Dysphoria and self-focused attention: effects of feedback on task strategy and goal adjustment

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Eddington, K.M., & Foxworth, T.E.. (2012). Dysphoria and self-focused attention: Effects of failure feedback on task performance and goal setting. Journal of Social and Clinical Psychology, 31(9), 933-951.

Made available courtesy of The Guilford Press: http://dx.doi.org/10.1521/jscp.2012.31.9.933

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Abstract:

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Keywords: dysphoria | performance feedback | self-focused attention | SFA | self-regulation

Article:

*****Note: Full text of article below**

Journal of Social and Clinical Psychology, Vol. 31, No. 9, 2012, pp. 933-951

DYSPHORIA AND SELF-FOCUSED ATTENTION: EFFECTS OF FEEDBACK ON TASK STRATEGY AND GOAL ADJUSTMENT

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This study investigated the effects of dysphoria and self-focused attention (SFA) on task performance and goal adjustment following negative performance feedback. Participants (70 dysphoric and 70 nondysphoric) set a performance goal and completed an attention task before and after receiving performance feedback. SFA was induced using mirror exposure in half the sample. Consistent with motivational theories of depression, during the first task the dysphoric participants' response pattern reflected a cautious, vigilant approach. When the task was repeated following negative feedback, all groups improved overall performance, but the dysphoric participants in the low versus high SFA condition showed differential changes in rates of omission errors. An interaction between gender and dysphoria on goal adjustment also was found. Implications for the role of SFA and dysphoria in self-regulation are discussed.

BACKGROUND

Depression and dysphoria (depressive symptoms that may or may not indicate clinical depression) are characterized by high levels of negative self-focused attention (SFA; Green & Sedikides, 1999;

This work was supported by a New Faculty Grant from the University of North Carolina at Greensboro to KME.

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Ingram & Smith, 1984; Sloan, 2005; Takano & Tanno, 2009; Wood, Saltzberg & Goldsamt, 1990), defined as an exaggerated awareness of one's thoughts, feelings, bodily sensations, and actions. While SFA can be adaptive under some circumstances, reflecting healthy self-reflection (Carver & Scheier, 1990), maladaptive and excessive SFA is a feature of several forms of psychopathology (Ingram, 1990), including anxiety disorders (e.g., Clark & Wells, 1995). This excessive and rigid self-focus is particularly prevalent in major depression (Takano & Tanno, 2009; Teasdale & Green, 2004; Watkins, Moulds, & Mackintosh, 2005) and is associated with negative mood reactivity to daily stressful events (Moberly & Watkins, 2008). While certain individuals may be more or less prone to engage in excessive self-focus, it is unclear how that self-focus, once activated, may interfere with ongoing activities and functions.

Self-regulation, a motivational process by which individuals set, monitor, and pursue goals, is a critical ongoing function that may be disrupted when attention is drawn internally, particularly when that internal focus is excessive. The importance of goal pursuit for emotional well-being has been well documented (e.g., Carver & Scheier, 1990; Emmons, 1992), and evidence suggests that problems in goal pursuit lead to emotional and physical problems, including depression and anxiety (Elliot & Sheldon, 1998; Strauman & Higgins, 1987). A growing literature suggests that depression is characterized by an imbalance of two fundamental self-regulatory systems, specifically hypoactivity of the promotion and hyperactivity of the prevention systems (Strauman, 2002).

The promotion system parallels the biobehaviorally based approach system (e.g., Gray, 1990) and involves strategic approach behaviors and sensitivity toward reward or non-reward (Higgins, 2001; Strauman, 2002). In signal detection terms, a promotion orientation toward task performance ensures hits and ensures against errors of omission (eager or risky responding; Higgins, 1997). The prevention system parallels the avoidance system (e.g., Gray, 1990) and involves strategic avoidance behaviors and sensitivity toward the presence or absence of negative outcomes (Higgins, 2001; Strauman, 2002). In signal detection terms, a prevention orientation ensures correct rejections and ensures against errors of commission (cautious responding). Evidence has supported the notion that stronger prevention-type motivation as well as weaker promotion-type motivation characterize depression and dysphoria (Dickson & MacLeod, 2004; Henriques & Davidson, 2000; Kasch, Rottenberg,

Arnow, & Gotlib, 2002; Meyer, Johnson, & Winters, 2001; Miller & Markman, 2007). However, some researchers have argued that the depression-prevention relationship is attributable primarily to anxiety (e.g., Carver, 2001) which is frequently comorbid with depression.

