

Self-Perpetuating Properties of Dysphoric Rumination

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Hypotheses about the self-perpetuating properties of ruminative responses to depressed mood were tested in 2 laboratory studies and 2 questionnaire studies with dysphoric and nondysphoric Ss. Studies 1 and 2 supported the hypothesis that dysphorics induced to engage in self-focused rumination would report reduced willingness to engage in pleasant, distracting activities that could lift their moods, even if they believed they would enjoy such activities. Studies 3 and 4 confirmed the hypothesis that dysphorics induced to ruminate in response to their moods would feel they were gaining insight into their problems and their emotions. Therefore, they might have avoided distraction because they believed it would interfere with their efforts to understand themselves. Depressed mood alone, in the absence of rumination, was not associated with either lower willingness to participate in distractions or an enhanced sense of insightfulness.

Self-focused attention can maintain or exacerbate a depressed mood and can contribute to pessimistic thinking (cf. Carver & Scheier, 1990; Ingram & Smith, 1984; Ingram, Lumry, Cruet, & Sieber, 1987; Larsen & Cowan, 1988; Morrow & Nolen-Hoeksema, 1990; Musson & Alloy, 1988; Nolen-Hoeksema & Morrow, 1991; in press; Pyszczynski, Hamilton, Herring, & Greenberg, 1989; Pyszczynski, Holt, & Greenberg, 1987; Smith, Ingram, & Roth, 1985). Some people appear more likely than others to engage in self-focused rumination when in a depressed mood, however (Nolen-Hoeksema, Morrow, & Fredrickson, 1993; Pyszczynski & Greenberg, 1986; Wood, Saltzberg, Neale, Stone, & Rachmiel, 1990). Given the negative effects of self-focus on depressed mood and thinking, why would a dysphoric person continue to self-focus rather than to use pleasant, distracting activities to lift his or her mood? In the studies reported here, we tested hypotheses about the self-perpetuating properties of self-focused rumination in dysphoric people. First, we tested the hypothesis that dysphoric people who engage in self-focused rumination would underestimate how much they would enjoy pleasant distractions and, thus, would be less willing to engage in such distractions. Second, we tested the hypothesis that dysphoric people who engage in self-focused rumination would show reduced willingness to engage in distracting, pleasant activities, even if they believe they would enjoy such activities. Third, we tested the hypothesis that people who are ruminating feel they are gaining insight into their problems and their emotions. Therefore, they might avoid

distraction because they believe it would interfere with their efforts to understand themselves.

Effects of Self-Focused Attention on Depressed Mood and Thinking

Self-focused attention has been conceptualized and operationalized in a variety of ways by researchers interested in the role of self-focused attention in depression. Smith and Greenberg (1981) examined the link between depression and private self-consciousness (Fenigstein, Scheier, & Buss, 1975), defined as the disposition to analyze one's personality and focus on one's internal states, regardless of what mood one is in. They found that subjects with higher levels of depressed mood on self-report questionnaires tended to score higher on a scale measuring private self-consciousness (see also Ingram et al., 1987; Ingram & Smith, 1984; Larsen & Cowan, 1988; Smith, Ingram, & Roth, 1985). Private self-consciousness has also been associated with negative evaluations of the self (Smith et al., 1985).

The self-regulatory self-focus theories (Carver & Scheier, 1981; Duval & Wicklund, 1972; Hull & Levy, 1979; Pyszczynski & Greenberg, 1987) have been concerned with people's tendency to self-focus following a negative event or the realization that they are not meeting important goals. They argue that people who perpetually focus on their inability to overcome negative events or achieve important goals are at risk for prolonged depressed mood and negative thinking. In support of a link between this "depressive self-focusing style" and depression, Pyszczynski and Greenberg (1985, 1986) found that dysphoric people self-focused more following failure than success, whereas nondysphoric people did not show this pattern of differential self-focusing.

Some studies testing the self-regulatory self-focus theories have induced self-focus by placing subjects in a room with a mirror or asking them to read or write passages that include the words *I* and *me* in them (Barden, Garber, Leiman, Ford, & Masters, 1985; Gibbons et al., 1985; Scheier & Carver, 1977). These studies have found that dysphoric subjects who are made to self-focus by such manipulations tend to experience in-

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creased or sustained negative affect, whereas dysphoric subjects made to focus away from the self show reductions in negative mood. In addition, dysphoric subjects made to self-focus have more pessimistic expectancies for future events (Pyszczynski, Holt, & Greenberg, 1987), and remember more negative events from their past (Pyszczynski et al., 1989) than externally focused dysphoric subjects.

We have been investigating the role of another type of self-focused attention in depression, labeled *ruminative responses to depressed mood*. Ruminative responses to depressed mood are thoughts and behaviors that focus individuals' attention on their depressive symptoms and on the causes and consequences of those symptoms (Nolen-Hoeksema, 1991). Examples include thinking about how tired and unmotivated you feel, wondering if your problems in sleeping will continue, worrying about how the dysphoria is affecting your work or your family life, and wondering what is wrong with you that is making you dysphoric. Although such concerns may naturally and reasonably arise for most people when they experience a depressed mood, we have argued that people who continue to focus on such thoughts without taking action either to overcome problems in their lives or to distract themselves from the thoughts will experience prolonged periods of depressed mood. Two studies have shown that many people initially engage in some self-focused rumination (as just defined) when they experience a depressed mood, but most people are able to disengage from this rumination after a short while by participating in pleasant, distracting activities (Nolen-Hoeksema et al., 1993; Wood et al., 1990). A subset of people continue to engage in self-focused rumination when in a depressed mood, however, and these people tend to experience longer periods of depressed mood than those who use pleasant, distracting activities to manage their mood (see also Lewinsohn & Libet, 1972; Nolen-Hoeksema & Morrow, 1991; Rehm, 1978; Zeiss, Lewinsohn, & Muñoz, 1979). The relationship between ruminative responses and prolonged depressed moods remained significant in these studies even after the initial severity of the subjects' moods was statistically controlled.

