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Self-Referent Speech and Psychopathology: The Balance of Positive and Negative Thinking

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Psychometrically defined analogue populations and inpatient psychiatric samples were used to examine (a) the hypothesis that positive and negative self-statements and the balance between positive and negative self-talk are differentially associated with psychopathology, and (b) the merits of a revised ATQ. Two studies involved completion of an extended self-statement inventory that included the Automatic Thoughts Questionnaire (ATQ) and some positive and neutral items. Subjects indicated the frequency of particular cognitions and rated each for degree of positive or negative valence. Study 1 used psychometrically defined groups—dysphoric, overly optimistic, and normal. Positive items that discriminated groups were tested in a cross-validation sample. Study 2 incorporated a Depressed inpatient group and an Other Psychiatric Disorder inpatient comparison group. Regression analysis showed that the addition of 10 positive items to the 30-item ATQ significantly increased the amount of variance accounted for, using diagnostic group as the criterion. Dysphoric/depressed groups endorsed significantly more negative self-talk and evidenced a significantly less-frequent occurrence of positive self-talk than normals or overly optimistic subjects (Study 1) or than the inpatient psychiatric group with other diagnoses (Study 2). Valence did not account for additional variance. The obtained proportions of positive and negative self-referent speech supported the notion that a psychologically healthy internal dialogue is a 1.6:1.0 (.62 to .38) ratio of positive and negative thinking. Discussion includes consideration of the role of negative and positive self-statements in depression, the notion of optimally balanced self-talk, and the recommendation to use the ATQ-R for future research.

KEY WORDS: ATQ-R; automatic thoughts; assessment; self-talk; psychopathology; depression.

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Recent theory and research has increasingly emphasized the role of cognition in the origin, maintenance, and treatment of psychopathology (e.g., Beck, 1976; Meichenbaum, 1977). Particular focus has been placed on cognitive factors in the study of depression, with Beck a pioneer in asserting that pervasive, systematic distortions of both cognitive content and processes are integral to the various components of syndrome depression (Beck, 1976). Correspondingly, altering negative thoughts and beliefs is a means of treating clinical depression (Beck, Rush, Shaw, & Emery, 1979; Hollon & Beck, 1979). Despite the continuing interest in cognitive-behavioral therapy for the affective disorders, relatively little attention has been given until recently to developing and refining specific measures of the cognitions associated with affective distress (Kendall, 1981).

The presence of negative "automatic thoughts," an aspect of the negativity in depressed patients' cognition, was recognized early in cognitive theory (Beck, 1963). As Kendall and Hollon (1981) point out, self-referent speech most frequently refers to comments (internal or otherwise) in which the audience is primarily the person him/herself, not just to those in which the individual is the object of the statement. Self-referent speech is typically assessed through audio- or videotaping spontaneous speech during a task, thought listing, thought sampling, or endorsement of items on self-statement inventories (Kendall, 1984). One endorsement cognitive measure that has received empirical support is the Automatic Thoughts Questionnaire (ATQ) (Hollon & Kendall, 1980). This 30-item inventory of negative or depressive self-statements has successfully discriminated between depressed and nondepressed clinical populations (Harrell & Ryon, 1983). Dobson and Breiter (1983), in a comparison of the ATQ with a measure of dysfunction attitudes (DAS), noted that in a college student population the ATQ demonstrated a high internal reliability and was a superior measure of depression severity. More recently, the ATQ was demonstrated to have a greater specificity than the DAS for diagnostic grouping within a clinical setting (Hollon, Kendall, & Lumry, 1986), to show strong convergent and discriminant validity (Dobson & Shaw, 1986), and to covary with other depression measures *across* four diagnostic categories within a psychiatric inpatient population (Ross, Gottfredson, Christensen, & Weaver, 1986).

As exemplified by development of the ATQ, cognitive research to date has focused on the negative aspects of reported self-referent speech. A review by Kendall (1983) suggested that treatment-produced gains may be more associated with a reduction in negative thinking, as opposed to an increase in positive thoughts—a pattern Kendall (1982) dubbed the "power of nonnegative thinking." Kendall (1983) suggested, however, that examination of both the positive and negative dimensions of cognition may contribute to greater understanding of health-pathology relationships. Recognizing the benefits

of a measure to permit examination of both positive and negative automatic thoughts in depression, Ingram and Wisnicki (1988) reported development and initial evaluation of the ATQ-P, a measure of automatic positive thoughts intended to complement the ATQ.