Self-regulation is a dynamic process that involves taking in, and responding to, feedback and cues from the environment. In healthy individuals, negative feedback regarding performance on goal-related tasks leads to increased accuracy and improved performance (e.g., Elliot, Sahakian, Herrod, Robbins, & Paykel, 1997). However, in depressed individuals, negative feedback has been shown to cause decrements in subsequent performance (Beats, Sahakian, & Levy, 1996; Douglas, Porter, Frampton, Gallagher, & Young, 2009; Holmes & Pizzagalli, 2007) as well as lower performance expectancies and perceptions of self-efficacy (Wenzlaff & Grozier, 1988; Wright & Mischel, 1982). SFA may play an important role in how feedback is processed. Carver (1979) proposed a model suggesting that SFA triggers self-evaluation and efforts to meet performance goals. However, a number of factors can interrupt this process, including the presence of negative affect. When outcome expectancies are not favorable, the interruption may lead the individual to "mentally withdraw" from the task at hand. This type of SFA-by-affect interaction has been found with individuals with performance anxiety. For example, in a study of participants with test anxiety, Carver, Peterson, Follansbee, and Scheier (1983) found that induced SFA impaired test performance and lowered effort/persistence for high anxiety participants but enhanced performance for those with low anxiety, a finding that has been replicated (Rich & Woolever, 1988).

Given the marked gender discrepancy in prevalence rates of depression, it may be important to examine whether gender plays a role in determining the effects of SFA on self-regulation. Surprisingly little systematic research has addressed this issue, although findings from several studies suggest that gender is an important factor in evaluating performance and goal selection. For example, high self-focus (compared to external focus) has been shown to lead to self-handicapping behaviors (e.g., not practicing for an upcoming task) both before and after performance feedback in men but not in women, who actually tend to increase task-related effort (Dietrich, 1995; Kimble & Hirt, 2005). It has also been noted that women place greater value on effort than men (McCrea, Hirt, Hendrix, Milner, & Steele, 2008), and that SFA increases fear of failure in men,

while fear of failure in women was unaffected by self-focus (Hirt, McCrae, & Kimble, 2000). Thus, it appears that gender may exert important effects at least in nondysphoric samples. However, the extent to which it moderates SFA effects in dysphoric samples has not been examined.

The primary purpose of the present study was to examine the combined effects of SFA and dysphoric mood on participants' approach toward a computer task (i.e., strategy) and goal adjustment before and after receiving performance feedback. We used a computerized sustained attention task that allowed us to examine global changes in performance and, more importantly, to examine two types of errors (omission and commission). Error patterns provide important information about task strategy as noted above in distinguishing vigilant/cautious versus eager/risky strategic approaches.

Dysphoric and nondysphoric participants completed the attention task twice, before (Task 1) and after (Task 2) receiving (contrived) feedback that, based on their performance, they would not qualify for a possible monetary reward. After receiving feedback, participants could make adjustments to their goal for Task 2 and/or to their performance (adjust effort). Half of the participants in the dysphoric group and half in the nondysphoric group completed both computer tasks in front of a mirror, a frequently-used method for inducing SFA (e.g., Eidelman & Silvia, 2010; George & Stopa, 2008; Wicklund & Duval, 1971). The mirror manipulation allowed us to evaluate both the independent and combined contributions of dysphoria and SFA. Finally, we assessed affect at three time points: before Task 1, after feedback, and after Task 2.