Studies by other investigators of the ways people choose to cope with distress-inducing events also suggest that self-focused, ruminative coping strategies are associated with longer and more severe periods of depression and dysphoria. For example, people who focus on a negative event, wishing it would have gone differently, report more negative mood symptoms (Coyne, Aldwin, & Lazarus, 1981; Felton & Revenson, 1984). People who seek excessive information about a situation before acting are more likely to be depressed (Coyne et al., 1981; Folkman & Lazarus, 1986; Miller & Lewis, 1977). In contrast, several studies suggest that distraction or denial may be an adaptive coping strategy in the short run, perhaps because it allows the individual to control distress (see Carver, Scheier, & Weintraub, 1989; Cohen & Lazarus, 1973; Suls & Fletcher, 1985; Wilson, 1981). In the long run, people need to attend to the problems or events that lead them to become dysphoric (Suls & Fletcher, 1985). However, we have found that people who use pleasant events to manage their moods are more likely to turn to active problem solving as a long-term strategy for coping, perhaps because their distress has been lifted enough that they feel capable of

problem solving (Nolen-Hoeksema & Morrow, 1991; Nolen-Hoeksema, Parker, & Larson, 1992).

In the laboratory, we induced rumination by having subjects focus on their current feeling states, their possible causes, and their possible consequences. This rumination induction maintains or increases depressed mood in dysphoric subjects, whereas a distraction induction (having them focus on geographical locations and external objects) leads dysphoric subjects to experience significant relief from their depressed moods, to a level similar to that of nondysphoric control groups (Lyubomirsky & Nolen-Hoeksema, 1993; Morrow & Nolen-Hoeksema, 1990; Nolen-Hoeksema & Morrow, in press).

Dysphoric subjects induced to ruminate also gave more pessimistic attributions for hypothetical events and for interpersonal problems (Lyubomirsky & Nolen-Hoeksema, 1993) than did dysphoric subjects who first distracted from their mood or than did nondysphoric control groups. On the other hand, dysphoric subjects made to distract were no more pessimistic in their attributions for events than were the nondysphoric controls. Similarly, dysphoric subjects made to ruminate chose more depressive and distorted interpretations of hypothetical life events on the Cognitive Biases Questionnaire (Krantz & Hammen, 1979) than did dysphoric subjects who first distracted or than did nondysphoric subjects (Lyubomirsky & Nolen-Hoeksema, 1993). Again, dysphoric subjects who first distracted did not differ from nondysphoric controls in the number of depressive distorted responses they selected. Finally, dysphoric subjects made to ruminate subsequently generated poorer quality solutions to hypothetical interpersonal problems than did dysphoric subjects made to distract before engaging in problem solving (Lyubomirsky & Nolen-Hoeksema, 1993). In contrast, dysphoric subjects who distracted before problem solving generated solutions that were as high in quality as those of nondepressed control groups.

Thus, there is increasing evidence that dysphoric people who engage in self-focusing and rumination tend to maintain their depressed mood and to demonstrate more pessimistic thinking and poorer problem solving. In contrast, dysphoric people who engage in activities to reduce self-focus tend to experience relief from their dysphoria and show less pessimistic thinking and better problem solving. Given the clear benefits of distraction and the costs of self-focusing and rumination, what compels some dysphoric people to persist in self-focusing and rumination rather than turn to pleasant activities to relieve their mood?

Expectations and Willingness to Participate in Pleasant Activities

According to expectancy-value theory (e.g., Rotter, 1954; Vroom, 1964), the likelihood that an individual will perform a particular behavior (e.g., engage in a pleasant, distracting activity) to attain a particular goal (e.g., lift his or her mood) depends on the value of the goal to the individual and his or her expectancy of obtaining that goal (or his or her outcome expectation). This suggests that whether a dysphoric individual, who presumably values the goal of relieving his or her dysphoria, will participate in pleasant activities depends on his or her expectations for the outcome of participating in these activities. Dysphoric peo-

ple who have low expectations that they will enjoy the pleasant activities and that these activities will lift their moods should be less likely or willing to participate in these activities than dysphoric people who have high expectations for enjoying the activities.

Our first hypothesis was that dysphoric individuals who initially ruminate in response to their moods will have lower expectancies for enjoying pleasant activities and thus will be more likely to avoid them than individuals who do not engage in self-focused rumination, because such rumination heightens depressogenic thinking. In other words, self-focused rumination can negatively distort dysphorics' expectations of the utility of pleasant activities (e.g., "I don't think I'll enjoy seeing a movie"), lowering their outcome expectations (e.g., "Seeing a movie is not likely to lift my mood"). Consequently, dysphoric people who engage in self-focused rumination may not choose to participate in the very activities that have been shown to be successful at relieving their moods.

Bandura's (1986) social-cognitive theory, however, suggests that dysphoric people may be unlikely or unwilling to participate in pleasant activities even if they believe they would enjoy such activities. Bandura distinguishes between people's expectations for the outcomes of behaviors or activities (outcome expectations) and people's expectations that they will be able to perform these behaviors or activities (efficacy expectations). Dysphoric individuals who do not expect to adequately perform an activity (e.g., get themselves to pack and drive to the beach with a friend) will not be willing to engage in such an activity, even if they believe the outcome of the activity would be relief from their depressed mood (see Bandura, 1989; Bandura & Cervone, 1983).

Our second, alternative hypothesis was that, relative to nondysphorics and dysphorics who distract themselves, dysphorics who engage in self-focused rumination will report being less willing to engage in pleasant, distracting activities, even if they believe they would enjoy such activities, because they will have lower efficacy expectations. Self-focused rumination may lower the efficacy expectations of dysphoric individuals in several ways. First, by definition, self-focused rumination involves focusing on one's symptoms of depression and dysphoria, such as fatigue, apathy, and lethargy. Dysphoric individuals who are ruminating may understand that they would enjoy themselves if they became more active but may decide that they are too tired or that they "just don't feel like" engaging in an activity that requires energy and initiative. Second, focusing on how sluggish they feel may lead dysphorics to feel daunted or overwhelmed by the difficulty of overcoming the initial hurdle of trying to "get themselves going." Finally, dysphoric individuals who are ruminating may base their decision of whether to participate in a fun, distracting activity (e.g., play a pick-up game of volleyball) on their immediate thoughts and feelings (e.g., passivity, lack of energy, and low self-esteem) rather than on their predictions about the consequences of such a decision (e.g., feeling refreshed and less depressed afterward).