Two recent models incorporating both positive and negative dimensions are the Positive and Negative Affectivity structural model of mood (Watson & Clark, 1984; Watson & Tellegen, 1985) and the States-of-Mind (SOM) model of cognition proposed by Schwartz and Garamoni (1986). On the basis of analysis of data on self-reported mood, Watson and Tellegren (1985) consistently found the two orthogonal factors of Positive and Negative Affectivity accounting for one-half to three-fourths of total variance. Positive affectivity—"the extent to which a person avows a zest for life"—appeared to be normally distributed, centering around a moderate range. Negative affectivity—"the extent to which a person reports feeling upset or unpleasantly aroused"—appeared to remain at a low, constant level, with periodic elevations of extreme distress (p. 221). Depression, in contrast to anxiety, was reported to be highly related to low positive affectivity, rather than just to negative affectivity. While the focus of this model is mood, many of the measures analyzed were cognitive assessments, and the affectivity dimensions appear related to cognition as well.

Building on the notion of the power of nonnegative thinking, the SOM model of Schwartz and Garamoni suggests that adaptive psychological functioning is characterized by an "optimal" balance of positive and negative cognition. The SOM model posits five "states of mind," each defined by the variable of total positive cognitions to total positive plus negative cognitions. The "positive dialogue" is an internal dialogue defined by a .618 set-point ratio of positive to total cognitions and is hypothesized as optimal for coping with stress. The "internal dialogue of conflict" is defined by a .500 set-point ratio of positive to total cognitions and is associated with *mild* levels of psychopathology. The "negative dialogue" is defined by a .382 set-point ratio of positive to total cognitions and is associated with *moderate* psychopathology. The "positive monologue" is deficient is negative thoughts (and not necessarily healthy), while the "negative monologue" (all negative thinking) is a mark of extreme psychopathology (Schwartz, 1986).

Support for the SOM model was found in calculations of the proportion of positive to positive and negative self-statements in a number of studies comparing controls and dysfunctional groups for whom some form of anxiety, rather than depression, was the most common problem (Schwartz, 1986). The review did include eight studies with depressed groups, although the typical measure was a memory task.

The present research included two studies that intend to (a) assess the balance of positive/negative self-statements with a dysphoric and a depressed

inpatient sample, (b) extend and revise the Automatic Thoughts Questionnaire, and (c) test for a "depressive shift" in rating neutral terms. These assessments are made possible by addition of a series of positive and neutral self-statements (developed in an earlier pilot study) to the 30 negative items of the ATQ. This permitted examination both of the "balance" of positive and negative cognitions and of whether depressed subjects rated neutral statements more negatively. In addition, several authors (Arnkoff & Glass, 1982; Kendall & Hollon, 1981; Kendall, 1984) have noted cognitive researchers' lack of attention to the individual meaning of a person's self-statements. In the present research, addiction of a positive/negative valence rating to the frequency rating for each positive, neutral, and negative self-statement allowed examination of the affective, evaluative aspect of automatic thoughts and its relationship to psychopathology.

STUDY 1

Method

Subjects

For the original sample, three psychometrically defined groups were drawn from 177 metropolitan university undergraduate volunteers, who received one research point added to their course grade in exchange for participation. The Dysphoric group ($n = 17$) had scores ≥ 1 standard deviation above the mean on both the Beck Depression Inventory (BDI ≥ 14) and the Minnesota Multiphasic Personality Inventory (MMPI) Depression Scale (MMPI-D ≥ 27). The Overly Optimistic[2] group ($n = 17$) had scores ≥ 1 standard deviation above the mean on both the MMPI Mania Scale (MMPI-M ≥ 25) and the Hypomania scale of the General Behavior Inventory (GBI-HY ≥ 47). Inclusion in the Normal group ($n = 19$) required scores on all four measures within 1 standard deviation of the mean (BDI $\geq 1 \leq 12$; MMPI-D $\geq 15 \leq 24$; MMPI-M $\geq 16 \leq 23$; GBI-HY $\geq 31 \leq 43$).

The resulting Dysphoric group consisted of 6 males and 11 females (12 whites and 5 nonwhites; mean age 19.06). The Overly Optimistic group consisted of 11 males and 6 females (13 whites and 4 nonwhites; mean age 19.00). The Normal group included 9 males and 10 females (14 whites and 5 nonwhites; mean age 18.53). Analysis of variance revealed nonsignificant differences between these groups.