We predicted that the dysphoric group (regardless of SFA condition) compared to the nondysphoric group would have fewer errors of commission when completing computer Task 1, reflecting the use of a cautious response strategy. Our second hypothesis involved the predicted role of SFA in performance changes following feedback. Specifically, we predicted an interaction of SFA by dysphoria on change in performance. We were not concerned with group differences in absolute error rates at Task 2. Rather, in the dysphoric group, we predicted differential effects of the SFA manipulation, with the performance of participants in the high, but not the low, SFA condition showing a response pattern consistent with mental withdrawal from the task and lack of increased effort even after

controlling for anxiety. Given the orientation toward caution and vigilance in this group, we expected this difference to be evinced primarily by an increase in errors of omission rather than commission. We also included gender in these analyses in order to explore possible moderating effects.

Our third hypothesis concerned participants' performance goal setting. Our primary focus in the current study was not on absolute goal levels per se but on goal adjustment. The extant literature is mixed in terms of the predicted relationships among mood, performance expectations, and goal setting. A mood-congruence conceptualization would suggest that a dysphoric mood is associated with more pessimistic performance expectations, resulting in lower goals and standards, and several studies support this notion (e.g., Davis, Kirby, & Curtis, 2007). An alternative hypothesis is that dysphoric individuals set consistently high goals and hold personal standards that are often unreachable, consistent with the literature on depression and perfectionism (Scott & Cervone, 2002). Others report no effects of dysphoria on absolute goal levels but that intra-individual discrepancies between goals and perceived abilities are due to lower self-efficacy among dysphoric individuals (Kanfer & Zeiss, 1983; Lane, Whyte, Terry, & Nevill, 2005).

To further complicate predictions about goal setting, gender might also have a moderating effect. The literature on self-handicapping suggests that, unlike females, males may make an upward adjustment following feedback (setting a goal that is too high, such that failure could be attributed to being overly ambitious rather than to lack of ability). However, it is possible that self-handicapping is a psychologically adaptive process not seen in depressed males. Instead, the relationship between depression and self-efficacy would suggest a downward adjustment based on lack of confidence and negative self-blame. There is little systematic research examining gender differences in cognitive factors associated with depression on which to base a firm prediction, so we present these analyses as exploratory.

In addition to our primary focus on goal-directed behavior, we also obtained data on affect. We expected that the dysphoric participants would show higher levels of NA and lower levels of PA across all time points. We also hypothesized that performance feedback would increase NA for the dysphoric participants but would have no significant effect on mood for the nondysphoric participants.

METHOD

PARTICIPANTS

This study included undergraduate psychology students ages 18 to 28 (M = 19.2 years, SD = 1.5). During screening, participants completed the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). Those scoring above 11 or below 7 qualified for the dysphoric and nondysphoric groups, respectively. These cutoffs are consistent with recommendations regarding use of the BDI with nonclinical samples (Kendall, Hollon, Beck, Hammen, & Ingram, 1987). Participants who had an excessively high error rate (> 25%) or an excessively low hit rate (< 25%) on the computer task were excluded.

Of the 147 participants who met inclusion criteria, 140 (70 in the dysphoric group and 70 in the nondysphoric group) provided complete data and were included in the final sample. The sample was primarily female (68%) with a mean age of 19 (range 18–28). The mean BDI score for the dysphoric group was 17.9 (range 12 to 39) and for the nondysphoric group, 2.6 (range 0 to 6). The two groups did not differ significantly on age, $t(133) = 1.69$, ns, nor in the proportion of females, $X^2(1, 135) = 0.73$, $p > .05$. The dysphoric group had 20 males while the nondysphoric group had 25.

MATERIALS

Beck Depression Inventory (BDI). This self-report measure was used to assess the severity of depressive symptomatology (Beck et al., 1961). The BDI has demonstrated reliability and validity (Beck, Steer, & Garbin, 1988; Hammen, 1980) and has been recognized to tap features that map onto clinical depression. Cronbach's alpha for the BDI in the current sample was .91, indicating high internal consistency.