Rumination, Distraction, and Perceived Insight Into One's Problems

Dysphorics may also continue to ruminate because they may perceive certain *benefits* of rumination. Specifically, our third

hypothesis was that depressed people made to ruminate would believe they were gaining insight into their feelings and their problems. As noted, self-focus and rumination appear to enhance dysphoric people's access to negative memories and their tendency to arrive at negative, pessimistic, and often distorted interpretations of events (Lyubomirsky & Nolen-Hoeksema, 1993; Pyszczynski et al., 1989). Perhaps these compelling memories and interpretations lead depressed ruminators to feel that they are "realizing what is wrong with their lives" and that they are "throwing away their rose-colored glasses." As a result of feeling that they are gaining insight into their problems, they may continue to ruminate. Unfortunately, this rumination only further enhances depressogenic thinking and poor problem solving, decreasing the chances that the dysphorics will actually surmount their problems as well as maintaining their depressed mood (Lyubomirsky & Nolen-Hoeksema, 1993).

Study 1

Overview

Dysphoric and nondysphoric subjects engaged in either a ruminative or distracting task, then reported their expectations for how much they would enjoy a number of pleasant distracting activities and rated how likely they would be to engage in each of these activities if they had the opportunity to do so. Our first hypothesis led to the prediction that, relative to everyone else, dysphoric subjects who ruminated would show both lower expectancies for the utility of the activities and lower estimates of likelihood to engage in these activities. In contrast, our second hypothesis predicted that dysphoric ruminators would show lower estimates of likelihood than the other three groups of subjects but would not necessarily differ from the others in their expectations of utility.

Method

Subjects

Seventy-three introductory psychology students at Stanford University (41 women and 32 men) received course credit for completing this study. Before participating, subjects completed the 13-item short form of the Beck Depression Inventory (BDI-SF; Beck & Beck, 1972) as part of a larger packet of unrelated questionnaires administered earlier in the quarter. On the basis of past recommendations (Beck & Beamesderfer, 1974), students with BDI-SF scores of 7 and above were recruited for the dysphoric group, and students with BDI-SF scores of 3 and below were recruited for the nondysphoric group. Because the BDI-SF has demonstrated high test-retest stability within 2 weeks among college undergraduates (Pearson's $r = .90$; Lightfoot & Oliver, 1985), 36 dysphoric (22 women and 14 men) and 37 nondysphoric (19 women and 18 men) subjects participated within less than 2 weeks after completing the BDI-SF. Mean BDI-SF scores were 9.72 ($SD = 2.56$ for dysphoric subjects and 0.97 ($SD = 1.04$ for nondysphoric subjects).

Materials

Mood questionnaires. Two packets of mood questionnaires were administered during the experiment. Subjects were asked to rate their present state, including levels of sadness and depression, on Likert scales (1 = *not at all*; 9 = *extremely*). Subjects completed the mood

questionnaires at the beginning of the experiment and immediately following the response task manipulation (i.e., induction of rumination or distraction). Ratings of sadness and depression were averaged to compute one measure of depressed mood at each of the two assessments. The mood questionnaires contained a number of filler scales (e.g., measuring levels of impatience, curiosity, creativity, recklessness, etc.) to help disguise the study's focus on mood. Likert scales, instead of the BDI-SF or the Multiple Affect Adjective Check List (MAACL), were used to assess mood during the experimental hour, because we felt that the BDI-SF's obvious focus on depressive symptoms and the MAACL's obvious focus on mood would be likely to alert subjects to the study's hypotheses. Likert scales have been used as mood measures in a number of studies (e.g., Pittman et al., 1990; Wenzlaff, Wegner, & Klein, 1991). As evidence for their validity, our Likert scales' measures of mood at the beginning of the experimental hour were highly correlated (Pearson's $r = .86$) with subjects' preexperimental BDI-SF scores.

Response manipulation tasks. The response manipulation tasks were designed to influence the content of subjects' thoughts by forcing them to focus their attention and "think about" a series of 45 items (adapted from Nolen-Hoeksema & Morrow, in press; Morrow & Nolen-Hoeksema, 1990). Following Nolen-Hoeksema's (1991) definition of *ruminative responses*, the rumination condition induced subjects to focus their attention on thoughts that were emotion focused, symptom focused, and self-focused, although subjects were not told specifically to think about negative feelings or negative personal attributes. For example, they were asked to think about "how active/passive you feel," "the physical sensations in your body," "what your feelings might mean," "the kind of person you are," and "why you react the way you do." In contrast, subjects in the distraction condition focused their attention on thoughts that were focused externally and not related to symptoms, emotions, or the self. For example, they were asked to think about "a boat slowly crossing the Atlantic," "the expression on the face of the Mona Lisa," and "the lay-out of the local post-office." All items had been previously rated as equally neutral by nondepressed judges. In each condition, subjects spent exactly 8 min focusing on the items.

Judgments of pleasant activities. Subjects were presented with a list of 24 activities, which had been previously rated by independent judges as pleasant and distracting, as well as activities that Stanford undergraduates would enjoy and would be likely to engage in. Examples were "going out to dinner with friends," "going to a party," "playing a favorite sport," and "renting a movie." Subjects were asked to imagine that they have an opportunity to engage in each of these activities and to imagine what it would be like if they engaged in them.

Our measure of subjects' expectancies of the utility of the activities was based on measures used by Kahneman and Snell (1989), who define *utility* as "the decisionmakers' anticipation of the hedonic quality of future experience (p. 295)." Specifically, for each of the 24 activities, we asked subjects "how much do you think you would enjoy this activity?" Subjects answered using a 7-point Likert scale (1 = *not at all*; 7 = *a great deal*). We chose to have subjects rate how much they would enjoy engaging in the activities rather than how much they thought the activities would lift their moods so that the question would make sense to both the dysphoric and the nondysphoric subjects. Then, we asked subjects "how likely do you think that you would engage in this activity if you had the opportunity?" Subjects answered using a 7-point Likert scale (1 = *not at all likely*; 7 = *extremely likely*).

The mean of subjects' ratings of the utility of the 24 activities was used as an overall measure of expected utility of pleasant activities. Similarly, the mean of their ratings of the likelihood that they would engage in the 24 activities was used as the overall measure of reported willingness to engage in pleasant activities.