[2]The Overly Optimistic group is a psychometrically defined group using measures of hypomania. The label hypomanic could have been used to refer to these subjects; however, since no diagnostic determinations were made, the label Overly Optimistic was used.

Subjects for a separate cross-validation sample were 97 undergraduates with Dysphoric (n = 11), Overly Optimistic (n = 8), and Normal (n = 18) groups psychometrically defined as above. Again, analysis showed no significant differences between groups on subject variables of age, sex, or race.

Measures

General Behavior Inventory. The GBI (Depue et al., 1981), a 79-item self-report inventory, assesses behavioral experiences related to depression, hypomania, and bipolar disorders and includes indices of intensity, duration, and rapid shift of these behaviors. Response is based on a 1-to-4 Likert scale reflecting frequency of occurrence.

Beck Depression Inventory. The BDI (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) is a self-report inventory assessing syndrome depression; it includes 21 items, each of which is followed by four related statements scaled from 0 to 3. Subjects respond by choosing the statement(s) that best describe how they felt during the past week.

Automatic Thoughts Questionnaire. The ATQ (Hollon & Kendall, 1980), a 30-item inventory of negative self-statements, was developed to assess depression, and its reliability and validity have been established using both clinical (Hollon et al., 1986) and subclinical (Hollon & Kendall, 1980) populations. The standard form asks subjects to endorse, on a 5-point Likert scale, the frequency of each thought during the preceding week (e.g., 1 = not at all, 5 = all the time). For the purpose of this study, subjects were also asked to rate the personal *valence* of each self-statement, using a 5-point scale (−2 = very negative to +2 = very positive, where 0 = neutral). In addition, the ATQ items were embedded within a list of nonnegative statements generated for this research.

Minnesota Multiphasic Personality Inventory—Depression and Mania Scales. These scales (MMPI-D and MMPI-M) are part of a self-report measure designated to discriminate normal subjects from hospitalized patients with known psychopathological conditions (Hathaway & McKinley, 1940). The MMPI-D total score is obtained by summing over 60 true/false items and can range from 0 to 60; the MMPI-M score is the total of responses on the scale's 42 true/false items and can range from 0 to 42.

Nonnegative Statements. These 97 items were positive and neutral self-statements taken from an earlier pilot study, where items were generated by a group of over 300 college students asked to record the thoughts that popped into their heads during positive and neutral situations during the prior week. Items were then organized and condensed into a pool of 60 positive and 37 neutral statements. For this study, subjects were asked to rate on a 5-point scale the frequency with which they experienced each thought during the prior week and, also on a 5-point scale, how positive or negative they felt it to be.

Procedure

Following informed consent, subjects were given a test booklet and answer sheets, allowed to work at their own pace in groups no larger than eight, and debriefed following competition. Four randomly distributed orders-of-presentation were used for questionnaires, but the NNTS form with the embedded ATQ items was presented first to all subjects.

RESULTS

ATO and NNTS

Means and standard deviations of the original and cross-validation samples are shown in Table I. As predicted from previous research analogue populations, ATQ item endorsement significantly differentiated Dysphoric subjects from Normals. Those in the original sample's Dysphoric group endorsed the items at a greater frequency than Normals ($t(34) = 4.48, p < .001$). In the cross-validation sample, the endorsement of ATQ items again significantly discriminated Dysphoric subjects and Normals, with the Dysphoric group endorsing the items at a greater frequency than Normals ($t(27) = 4.71, p < .001$).

For the original sample, *t*-test analysis of frequency endorsements of nonnegative items, using a significance level of .05,[3] revealed 15 (excluding ATQ items) that differentiated Dysphoric from Normal subjects. These items were endorsed less frequently by Dysphoric subjects, and their sum differentiated the Dysphoric and Normal groups ($t(34) = 3.62, p < .01$).

T-test analysis of the original sample's assigned valence ratings for the nonnegative items indicated 14 items that differentiated Dysphoric subjects from Normals and 10 that differentiated Normals and Overly Optimistic subjects. Although the direction of rated valence was consistent with previous findings that Dysphoric subjects view things more pessimistically and Overly Optimistic (Hypomanic) more positively, stepwise multiple regression showed that valence ratings did not account for significant additional variance above that already accounted for by frequency ratings.