Zung Self-Rated Anxiety Scale (ZSAS). The ZSAS is a self-report questionnaire that assesses symptoms associated with anxiety (Zung, 1971). This measure includes 20 items that are rated on a Likert scale. The ZSAS is reliable (α = .77; test–retest coefficient = .69) and shows good convergent validity (Zung, 1971). Reliability in the current study was slightly lower (α = .67), in the borderline range of acceptability.

Positive and Negative Affectivity Schedule (PANAS). The PANAS is a self- report measure that is commonly used to assess changes in affective state (Watson, Clark, & Tellegen, 1988). It consists of a 10-item positive (PA) and 10-item negative (NA) subscale. The PANAS was administered to assess the general mood state of the participants at various points in the experimental session. Both subscales have documented reliability and validity (Watson & Clark, 1991). In the current sample, Cronbach's alpha was .89 for both subscales, indicating high internal consistency.

d2 Computer Task. The d2 test involves the presentation of a sequence of visually similar stimuli (the letters d or p accompanied by either 1, 2, 3, or 4 apostrophes above or below the letter) and requires the participant to detect and respond to a target (in this case a d accompanied by two apostrophes). The original paper-and-pencil version of the test (Brickenkamp & Zillmer, 1998) has demonstrated good internal consistency and validity as a measure of attention (Bates & LeMay, 2004). Scoring of the d2 test yields measures of correct responses as well as errors of omission and commission. Stimuli were presented one-by-one on a computer screen for 250 ms. A fixation cross (+) replaced each image's location in the center of the screen for a duration of 350 ms between images. Each trial had a fixed duration including 700 milliseconds for participants to record a response, regardless of actual response time. Therefore, all participants completed approximately the same number of trials, between 260 and 263.

PROCEDURE

Following consent procedures, participants completed written questionnaires (including a Time 1 PANAS) and were randomly assigned to a mirror or no mirror condition, with the requirement that there be an equal number of participants (35) in each of the 4 groups. For the mirror condition, a 24″ by 36″ mirror affixed to the wall at eye level 9.5 inches behind the computer monitor was displayed. Although the monitor was placed in front of the mirror, the mirror (and the participant's reflection) was clearly visible when seated in front of the keyboard.

Written instructions for the d2 computer task were to respond as quickly as possible to the target. Instructions that are framed ex-

clusively in promotion or prevention terms affect the strategy used by participants (e.g., Shah, Higgins, & Friedman, 1998). Therefore, the instructions for the d2 test were balanced in terms of their focus on gaining or losing points: *"Every time you correctly press the button when the "d" has 2 apostrophes, you get 1 point. Every time you press the button when the "d" has more or less than 2 apostrophes, you lose 1 point. You will have 5 minutes to complete as many trials as possible."*

Participants were then given 30 seconds of practice trials and chose a performance goal from a list of 7 options numbered 1 to 7, with a 7 indicating a greater number of points earned and therefore a higher performance goal. Each of the 7 goal options indicated a 10-point range of values corresponding to the number of points they expected to earn during the 4-minute task. Participants were told that if their performance reached their target goal, they would be entered into a drawing for a $50 gift card.

Feedback after the first d2 task (Task 1) was delivered on the screen indicating that the participant's performance did not qualify them for the gift card reward. A second PANAS (Time 2) was administered and participants were then told that they could attempt the task one more time to try to qualify for the drawing. The second repetition of the d2 (Task 2) was identical in design and administration to the first and a third PANAS (Time 3) was administered upon completion of the second repetition. All participants were debriefed and entered into the prize drawing (regardless of performance).

DATA ANALYTIC STRATEGY

Each of the primary hypotheses was tested using the general linear modeling (GLM) procedure using PASW Statistics 18.0 software. The number of commission errors and correct rejections generated from the d2 data are redundant, so only commission errors were included as dependent variables in analyses of performance data. Similarly, because omission errors and correct hits are redundant, only errors of omission were included. Given the debate over whether prevention system upregulation in depression is due to comorbid anxiety, we entered anxious symptoms as a covariate in the analyses testing our hypotheses about performance strategies in order to parse out the unique contribution of depression.