Procedure

All subjects were run individually. At the beginning of the experiment, subjects were told they would be participating in a series of

short, independent studies investigating "processes of imagination, dreaming, levels of consciousness, and cognition in general." This cover story was supported by a number of neutral filler tasks, which were embedded among the questionnaire packets that subjects completed throughout the experiment. The cover story was designed to minimize possible demand characteristics. Subjects' responses on a debriefing questionnaire and their comments during oral debriefing indicated that it was successful. No subject guessed the purpose of the study or the link between the response manipulations and the activity judgment task. After the experimenter left the laboratory room, subjects completed the first packet of questionnaires, which contained the first set of measures of depressed mood. The experimenter was unaware of subjects' dysphoria status and manipulation condition.

After subjects completed the first packet of questionnaires, the experimenter reentered the room and introduced the response manipulation task. This task was described as an imagination task requiring subjects "to focus [their] mind on a series of ideas and thoughts" and to "use [their] ability to visualize and concentrate." Subjects were told to spend exactly 8 min on this task. As a manipulation check, subjects were asked in a debriefing questionnaire administered at the end of the study to recall the instructions for this task and to describe exactly what they did during the allotted 8 min. All subjects correctly recalled the instructions, stating that they were able to focus on the items as requested for the full 8 min. (One subject failed to complete this part of the questionnaire.) After the allotted time, the experimenter returned and administered to subjects the next packet of questionnaires, which contained the second set of mood measures as well as several filler tasks.

During the next phase, subjects made judgments of pleasant activities. To bolster the cover story, this procedure was introduced to subjects as a task involving their "activity imagination." Subjects were told that they would be presented with a list of activities and were asked to imagine, as vividly as they could, what it would be like if they engaged in each of these activities.

After completing their judgments of pleasant activities, subjects filled out a final packet of questionnaires, which included some filler measures and a debriefing questionnaire. The experimenter then returned and thoroughly debriefed each subject. The entire study lasted approximately 1 hr.

Results

Sex Differences

All analyses were initially performed with sex of subject as a between-subjects factor. Two significant main effects of sex were found. Women were more likely than men to report that they would enjoy pleasant activities, $t(64) = 3.96$, $p < .001$, and that they would be likely to participate in such activities, $t(59) = 5.99$, $p < .0001$. Mean ratings of utility were 5.93 ($SD = 0.49$) for women and 5.45 ($SD = 0.53$) for men. Mean ratings of likelihood were 5.79 ($SD = 0.58$) for women and 4.87 ($SD = 0.70$) for men. To assess whether these sex differences affected the results of analyses comparing the four groups of interest, all analyses were initially performed with sex of subject as a third factor. Because there were no interactions between sex and dysphoria status or response manipulation condition, all analyses reported were conducted by collapsing across sex of subject.

Mood Manipulation Check

At the beginning of the study, subjects in the dysphoric group were more depressed than subjects in the nondysphoric group.

Baseline levels of depressed mood were as follows: dysphoric-ruminative $M = 4.97$, $SD = 1.57$; dysphoric-distracting $M = 4.64$, $SD = 1.78$; nondysphoric-ruminative $M = 2.17$, $SD = 1.03$; and nondysphoric-distracting $M = 2.84$, $SD = 1.12$. Group differences in baseline mood were assessed by a 2 (dysphoria status) \times 2 (response manipulation) analysis of variance (ANOVA), with baseline depressed mood, measured by Likert scale ratings, as the dependent variable. As predicted, a main effect for dysphoria status indicated that dysphoric subjects had higher levels of depressed mood at the outset of the experiment ($M = 4.81$, $SD = 1.66$) than did nondysphoric subjects ($M = 2.50$, $SD = 1.11$), $F(1, 69) = 48.94$, $p < .0001$. There were no differences in baseline depressed mood between ruminative and distracting conditions, $F(1, 69) = 0.27$, *ns*, and the interaction between dysphoria status and response condition was not significant, $F(1, 69) = 2.35$, *ns*.

Previous studies using a similar paradigm (Lyubomirsky & Nolen-Hoeksema, 1993; Nolen-Hoeksema & Morrow, in press) found that dysphoric subjects who were instructed to ruminate became more dysphoric, and dysphoric subjects who were instructed to distract became less dysphoric, but nondysphoric subjects showed no changes in mood in either condition. To determine whether this pattern was replicated in the current study, we conducted a 2 (dysphoria status) \times 2 (response manipulation) analysis of covariance (ANCOVA), with depressed mood measured before the manipulation as the covariate and postmanipulation depressed mood as the dependent variable. The results of this analysis confirmed the prediction that the manipulation response tasks differentially influenced the depressed moods of dysphoric subjects. A marginally significant main effect for dysphoria status, $F(1, 68) = 3.59$, $p < .07$, and a significant main effect for manipulation condition, $F(1, 68) = 6.71$, $p < .02$, were qualified by a significant Dysphoria Status \times Manipulation Condition interaction, $F(1, 68) = 5.01$, $p < .03$.

Group differences in postmanipulation mood were also assessed by a 2 (dysphoria status) \times 2 (response manipulation) ANOVA, with postmanipulation depressed mood as the dependent variable. The results of this analysis paralleled those of the ANCOVA. A significant main effect for dysphoria status, $F(1, 69) = 35.88$, $p < .0001$, and a marginally significant main effect for manipulation condition, $F(1, 69) = 3.51$, $p < .07$, were qualified by a significant Dysphoria Status \times Manipulation Condition interaction, $F(1, 69) = 7.61$, $p < .01$. (To further assess the effects of manipulation response tasks on postmanipulation depressed mood, we conducted repeated measures ANOVAs, planned orthogonal contrasts, and Student's *t* tests on response change scores. All of these analyses yielded virtually the same results as the 2 (dysphoria status) \times 2 (manipulation) ANCOVA and ANOVA previously described. Mean (unadjusted) levels of depressed mood following the response task manipulation were as follows: dysphoric-ruminative $M = 5.44$, $SD = 1.14$; dysphoric-distracting $M = 3.69$, $SD = 2.33$; nondysphoric-ruminative $M = 2.14$, $SD = 1.15$; and nondysphoric-distracting $M = 2.47$, $SD = 1.55$.