For the smaller cross-validation sample, *t*-test analysis of frequency endorsement showed that 10 of the 15 nonnegative items replicated, with all but 2 of the remaining items approaching the significance level of .05. Again, these items were endorsed less frequently by Dysphoric subjects than by Nor-

[3]The .05 criterion was set for initial item development. The cross-validation was used to reduce unwanted results due to chance.

Table I. Means and Standard Deviations for Study 1 Measures

	Original sample			Cross-validation sample		
Measure[a]	Depressed	Hypomanic[b]	Normal	Depressed	Hypomanic	Normal
BDI	21.59	8.77	4.63	24.26	11.50	5.28
	(7.05)	(7.18)	(2.69)	(10.66)	(3.02)	(3.01)
MMPI-D	32.65	19.20	19.53	32.09	20.00	20.05
	(4.21)	(3.33)	2.55)	(2.95)	(4.07)	(2.56)
MMPI-M	20.29	27.82	20.16	19.01	26.63	19.61
	(3.39)	(2.83)	(1.95)	(5.84)	2.26)	(2.23)
GBI-HY	42.24	50.35	36.21	43.64	53.38	35.67
	(6.71)	(3.61)	(3.55)	(10.76)	(9.16)	(3.46)
ATQ	83.49	60.82	55.63	85.55	65.63	53.17
	(25.80)	(16.00)	(9.10)	(23.11)	(21.53)	(14.09)

[a]BDI = Beck Depression Inventory; MMPI-D = Minnesota Multiphasic Personality Inventory, Depression Scale; MMPI-M = Minnesota Multiphasic Personality Inventory, Mania Scale; GBI-HY = General Behavior Inventory, Hypomanic Scale; ATQ = Automatic Thoughts Questionnaire.
[b]Hypomanic = Overly Optimistic

mals. The 10 items that replicated included statements such as "I'm proud of myself" and "No matter what happens, I know I'll make it." In a hierarchical multiple regression, addition of the nonnegative items accounted for a significantly greater amount of the variability contained in the distribution of Dysphoric and Normal subjects (ATQ (step 1), adjusted $R^2 = .43$; nonnegative items (step 2), adjusted $R^2 = .57$, $F(1, 26) = 10.0$, $p < .01$). Similarly, using the Dysphoric and Normal groups in the original comparison, analysis of the contributions of the ATQ and nonnegative items, in a hierarchical multiple regression, resulted in a significant increase in the variance accounted for when using Dysphoric versus Normal diagnostic group as the criterion variable (ATQ (step 1), adjusted $R^2 = .35$; (step 2), adjusted $R^2 = .45$, $F(1, 33) = 23.83$, $p < .001$).

Only one of the 10 positive items with frequency ratings that differentiated the original Overly Optimistic and Normal groups was replicated in the cross-validational sample. Also, valence ratings were again not a valuable tool for differentiating groups. In the cross-validation sample, only two items were replicated in *t*-test item analysis, and stepwise regression indicated that valence ratings did not account for additional variance above that contributed by frequency ratings.

Another aspect of the evaluation of self-referent speech was examined by creating a "Neutral" category of self-statements, using items to which at least 50% of the original sample's Normal group assigned a Neutral rating. Dysphoric subjects in the original sample did *not* rate the sum of these Neutral statements in a significantly more negative direction than Normals ($t(34) = 1.51$). Similar results were found for the cross-validation Dysphoric group. Overly Optimistic subjects in the original and cross-validation

samples did, however, rate Neutral statements more positively than did Normals.

Balance of Positive and Negative Thinking

Two balance scores were calculated: valence and frequency. A score representing the proportion of positive and negative *valence* ratings was computed separately for subjects in each of the three groups in the original sample and in the cross-validation sample. The score was calculated by excluding neutral ratings, counting the number of positive (+1 or + 2) and negative (−1 or −2) ratings for all 127 (nonnegative and ATQ) items, and dividing the number of positive ratings by the total positive and negative ratings. The resulting proportions (shown in Table II) for both Dysphoric groups fall within the SOM model's "internal dialogue of conflict," and those for both normal groups fall within the model's hypothesized optimal "positive dialogue."