For each GLM multivariate procedure, an omnibus test (Wilk's lambda) indicated whether any effect exists on the vector of de-

pendent variables. When significant, the omnibus test was then followed by univariate tests specifying the nature of the underlying effect and, when significant, were further probed using either planned or post-hoc comparisons. Note that we had no a priori reason to expect gender differences in response strategies before feedback, so gender is not included in the analyses of Task 1 only but is included in analyses looking at responses to feedback.

RESULTS

OVERALL PERFORMANCE

Collapsing across all error types, results showed that the dysphoric group had a significantly lower overall error rate, $t(138) = 2.31$, $p = .02$, across the two task repetitions (dysphoric group $M = 15.5$, $SD = 11.4$; nondysphoric group $M = 20.2$, $SD = 12.8$).

STRATEGIC APPROACHES: TASK 1 PERFORMANCE

A 2 (dysphoric or nondysphoric) × 2 (high or low SFA) multivariate mixed model was used to test the hypothesis that, prior to performance feedback (Task 1 only), the dysphoric group would show a vigilant response pattern (minimizing commission errors and maximizing correct rejections), regardless of mirror condition. Anxiety level (ZSAS score) was entered as a covariate.[1] The number of commission errors was the primary dependent variable, but to ensure that the results were not attributable to overall performance differences, we also included omission errors. Univariate tests showed that the dysphoric group had a significantly lower number of commission errors, dysphoric $M = 17.1$, $SD = 14.4$; nondysphoric $M = 25.0$, $SD = 18.7$; $F(1, 135) = 5.56$, $p = .02$; partial $\eta^2 = .04$, with no main effect of SFA [$F(1, 135) = 1.66$, *ns*] and no interaction, $F(1, 135) = 0.03$, *ns*. There were no significant dysphoria group differences for number of omission errors, dysphoric $M = 13.8$, $SD = 16.3$; nondysphoric $M = 15.5$, $SD = 16.2$; $F(1, 135) = 0.187$, *ns*, and again no main effect of SFA, $F(1, 135) = 0.01$, *ns* and no interaction, $F(1, 135) = 1.96$, *ns*.

1. Anxiety scores were marginally correlated with total number of errors across the two tasks ($r = -.13$, $p = .12$) and with commission errors across tasks ($r = -.16$, $p = .06$).

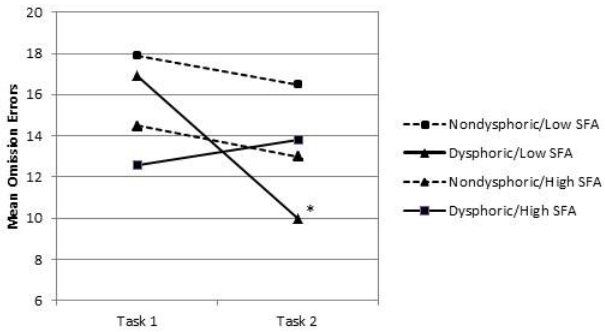

FIGURE 1. Group changes in number of errors of omission from Time 1 to Time 2

STRATEGIC APPROACHES: EFFECTS OF PERFORMANCE FEEDBACK

A 4-way repeated measures multivariate mixed model was used to test the hypothesized dysphoria by SFA interaction on performance changes following feedback and to explore possible gender effects. Task (d2 Task 1 and Task 2), dysphoria level, SFA condition, and gender were the independent variables and omission and commission errors were the dependent variables. Again, anxiety was entered as a covariate.