Judgments of Pleasant Activities

In this study, we tested predictions about whether the dysphoric-ruminative group would differ from the other three groups (dysphoric-distracting, nondysphoric-ruminative, and

nondysphoric-distracting) in judgments of the utility and likelihood to participate in pleasant activities. However, because subjects in the dysphoric-distracting group were only induced to distract for 8 min, our hypotheses did not lead us to predict that their judgments would be necessarily identical to those of the subjects in the two nondysphoric groups but rather that they would lie somewhere in between those of the dysphoric-ruminative subjects and the nondysphoric subjects. Rosenthal (Rosenthal & Rosnow, 1985; see also Rosnow & Rosenthal, 1989) argued that the appropriate way to test such focused predictions is by planned contrasts rather than by two-way ANOVAs. Thus, analyses using planned contrasts comparing the dysphoric-ruminative group with the other three groups were performed on the two dependent measures of interest. In addition, separate planned pairwise comparisons between the dysphoric-ruminative group and each of the other three groups, as well as between the dysphoric-distracting group and each of the other three groups, were conducted.

Utility judgments. The results of a planned contrast showed that subjects in the dysphoric-ruminative group did not differ in their estimates of utility from the other three groups, $F(1, 69) = 0.11$, *ns*. (The results of planned pairwise comparisons described earlier also showed that there were no differences among the four groups.) Mean ratings of utility were as follows: dysphoric-ruminative $M = 5.68$, $SD = 0.60$; dysphoric-distracting $M = 5.76$, $SD = 0.36$; nondysphoric-ruminative $M = 5.72$, $SD = 0.57$; and nondysphoric-distracting $M = 5.72$, $SD = 0.68$.

Likelihood judgments. According to the results of a planned contrast comparing the dysphoric-ruminative group with the other three groups, dysphoric ruminators rated themselves as less likely to engage in pleasant activities than dysphoric distractors, nondysphoric ruminators, and nondysphoric distractors, $F(1, 69) = 4.00$, $p < .05$.

To decompose this effect further, we conducted pairwise comparisons between the dysphoric-ruminative group and each of the other three groups separately as well as pairwise comparisons between the dysphoric-distracting group and each of the other three groups separately. According to the results of a pairwise comparison, subjects in the dysphoric-ruminative group did not differ significantly in their judgments of likelihood to participate in pleasant activities from subjects in the dysphoric-distracting group, $F(1, 69) = 1.32$, *ns*. However, results of pairwise comparisons confirmed that dysphoric ruminators gave lower estimates of likelihood to engage in activities than nondysphoric ruminators, $F(1, 69) = 4.70$, $p < .03$, and gave lower estimates of likelihood than nondysphoric distractors, $F(1, 65) = 6.19$, $p < .02$. In contrast, the dysphoric-distracting group did not significantly differ in their estimates of likelihood from either the nondysphoric-ruminative group, $F(1, 69) = 0.02$, *ns*, or the nondysphoric-distracting group, $F(1, 65) = 1.35$, *ns*. Mean ratings of likelihood to participate in activities among the four groups were as follows: dysphoric-ruminative $M = 5.07$, $SD = 0.79$; dysphoric-distracting $M = 5.37$, $SD = 0.59$; nondysphoric-ruminative $M = 5.40$, $SD = 0.76$; and nondysphoric-distracting $M = 5.70$, $SD = 0.86$.

Discussion

Our findings disconfirmed our first hypothesis: Dysphoric subjects who ruminated showed similar expectancies for the

utility of pleasant activities as dysphoric subjects who first distracted or nondysphoric subjects. It appears that dysphoric mood, even when accompanied by rumination, does not lead people to distort their judgments of how much they would enjoy fun, distracting activities.

Our second hypothesis was confirmed, however. Relative to the other three groups of subjects, dysphoric ruminators rated pleasant activities as equally enjoyable but reported themselves as less willing to participate in such activities. Thus, although dysphoric people who are ruminating know that they will enjoy engaging in distracting activities, they still report that they are not likely to choose to engage in such activities.

How would dysphoric individuals not made to either ruminate or distract differ from nondysphoric individuals in their reported willingness to participate in pleasant activities? The difference between the dysphorics in the rumination condition and subjects in the other three conditions in Study 1 could have been due simply to the fact that dysphorics in the rumination condition were more depressed than the other subjects following their response manipulations and not to the combined effects of self-focused rumination and depressed mood. This would not be a problem for the response styles theory, because Nolen-Hoeksema (1991) argued that self-focused rumination affects cognition in part by maintaining depressed mood and therefore allowing depressed mood to influence thinking. Still, we conducted Study 2 to collect baseline data and to determine whether the results of Study 1 could be attributed solely to the greater depressed mood of the depressed subjects in the rumination condition. In Study 2 we explored whether depressed mood alone, in the absence of rumination, would affect subjects' judgments of their likelihood of participating in pleasant activities.

Study 2

Method

One-hundred thirty Stanford University introductory psychology students (69 women and 61 men) received course credit for their participation in this study. Subjects were administered a large packet of questionnaires, which included the BDI-SF (Beck & Beck, 1972). As in Study 1, subjects with BDI-SF scores of 7 and above were classified as dysphoric, and subjects with BDI-SF scores of 3 and below were classified as nondysphoric. Twenty-eight subjects were dysphoric ($M = 11.11$, $SD = 5.04$), and 102 subjects were nondysphoric ($M = 1.26$, $SD = 1.14$). In the same packet, subjects were administered the judgments of pleasant activities task used in Study 1. After they had finished this task, along with the rest of the questionnaires, the experimenter collected the materials and administered a written debriefing.

Results and Discussion

Because there were no main effects or interactions with sex, all analyses were conducted by collapsing across sex of subject. There were no significant differences between dysphoric and nondysphoric subjects in either their expectancies for the utility of pleasant activities, $t(38) = .45$, *ns*, or their willingness to engage in such activities, $t(38) = .78$, *ns*. Mean estimates of the utility of pleasant activities were 5.76 ($SD = 0.58$) for the nondysphoric subjects and 5.70 ($SD = 0.68$) for the dysphoric sub-

jects. Mean judgments of likelihood were 5.31 ($SD = 0.81$) for the nondysphoric group and 5.15 ($SD = 1.11$) for the dysphoric group.

Thus, dysphoric subjects who were not forced to ruminate reported very similar expectations of utility and reported themselves as equally willing to participate in enjoyable activities as did nondysphoric subjects.

The combined results from Study 1 and Study 2 suggest that what reduces many dysphorics' willingness to distract themselves with pleasant activities is not their depressed mood by itself, but their ruminative focusing on that depressed mood. Rumination maintains one's focus on one's depressive symptoms, such as lowered energy, lack of interest, and apathy; these symptoms may convince dysphoric people that they lack the efficacy or wherewithal to participate in pleasant activities, even when they know they would enjoy these activities and that these activities would make them feel better.