The second proportional analysis used subjects' *frequency* ratings for ATQ and replicated nonnegative items—a self-report measure of the frequen-

Table II. Proportion of Positive and Negative Self-Talk

Comparison group	Positive/ pos + neg
Using valence ratings	
Study 1—Original sample	
Depressive	.56
Normal	.60
Hypomanic	.64
Study 1—Cross-validation	
Depressive	.55
Normal	.62
Hypomanic	.66
Study 2	
Depressed	.46
Other psychiatric	.47
Using frequency ratings	
Study 1—Original sample	
Depressive	.45
Normal	.63
Hypomanic	.62
Study 1—Cross-validation	
Depressive	.42
Normal	.64
Hypomanic	.60
Study 2	
Depressed	.39
Other psychiatric	.53

cy with which they thought each self-statement during the prior week. For each Study 1 sample, the resulting total for each diagnostic group was adjusted for the differing numbers of ATQ and nonnegative items. A proportion of positive and of negative frequency ratings to total positive and negative ratings was then calculated and is so shown in Table II. In this analysis, one Dysphoric group fell within the "negative dialogue" and one at the lower end of the "internal dialogue of conflict"; again, both normal groups fell within the "positive dialogue."

STUDY 2

Method

Subjects

All participants were inpatients at the Eastern Pennsylvania Psychiatric Institute of the Medical College of Pennsylvania, in Philadelphia. Exclusion criteria included mental retardation, organic brain syndrome, lack of facility in English, and other physical or mental disability that interfered with completion of the study questionnaires.

The Depressed group ($n = 19$) has a mean age of 38.16 and included 2 (11%) male and 17 (89%) female and 17 (89%) white and 2 (11%) nonwhite volunteer inpatients from the Affective Disorders Unit. Patients were included in the group on the basis of chart diagnoses made independently of this study and rechecked at the time of discharge. DSM-III diagnoses based on chart review were confirmed by one of the authors. The Other Psychiatric Disorder group ($n = 15$) included 9 (60%) male and 6 (40%) female and 10 (67%) white and 5 (33%) nonwhite inpatient volunteers (mean age = 32.80). Patients were included in this group whose chart diagnoses included chronic schizophrenic, schozoaffective, bipolar-manic, and panic disorder diagnoses. Using a criterion of .05, t-test analyses showed nonsignificant differences among these groups on the subject variables of race and age. Significant differences existed among the group on the variable of gender ($t(32) = 3.49$, $p < .001$), with more females in the Depressed group—a difference typical in inpatient samples.

Measures and Procedures

In Study 2, the battery of scales administered to subjects in Study 1 was shortened by exclusion of the BDI and the GBI. With the exception of individual administration, similar procedures were used.

Results

The means and standard deviations of the measures used in Study 2 are shown in Table III. Consistent with previous research using psychiatric inpatient populations, the endorsement of ATQ items was significantly different for the Depressed and Other Psychiatric groups, with the Depressed group endorsing the items as occurring with greater frequency during the prior week than inpatients with other diagnoses ($t(32) = 3.11, p < .01$). Stepwise multiple regression indicated, however, that, as in Study 1, the valence ratings for ATQ items did not account for additional variance above that included in the frequency ratings.

The total score on the nonnegative items—the 10 positive items that were endorsed less frequently by Dysphoric subjects in Study 1's original sample and replicated in the cross-validation study—also successfully discriminated the clinically Depressed from the Other Psychiatric group ($t(32) = -2.77, p < .01$). Analysis of the contributions of the frequency ratings for the ATQ and for the nonnegative items, in a hierarchical multiple regression, showed that addition of the score for the nonnegative items led to a significant increase in the variance accounted for when using diagnostic group as a dependent variable (ATQ (step 1), adjusted $R^2 = .21$; (step 2), adjusted $R^2 = .26, F(1, 31) = 7.29, p < .05$). Regression analysis indicated, however, that valence ratings for nonnegative items again did not account for significant additional variance, above that included in the frequency ratings.

As in Study 1, valence ratings for those items that at least 50% of Study 1's Normal group rated as Neutral were examined. The Depressed inpatient group did not rate Neutral statements significantly more negatively than the psychiatric control group.