Univariate tests showed a main effect of task on errors of omission, $F(1, 126) = 6.40$, $p = .01$; partial $\eta^2 = .05$, but not on errors of commission, $F(1, 126) = 0.82$, *ns*, however the main effect on omission errors is qualified by a further 3-way interaction between task, dysphoria, and SFA, $F(1, 126) = 10.78$, $p = .001$; partial $\eta^2 = .08$, as shown in Figure 1. This interaction was not moderated by gender, $F(1, 126) = 0.25$, *ns*. No significant interactions emerged for commission error rates.[2]

To further explore the 3-way interaction and test our specific prediction about the differential effects of SFA within the dysphoric group, we examined change in omission errors in the four relevant groups (as shown by the four lines in Figure 1). The dysphoric/high SFA *increased* their error rate on average by (difference score) $M = 1.17$ ($SD = 8.4$). The other 3 groups *decreased* their error rates by $M = -8.91$ ($SD = 10.6$) for the dysphoric/low SFA, $M = -1.48$ (*SD*

2. The lower-order task by mirror and task by mirror by gender effects were also significant; complete results are available upon request from the corresponding author.

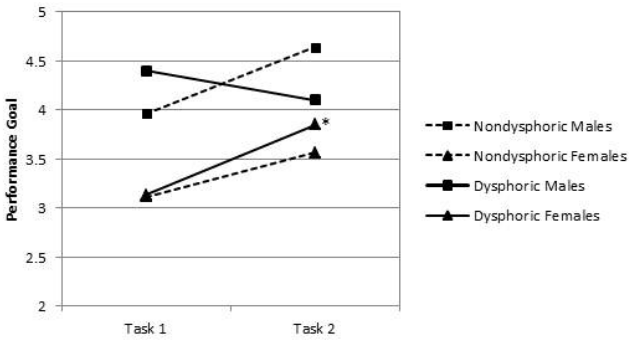

FIGURE 2. Group means illustrating the time X gender X dysphoria interaction for performance goal changes

= 9.9) for the nondysphoric/high SFA, and M = -1.31 (SD = 8.0) for the nondysphoric/low SFA groups. Planned comparisons showed that the largest mean difference was between the high and low SFA dysphoric groups (mean difference = 10.09, SE = 2.52, $p < .001$). Additional post-hoc tests (Tukey's HSD) showed that the low SFA dysphoric group also differed significantly from the two nondsyphoric groups (low SFA nondysphoric: mean difference = 7.43, SE = 2.52, $p = .004$; high SFA nondysphoric: mean difference = 7.60, SE = 2.52, $p = .003$); all other paired comparisons were nonsignificant.

GOAL ADJUSTMENT

The role of dysphoria and SFA, as well as gender, on changes in goal adjustment, was explored using a repeated measures mixed model. Results revealed a significant main effect of gender, with males setting significantly higher goals overall than females, $F(1, 127) = 8.00$, $p = .005$; partial $\eta^2 = .06$. The mean goal for males and females across the two task repetitions was 4.3 (SD = 1.8) and 3.4 (SD = 2.1), respectively. There was also a significant 3-way interaction of task, dysphoria, and gender, $F(1, 127) = 4.29$, $p = .04$; partial $\eta^2 = .03$. There was no main effect of SFA, $F(1, 127) = 0.02$, *ns*, nor of dysphoria, $F(1, 127) = 1.79$, *ns*.[3]

To further explore the 3-way interaction, we examined change in goal selection in the four relevant groups (as shown by the four lines in Figure 2). The dysphoric males made a downward goal ad-