As noted in the introduction, another reason dysphoric people may continue to ruminate is because they feel they are gaining insight into their problems. In Studies 3 and 4, we investigated the hypothesis that dysphorics made to ruminate will feel they have more insight into themselves and other people than dysphoric people made to distract. Study 3 determined whether there were baseline differences, before a rumination or distraction induction, between dysphorics and nondysphorics in perceptions of their own insightfulness. Because insightfulness is a positive characteristic, we expected that dysphorics' generally negative self-concepts would lead them to rate themselves as less insightful than nondysphorics would rate themselves. In Study 4, we tested the prediction that making dysphorics ruminate would lead them to feel more insightful than making dysphorics distract.

Study 3

Method

Subjects and Procedure

Ninety-two Stanford University students enrolled in a large psychology class participated in this study. Sixty-three women and 29 men completed the BDI-SF. As classified by the same procedure used in the previous two studies, 28 students were dysphoric ($M = 10.21$, $SD = 2.71$) and 64 were nondysphoric ($M = 1.36$, $SD = 1.14$). Subjects also completed a measure of perceived insight. They were told that we were interested in people's "conceptions of themselves" and were instructed to read a series of statements concerning "beliefs people may have about themselves and others" and to rate how much they agreed with these statements.

Perceived-Insight Questionnaire

Subjects were asked to assess their level of agreement (1 = *strongly disagree*; 10 = *strongly agree*) to 12 statements designed to assess how much insight they felt they had into themselves and other people. Examples were "I am an insightful person," "I have good insight into how my mind works," "I have a good sense of why things happen to me," "I have a deep understanding of people," "I understand myself," and "I have an accurate view of myself." The mean of subjects' responses to these 12 statements was used as an overall measure of perceived insight

or insightfulness. Internal reliability of the perceived-insight questionnaire was good (Cronbach's $\alpha = .79$).

Results and Discussion

Because there were no main effects or interactions with sex, all analyses were conducted by collapsing across sex of subject. As expected, dysphoric subjects rated themselves as generally less insightful than did nondysphoric subjects. Mean perceived-insight ratings were 7.07 ($SD = 0.83$) for the nondysphoric group and 6.51 ($SD = 1.24$) for the dysphoric group. These means were significantly different from each other, $t(37) = 2.22, p < .04$.

These findings are consistent with those of a large literature comparing the cognitions and beliefs of dysphoric and nondysphoric people. It has been well documented that dysphoric people view themselves more negatively than do nondysphoric people (cf. Beck, 1967; Haaga, Dyck, & Ernst, 1991; Sacco & Beck, 1985). Because insightfulness is considered a positive attribute, the statements in our perceived-insight questionnaire reflected generally positive descriptions of the self, such as "I am an insightful person" and "I have an accurate view of myself." Therefore, dysphorics would be expected to judge themselves as less insightful than nondysphorics.

Might dysphoric people who ruminatively focus on themselves and their emotions feel they are gaining more insight into themselves and their emotions than they would if they distracted themselves from their emotions? Using the same paradigm as that used in Study 1, in Study 4 we had dysphoric and nondysphoric subjects either ruminate or distract before measuring their levels of perceived insight. Our prediction was that dysphorics made to ruminate would feel that they have more insight into themselves and other people than dysphorics made to distract. We had no a priori predictions about nondysphorics' ratings of their insightfulness after the rumination and distraction manipulations. Nondysphorics might be expected to rate themselves as more insightful than dysphorics, regardless of whether they have been made to ruminate or distract, because insightfulness is a positive characteristic. Alternatively, the rumination condition, which involves focusing on one's personality and how one's life is going, may enhance nondysphorics' perceptions of their insightfulness as well as dysphorics' perceptions. Thus, after testing our primary prediction about the effects of rumination and distraction on dysphorics' perceived insight, we conducted exploratory analyses to investigate differences between the dysphorics' and nondysphorics' perceived insight following the rumination and distraction tasks.

Study 4

Method

Fifty-six introductory psychology students at Stanford University (32 women and 24 men) received course credit for participating in this study. Potential subjects completed the BDI-SF at the beginning of the quarter. On the basis of the classification procedure of the previous studies, 20 students were dysphoric ($M = 10.40, SD = 2.84$) and 36 students were nondysphoric ($M = 0.97, SD = 1.05$). Subjects participated within 2 weeks after filling out the BDI-SF. The procedure was identical to that used in Study 1, except that instead of completing the

judgments of pleasant activities task, subjects completed the perceived-insight questionnaire used in Study 3.

Results and Discussion

Because there were no main effects or interactions with sex, all analyses were conducted by collapsing across sex of subject.

Mood Manipulation Check

At the beginning of the study, dysphoric subjects were more depressed than nondysphoric subjects. The results of a 2 (dysphoria status) \times 2 (response manipulation) ANOVA, with baseline depressed mood as the dependent variable, showed that the only significant effect was a main effect for dysphoria status, indicating that dysphoric subjects had higher levels of depressed mood at the outset of the experiment ($M = 4.95, SD = 1.68$) than nondysphoric subjects ($M = 2.48, SD = 1.07$), $F(1, 52) = 45.00, p < .0001$.

As in Study 1, to test whether rumination and distraction had the predicted effects on the moods of dysphoric and nondysphoric subjects, we conducted a 2 (dysphoria status) \times 2 (response manipulation) ANCOVA, with baseline depressed mood as the covariate and depressed mood measured after the manipulation as the dependent variable. The results of this analysis confirmed the prediction that the manipulation response tasks differentially influenced the depressed moods of dysphoric subjects. A marginally significant main effect for dysphoria status, $F(1, 51) = 3.52, p < .07$, and a significant main effect for manipulation condition, $F(1, 51) = 7.22, p < .01$, were qualified by a significant Dysphoria Status \times Manipulation Condition interaction, $F(1, 51) = 5.68, p < .03$. The results of a 2 (dysphoria status) \times 2 (response manipulation) ANOVA, with postmanipulation depressed mood as the dependent variable, paralleled those of the ANCOVA. A significant main effect for dysphoria status, $F(1, 52) = 37.08, p < .0001$, and a marginally significant main effect for manipulation condition, $F(1, 52) = 3.09, p < .08$, were qualified by a significant Dysphoria Status \times Manipulation Condition interaction, $F(1, 52) = 7.33, p < .01$. Mean (unadjusted) levels of depressed mood following the response task manipulation were as follows: dysphoric-ruminative $M = 5.90, SD = 1.15$; dysphoric-distracting $M = 3.95, SD = 2.50$; nondysphoric-ruminative $M = 2.06, SD = 1.13$; and nondysphoric-distracting $M = 2.47, SD = 1.55$.