Table III. Means and Standard Deviations for Study 2 Measures

	Comparison group	
Measure[a]	Depressed	Other psychiatric
MMPI-D	35.63	27.33
	(5.15)	(7.09)
MMPI-M	19.68	24.20
	(5.69)	(5.60)
ATQ	93.84	70.60
	(24.13)	(17.87)

[a]MMPI-D = Minnesota Multiphasic Personality Inventory, Depression Scale; MMPI-M = Minnesota Multiphasic Personality Inventory, Mania Scale; ATQ = Automatic Thoughts Questionnaire.

Balance of Positive and Negative Thinking

A score representing the proportion of "positive" and "negative" valence ratings was developed for subjects in the two inpatient groups, as outlined in Study 1. Results were shown in Table II. Inpatient groups' balance of positive and negative self-statements, using frequency ratings for the ATQ and nonnegative items, was also computed as in Study 1. This measure of the balance between self-reported positive and negative conditions during the prior week was included in Table II.

Internal Consistency of Nonnegative Items

Correlation coefficients were calculated between each of the 10 items and the total nonnegative score for each subject in Studies 1 and 2. The magnitude of the correlations ranged from .54 to .75. Further, the coefficient alpha was found to be .90.

DISCUSSION

This research provided continued support for the existence of specific negative cognitive content for depressed persons, as indicated in numerous other studies (Beck et al., 1961; Hollon & Kendall, 1980; Missel & Sommer, 1983). In two studies incorporating both analogue and inpatient groups, depressed groups reported experiencing negative self-statements (ATQ items) significantly more frequently than comparison groups.

Cognitive theory and research on depression has focused, for the most part, on the negative aspect of self-referent speech. By including positive and neutral self-statements in an expanded ATQ, we identified and cross-validated a revised ATQ (ATQ-R); see the appendix. Regression analyses showed that these items accounted for significantly more variance than the ATQ alone when predicting diagnostic group as the criterion. The revised ATQ (ATQ-R) evidenced increased predictiveness with both analogue and hospitalized groups. Given the evidence that depressive mood is linked to the presence of negative and the absence of positive markers, while anxious mood has negative affect but is unrelated to positive affect (Watson & Tellegen, 1985; Kendall & Watson, 1989), the ATQ-R may be especially helpful in identifying depression separate from anxiety disorders. Future research should address this issue.

Using the ATQ-R, this research supported several features of the States-of-Mind model (Schwartz & Garamoni, 1986). Results showed the absence

of a positive balance of positive/negative self-referent speech for an original and a cross-validation sample of psychometrically defined depressives and for inpatient depressed and psychiatric control groups. Also, the positive cognitive balance described by Schwartz and Garamoni (1986) was characteristic of the two normal groups. Through the use of two methods of calculating the balance of positive and negative self-statements, both inpatient samples showed a less positive balance than the analogue samples, consistent with their less functional status and other measures of psychopathology. On the proportionate measure using valence ratings, both inpatient groups fell within the "internal dialogue of conflict." On the proportion using frequency ratings, the Depressed inpatient group fell to the level of the "negative dialogue," a state characterized by the model as representing moderate psychopathology. Thus, it appears that the empirical data support the notion that the nonpathological balance of positive to negative thinking is an internal dialogue of 1.6:1.0 (.62 to .38) ratio of positive and negative thinking.

While the importance of individual differences in evaluating the valence of self-statements has been emphasized, valence ratings in all three comparisons in this research failed to add significantly to the variance accounted for by frequency ratings. However, positive and negative meaning ratings may in fact already be incorporated into the frequency ratings. The extensive work in developing and validating the ATQ and ATQ-R has perhaps *by definition* created self-statements personally relevant to the depressed individual.

Addition of valence ratings also permitted examination of the degree to which depressed subjects rated more negatively self-statements labeled "neutral" by the majority of "normals." Such a "depressive shift" would be consistent with a model of depression emphasizing a systematic negative distortion in cognitive processes. In summarizing previous research in this area, Clark and Beck (1989) suggested that a depressive mood state consistently biases against processing of positive self-relevant information, but that more severe clinical depression may be required for enhanced processing of negative self-relevant information. In this research, however, bias was not supported for either the two analogue groups or the inpatient depressed group. It is possible that the neutral statements, however, were not personally relevant to the dysphoric/depressed subjects.