3. None of the other 2-, 3-, or 4-way interactions was significant.

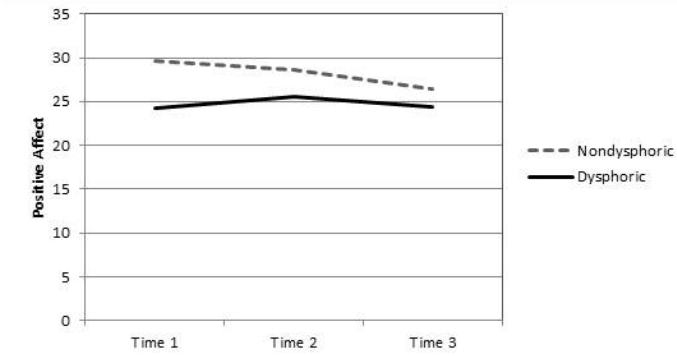

FIGURE 3. Changes in PANAS positive affect over time by dysphoria group

justment with a mean decrease (difference score) of $M = 0.30$ ($SD = 2.4$). The other 3 groups made upward goal adjustments with mean increases of $M = 0.72$ ($SD = 2.0$) for the dysphoric females, $M = 0.44$ ($SD = 1.8$) for the nondysphoric females, and $M = 0.68$ ($SD = 2.1$) for the nondysphoric males. Post-hoc comparisons showed that the largest mean difference was between the dysphoric males and females, which approached significance (mean difference = 1.02, SE = .55, Tukey's HSD test $p = .06$). No other mean pair differences approached significance.

POSITIVE AND NEGATIVE AFFECT

The hypothesis that performance feedback would increase NA for the dysphoric participants but not for the nondysphoric participants was tested using a 2 (dysphoria group) × 3 (time) repeated measures multivariate model with PANAS NA and PA as the dependent variables. As expected, univariate tests revealed a main effect of dysphoric group on NA, $F(1, 138) = 63.98$, $p < .001$; partial $\eta^2 = .32$, and PA, $F(1, 138) = 7.62$, $p = .007$; partial $\eta^2 = .05$. Mean PANAS NA scores averaged across all three time points were 19.7 ($SD = 6.7$) for the dysphoric and 12.6 ($SD = 3.1$) for the nondysphoric groups; mean PA scores were 24.7 ($SD = 7.0$) for the dysphoric and 28.2 ($SD = 9.0$) for the nondysphoric groups. The interaction between dysphoria group and time was significant for PA, $F(2, 272) = 4.39$, $p =$

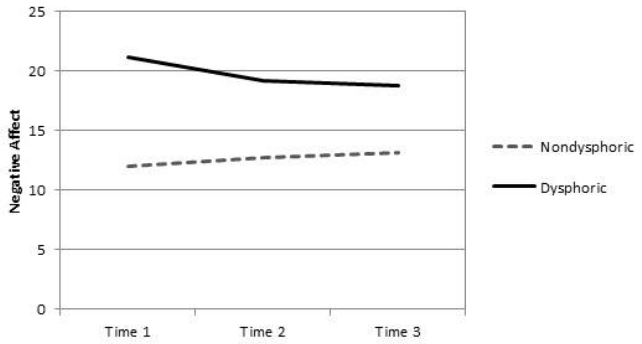

FIGURE 4. Changes in PANAS negative affect over time by dysphoria group

.01; partial η^2 = .03, and NA, $F(2, 272) = 11.64$, $p < .001$; partial η^2 = .08, illustrated in Figures 3 and 4.

Further probing of these interactions using planned comparisons (with p corrected for multiple comparisons) within each of the four groups as illustrated in Figures 3 and 4 showed that the nondysphoric group had a significant decrease in PA (mean difference = 3.10, SE = 1.01, $p < .05$). The dysphoric group had a significant decrease in NA from Time 1 to Time 2 (mean difference = 1.93, SE = .61, $p < .05$) as well as Time 1 to Time 3 (mean difference = 2.40, SE = .76, $p < .05$).

DISCUSSION

One of the fundamental assumptions of this study was that depression and dysphoria are characterized by the tendency to approach novel tasks with a cautious, risk-avoidant response style. While a number of studies have reported an association between depression and measures of dispositional tendencies toward promotion and prevention orientation, few have made specific predictions about group differences in performance on laboratory tasks. Our results suggest that dysphoric individuals default to a cautious response style and performed with greater accuracy compared to the nondysphoric individuals. Thus, the dysphoric participants approached the task with a strategy that was quite effective compared

to the nondysphoric participants, whose rate of commission errors suggests a more eager approach.