Perceived Insight

As expected, the results of a planned contrast comparing only the two dysphoric groups showed that dysphoric subjects who ruminated reported having greater insight than dysphoric subjects who distracted, $F(1, 52) = 5.85, p < .02$.

Because we had no a priori predictions about the relative effects of the response manipulation on the nondysphorics' versus the dysphorics' judgments of insightfulness, we conducted an exploratory 2 (dysphoria status) \times 2 (response manipulation) ANOVA, with mean perceived-insight rating as the dependent variable. The results of this analysis showed significant main effects for both dysphoria status and manipulation condition. Overall, nondysphoric subjects rated themselves as signifi-

cantly more insightful than did dysphoric subjects, $F(1, 52) = 12.46, p < .001$, and both dysphoric and nondysphoric subjects who had undergone the rumination condition rated themselves as having significantly more insight than did subjects in the distraction condition, $F(1, 52) = 6.32, p < .02$. The interaction between dysphoria status and manipulation condition was not statistically significant, $F(1, 52) = 1.86, ns$. Mean ratings of perceived insight were as follows: dysphoric-ruminative $M = 6.40, SD = 1.12$; dysphoric-distracting $M = 5.30, SD = 0.79$; nondysphoric-ruminative $M = 7.01, SD = 1.96$; and nondysphoric-distracting $M = 6.68, SD = 1.10$.

Overall, nondysphorics rated themselves as more insightful than dysphorics rated themselves. However, the rumination manipulation led both dysphorics and nondysphorics to feel they have more insight into themselves and other people than distraction did. We note that, despite dysphoric individuals' generally negative self-concepts, rumination made them feel more insightful, even though it also made them feel more depressed, than did distraction. Thus, the rumination condition appeared to make dysphorics feel "sadder but wiser" than did the distraction condition.

General Discussion

The findings reported here suggest at least two mechanisms by which a ruminative response to depressed mood may be self-perpetuating. First, self-focused rumination may reduce dysphoric individual's willingness to engage in pleasant, distracting activities that could relieve their depressed mood, even when they believe they would enjoy these activities. Second, dysphoric people who are ruminating may feel they are gaining important insight into their problems and feelings, which encourages them to continue to ruminate rather than to engage in pleasant activities to lift their moods.

Rumination and Willingness to Engage in Activities

Dysphoric people, whether they were ruminating or not, expected the pleasant activities we presented to them to be as enjoyable as did the nondysphoric people. This suggests that neither depressed mood alone nor depressed mood in combination with rumination leads dysphorics to downgrade the expected utility of pleasant activities and thus their outcome expectations that such activities could lift their moods. These results parallel the findings of a study by Burns and Nolen-Hoeksema (1991) that depressed subjects do not differ from nondepressed subjects in their perceptions of the possible effectiveness of a number of self-help techniques, including participation in pleasant activities and the use of distraction. In addition, Wenzlaff, Wegner, and Roper (1988) found that dysphoric subjects were just as likely as nondysphoric subjects to know that distraction is a good technique for avoiding troubling negative thoughts.

However, although they expected the pleasant activities to be enjoyable, the dysphoric subjects in the rumination condition in the present studies rated themselves as less likely to engage in these activities than the nondysphoric subjects, whereas the dysphoric subjects in the distraction condition rated themselves as just as likely as the nondysphoric subjects to engage in

the activities. Our results suggest that dysphoric ruminators may not be willing to distract themselves because they lack the efficacy for doing so, saying to themselves in a sense "I know I'd feel better if I stopped worrying and did something active, but I just can't." Thus, our findings support the prediction suggested by Bandura's (1986) social-cognitive theory rather than that suggested by an expectancy-value theory of motivation.

There are three primary mechanisms by which self-focused rumination in the presence of a dysphoric mood may lead individuals to lower their expectations about being able to engage in pleasant, distracting activities. First, because they are concentrating on how lethargic, unmotivated, and apathetic they feel, dysphoric ruminators may judge that they do not have the strength, capacity, or resources to engage in fun and distracting activities. For example, they may decide that they feel too tired and listless to go out. Second, although dysphorics acknowledge that certain activities will be enjoyable, they may also realize that it usually takes some time to "get into" an enjoyable activity when one is depressed. Thus, focusing on symptoms such as fatigue and lack of interest and energy may inhibit dysphorics from taking the first steps in becoming involved in such activities. For example, it may initially take some effort for a dysphoric individual to get himself or herself out of the house and go out to a movie with friends. Rumination, by focusing one's attention on one's lack of energy and interest, may make that initial hurdle seem overwhelming.

Other studies also suggest that the component of rumination that involves focusing on one's symptoms is critical to the perpetuation of depression (Nolen-Hoeksema, 1991). Nolen-Hoeksema and Morrow (1992) found that making dysphoric subjects focus on their symptoms of depression and dysphoria had a more negative effect on their mood than making them focus on their personality characteristics and goals. That is, dysphoric subjects who thought about their current levels of energy and motivation were more likely to remain depressed than dysphoric subjects who thought about what kind of person they are and how their life is going (see also Frost, Graf, & Becker, 1979; Rholes, Riskind, & Lane, 1987; Riskind, Rholes, & Eggers, 1982).

Finally, when choosing among alternative activities, dysphoric individuals who ruminatively focus on their dysphoric state may not use the same decision strategies that nondysphoric individuals use. Instead of computing the costs and benefits of the consequences of a particular decision, thinking through those consequences, and projecting into the short-term and long-term future, their choices may be more governed by their immediate feelings and goals. Thus, when faced with an opportunity to engage in a pleasant activity, dysphoric ruminators may base their decision not on their knowledge of the consequences of such a decision (i.e., that they are likely to enjoy themselves) but on their immediate thoughts and feelings (e.g., "I don't feel up to it right now") as well as on the symptoms that presently compel them (i.e., fatigue, apathy, passivity, and lack of energy). Their use of such nonoptimal decision strategies may be one reason dysphoric ruminators offer lower quality solutions to hypothetical problems (Lyubomirsky & Nolen-Hoeksema, 1993) and offer fewer solutions to their own life problems (Morrow, 1990) than do dysphoric people who distract or than do nondysphoric people.