The research suggests several questions of potential importance beyond the arithmetic calculation of the proportion of positively and negatively valenced self-referent speech. First, use of self-reported frequency of self-statements during the prior week inevitably confounds differences in their actual frequency and any systematic differences between depressed and nondepressed subjects' recall of positive and negative material. A number of empirical studies have in fact found that mildly depressed subjects tend to recall

equivalent positive and negative material and clinically depressed subjects a preponderance of negative material, compared with nondepressed controls who had a significant bias for recall of positive material (e.g., Breslow, Kocsis, & Belkin, 1981; Kuiper & Derry, 1982). This study's conclusions are limited, therefore, to the balance of positive and negative self-statements as recalled and reported at the time of testing, rather than to the actual frequency of such cognitions.

Second, an important issue is whether there is cognitive content specific to different types of psychopathology. Essential to this research were the negative self-statements of the ATQ, a test developed to discriminate depressed from nondepressed subjects. Were the same measures used with groups defined by psychometrics or diagnosis as anxious, for example, the resulting "state-of-mind" ratio may well have changed substantially—without corresponding change in degree of psychopathology. This specualtion is strengthened by the recent success of Beck and others in developing a cognitive checklist (CCL) of negative self-statements with a depression and an anxiety subscale (Beck, Brown, Steer, Eidelson, & Riskind, 1987). Thus, were an inventory with content specific to another disorder or one developed only through valence ratings by normal subjects utilized, item valence ratings could well become critical in examining the proportion of positive and negative thinking.

The concern of method variance must be raised. Our reliance on a single method of self-statement assessment—endorsement—leads to legitimate questions about method variance, although Schwartz and Garamoni (1986) reported similar findings using a variety of assessment measures. Additional study is needed concerning the degree to which the balance of positive and negative thinking is affected by both cognitive content and the means of measuring it.

APPENDIX

Automatic Thoughts Questionnaire—Revised[4]

Instructions

Listed below are a variety of thoughts that pop into people's heads. Please read each thought and indicate how frequently, if at all, the thought occurred to you *over the last week.* Please read each item carefully and cir-

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cle the appropriate answers on the answer sheet in the following fashion (1 = "not at all," 2 = "sometimes," 3 = "moderately often," 4 = "often," and 5 = "all the time").

Response	Thoughts
1 2 3 4 5	1. I feel like I'm up against the world.
1 2 3 4 5	2. I'm no good.
1 2 3 4 5	3. I'm proud of myself.
1 2 3 4 5	4. Why can't I ever succeed.

Remember, each sentence that you read is a *thought* that you may have had often, less frequently, or not at all. Tell us how often *over the last week* you have had each of the thoughts.

1 2 3 4 5	5. No one understands me.
1 2 3 4 5	6. I've let people down.
1 2 3 4 5	7. I feel fine.
1 2 3 4 5	8. I don't think I can go on.
1 2 3 4 5	9. I wish I were a better person.
1 2 3 4 5	10. No matter what happens, I know I'll make it.
1 2 3 4 5	11. I'm so weak.
1 2 3 4 5	12. My life's not going the way I want it to.
1 2 3 4 5	13. I can accomplish anything.
1 2 3 4 5	14. I'm so disappointed in myself.
1 2 3 4 5	15. Nothing feels good anymore.
1 2 3 4 5	16. I feel good.
1 2 3 4 5	17. I can't stand this anymore.
1 2 3 4 5	18. I can't get started.
1 2 3 4 5	19. What's wrong with me?
1 2 3 4 5	20. I'm warm and comfortable.
1 2 3 4 5	21. I wish I were somewhere else.
1 2 3 4 5	22. I can't get things together.
1 2 3 4 5	23. I hate myself.
1 2 3 4 5	24. I feel confident I can do anything I set my mind to.
1 2 3 4 5	25. I'm worthless.
1 2 3 4 5	26. Wish I could just disappear.
1 2 3 4 5	27. What's the matter with me?
1 2 3 4 5	28. I feel very happy.
1 2 3 4 5	29. I'm a loser.
1 2 3 4 5	30. My life is a mess.
1 2 3 4 5	31. I'm a failure.

1	2	3	4	5	32. This is super!
1	2	3	4	5	33. I'll never make it.
1	2	3	4	5	34. I feel so helpless.
1	2	3	4	5	35. Something has to change.
1	2	3	4	5	36. There must be something wrong with me.
1	2	3	4	5	37. I'm luckier than most people.
1	2	3	4	5	38. My future is bleak.
1	2	3	4	5	39. It's just not worth it.
1	2	3	4	5	40. I can't finish anything.

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