A novel aspect of the current study was the focus on dynamic changes in dysphoric participants' behavior after receiving performance feedback. Our results showed that dysphoria had differential effects on task performance following feedback depending upon levels of SFA. Among the dysphoric participants not exposed to the mirror, there was a substantial decrease in target misses. This group showed marked improvement in maximizing correct hits without decrements in accuracy. These results are in line with previous studies on anxiety but are not redundant given that we controlled for anxiety in our analyses. By contrast, the dysphoric group exposed to the mirror condition did not show this improvement and instead showed a slight increase in target misses. Although this within-group change was not statistically significant, these results are in line with Carver et al.'s (1983) suggestion that the interaction of SFA and negative affect leads to task disengagement. Furthermore, the difference between the high and low SFA conditions within the dysphoric group was significant and quite striking. Thus, it appears that the presence of SFA had an important impact on task performance for the dysphoric, but not the nondysphoric, group.

The lack of a main effect of SFA on performance changes rules out the possibility that SFA alone leads to task disengagement. Error patterns remained relatively constant across task repetitions for the nondysphoric groups, with slight improvements. Instead, it was SFA combined with dysphoria that produced divergent effects on performance. The present study cannot directly speak to questions about underlying mechanisms, but for individuals who are already depressed, the priming effects of SFA may increase goal conflict or may increase self-blame in the face of negative feedback, leading to lower performance expectancies and reduced effort.

When a personal goal or standard is not met, it is possible to increase success by adjusting performance or by adjusting one's standard. Our results showed that the pattern of goal adjustment following negative performance feedback was quite different for the dysphoric males compared to the other groups. With the exception of the dysphoric males, all groups showed mean increases in their goals on the second task, although this increase was significant only for the dysphoric females. Furthermore, the difference between dysphoric females and dysphoric males on goal adjustment ap-

proached significance. This suggests the possibility that, with the exception of dysphoric males, participants may have estimated that their performance would improve with practice. There are several possible explanations for the difference between the dysphoric males and females. For example, goal adjustment in the males might have been influenced by the previously noted fear of failure (Hirt et al., 2000) or may reflect mood congruent processing (Davis, Kirby, & Curtis, 2007). However, the upward goal adjustment in the dysphoric females argues against a straightforward mood congruence (i.e., negative expectations and pessimism) explanation. Although the sample is small and the methods do not allow us to determine underlying causal factors, at a minimum our data suggest that dysphoric males and females may react quite differently to success and failure experiences. This finding underscores the importance of examining gender effects in future studies.

Results did not support our predictions regarding affective reactions to feedback. Dysphoric participants reported higher NA and lower PA across all time points but did not increase NA following feedback as predicted. This is perhaps not entirely surprising given that the feedback did not involve a threat to the participants' sense of self, for example by equating failure with deficits in some important skill or characteristic (Wenzlaff & Grozier, 1988). Furthermore, the consequence of task performance was either reward or nonreward, cues to which depressed individuals are less sensitive.

Several limitations should be noted in the current study. First, the study used a student sample with primarily mild to moderate depressive symptoms, and it is unclear whether these results would generalize to a clinical population. Second, our study included only a negative feedback condition. Examining responses to various types of feedback may shed light on how the combined effects of dysphoria and SFA impact the ongoing and dynamic process of goal pursuit. Third, the study focused on goal setting and performance in an artificial setting using a simple laboratory task. Studies with greater ecological validity are needed to examine the impact of SFA and depression on goal pursuit.

Newman et al. (1993) have characterized maladaptive behavior as a "breakdown in the self-regulation process" (p. 165) and argue that the presence of motivationally significant stimuli can interfere with information processing and with the regulation of ongoing task response. Attentional control strategies and responses to failure ex-

periences may be important targets for intervention. Indeed, therapeutic efforts aimed at correcting motivational aspects of depression have been shown to improve symptoms (Strauman et al., 2006). Furthermore, the merging of motivational and cognitive models of depression may lead to improvements in treatment outcomes.

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