Rumination and Perceived Insight

The results of Studies 3 and 4 suggest that another reason dysphoric individuals may continue to ruminate rather than to use pleasant distraction to lift their moods is that self-focused rumination may lead dysphorics to believe they are gaining insight into themselves and their negative feelings and symptoms. They may feel that distracting activities would block their efforts to understand themselves better, and, consequently, they avoid such activities. Ironically, although rumination may enhance a sense of insightfulness, relative to distraction, there is evidence that it also helps to maintain a depressed mood.

Paradoxically, however, rumination may not only ultimately lead to longer periods of depressed mood, but also it may actually frustrate dysphoric people's efforts to overcome the problems that may be contributing to their depressed mood. As noted, laboratory studies have shown that dysphorics who are made to respond to their mood by ruminating are actually less effective problem solvers than dysphorics who distract themselves (Lyubomirsky & Nolen-Hoeksema, 1993; Morrow, 1990; see also Wilson & Schooler, 1991). Thus, although dysphorics who ruminate may feel they are gaining an understanding of their problems, rumination may instead be leading them to make poorer decisions about the appropriate solutions to their problems.

Limitations and Further Questions

The primary limitation of the studies reported here is that the subjects were dysphoric rather than moderately or clinically depressed. In particular, it is possible that, in Study 2, we may have found differences between dysphorics' and nondysphorics' estimates of the value of engaging in pleasant activities had we used clinically depressed individuals. However, previous studies have shown that self-focusing and distraction manipulations have similar effects on clinically depressed patients' moods as the rumination and distraction manipulations in our studies had on dysphoric subjects' moods (e.g., Fennell & Teasdale, 1984; Gibbons et al., 1985). Still, generalization of our results concerning the effects of rumination and distraction on people's judgments awaits replication in studies using clinically depressed people.

It may be argued that the dysphoric subjects who were made to ruminate in Study 1 construed the activities that they were asked to judge differently from the way that dysphoric subjects who were made to distract or nondysphoric subjects did. Perhaps the effects of rumination on their mood and their thinking led dysphoric individuals to imagine embellished scenarios for activities such as "going out to dinner with friends" (e.g., imagining themselves sitting lonely and ignored at a large dinner table), thus creating tremendous and pessimistic expectations for themselves. Our results, however, do not support this interpretation. First, this reasoning implies that dysphoric ruminators would rate themselves as less likely to enjoy such activities than the other three groups, yet our findings show no differences in "enjoy" judgments among the four groups. Second, exploratory analyses not reported here showed that there was no interaction between the types of pleasant activities presented and dysphoria status or response manipulation condi-

tion. That is, contrary to predictions suggested by this argument, neither dysphoric subjects who ruminated nor the other three groups judged activities that were unlikely to be misconstrued or embellished (e.g., exercising) differently from those activities open to multiple construals (e.g., going to a party).

Although we measured subjects' self-reported judgments for the likelihood that they would participate in distracting activities, we did not give them an opportunity to engage in such activities and observe whether they would actually do so. Lacking such behavioral measures, we must be cautious about drawing conclusions that assume a high correlation between self-reported intentions and behavior. However, we are encouraged by the findings of Burns and Nolen-Hoeksema (1991), which showed that clinically depressed people who said they were more willing to engage in active mood-management techniques were more likely to comply with behavioral self-help assignments during cognitive-behavioral therapy and exhibited more relief from depression 12 weeks later.

The perceived-insight questionnaire used in Studies 3 and 4 did not measure subjects' actual levels of insight but, rather, their perceptions of their insightfulness. This was important because our hypotheses were concerned with how the belief or perception that one possesses insight (and not actual insight, *per se*) may lead some dysphorics to continue ruminating. In fact, given that dysphoric people who ruminate appear to be less successful at interpersonal problem solving than dysphoric people who distract or nondysphoric people (Lyubomirsky & Nolen-Hoeksema, 1993; Morrow, 1990), we speculate that rumination may lead to enhanced feelings of insightfulness but to less actual insight. Further research is needed to investigate this question.

The response styles theory was initially introduced to help explain the higher rate of depression in women compared with men. Nolen-Hoeksema (1987) argued that women are more prone to engage in ruminative responses to their periods of dysphoria than are men and that this contributes to the gender difference in depression (for supporting evidence, see Butler & Nolen-Hoeksema, *in press*; Nolen-Hoeksema et al., 1993). The results of the present studies do not inform us about gender differences in response styles, because we induced rumination and distraction rather than measuring subjects' natural tendencies to engage in these responses. However, the results do suggest some mechanisms that might keep women ruminating once they begin to do so. Specifically, women may continue to ruminate because they want to gain insight into the problems they face. Yet, the types of problems that dysphoric women often face (e.g., psychological or physical abuse from a partner or a nagging sense of not being respected) may not lend themselves to quick insight or sure-fire solutions. In addition, dysphoric women, because they are more prone to ruminate than dysphoric men, may be less willing than dysphoric men to engage in pleasant activities, even when they believe such activities could be enjoyable. Thus, interventions with dysphoric women may need to focus more on their willingness to engage in mood-management techniques than interventions with dysphoric men.

Conclusions

An important implication of our findings is that, in treating depression, it is extremely valuable for patients to be willing to

use mood-management strategies, in addition to simply believing that it would be a good idea to do so. Our findings also provide support for the claim made within cognitive-behavioral approaches that, in therapy with depressed patients, behavioral techniques are often necessary to supplement cognitive methods. The technique of encouraging dysphorics to engage in activities may help to counter ruminative responses, passivity, and loss of motivation and interest and may reduce depressogenic thinking.

Finally, although ruminating about themselves and their problems may make dysphorics feel they understand themselves better, it does not appear to have positive or productive consequences. On the contrary, dysphoric persons who ruminate may be less effective at solving the very problems into which they feel they have more insight. In addition, self-focused rumination prolongs depressed mood and makes it less likely that one will engage in distracting activities, thus impeding further opportunities for depression relief.

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