items (e.g., feeling sad, gloomy, hopeless) are more effective measures of higher levels of depression. Most depression measures are comprised primarily of depression-present items, which makes them less sensitive for assessing low intensity levels of depression. The S-Dep and T-Dep scales and subscales developed in this study include equal numbers of items for assessing the presence and absence of affective feelings of depression, thus facilitating the assessment of a wide range of depression in non-clinical populations.

In the diagnosis and treatment of depression, Beck and his colleagues (Beck, 1963, 1971; Beck *et al.,* 1979) have consistently emphasized that cognitive-affective items assess the essential nature of depression, and that "hot" cognitions trigger the affective feelings that are characteristic of depressive mood. In the present study, items that described depressive feelings had larger factor loadings on a unitary depression factor before rotation than items with content that described affective ("hot") cognitions, suggesting that depressive feelings were more universal and homogenous than depressive cognitions. It seems likely that the greater heterogeneity of affective cognitions of depression is influenced by the diversity of human experience, which contributes to the reduced factor loadings for these items as compared to items that describe depressive feelings.

The unique potential of the S-Dep and T-Dep scales to assess state and trait depression, and the presence or absence of depressive feelings, permits evaluation of a wide range of both the intensity of depressive feelings at a particular time and individual differences in the frequency that depression is experienced as a personality trait. The State and Trait Euthymia and Dysthymia subscales also provide separate measures of positive and negative affectivity associated with depression. Finally, it should be noted that the S-Dep and T-Dep scales developed in this study do not include any items that assess somatic symptoms or performance deficits, such as those that contribute to the total scores on the BDI, ZUNG, and CES-D. As clearly noted by Beck and his colleagues (Beck *et al.,* 1996), high scores on somatic-performance items can mistakenly lead to the diagnosis of depression in patients with medical problems or painful treatments that contribute to somatic symptoms and/or performance deficits.

In conclusion, it is important to note that excellent Spanish translations and adaptations of the S-DEP and T-DEP scales have been developed at the University of Granada (Spielberger, Carretero-Dios, De los Santos-Roig, and Buela-Casal, 2002a, 2002b). The psychometric properties of these Spanish adaptations are very similar to the American English scales, and have already proved useful in assessing depression in both clinical and normal Spanish populations. The Spanish S-Dep and T-Dep scales and information about these measures are available from Professor Gualberto Buela-Casal (gbuela@ugr.es).

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