

circuitry that can inhibit the limbic driving of worry; at the same time, actively inducing a relaxed state counters the signals for anxiety the emotional brain is sending throughout the body.

Indeed, Borkovec points out, these strategies establish a train of mental activity that is incompatible with worry. When a worry is allowed to repeat over and over unchallenged, it gains in persuasive power; challenging it by contemplating a range of equally plausible points of view keeps the one worried thought from being naively taken as true. Even some people whose worrying is serious enough to qualify for a psychiatric diagnosis have been relieved of the worrying habit this way.

On the other hand, for people with worries so severe they have flowered into phobia, obsessive-compulsive disorder, or panic disorder, it may be prudent—indeed, a sign of self-awareness—to turn to medication to interrupt the cycle. A retraining of the emotional circuitry through therapy is still called for, however, in order to lessen the likelihood that anxiety disorders will recur when medication is stopped.<sup>13</sup>

## MANAGING MELANCHOLY

The single mood people generally put most effort into shaking is sadness; Diane Tice found that people are most inventive when it comes to trying to escape the blues. Of course, not all sadness should be escaped; melancholy, like every other mood, has its benefits. The sadness that a loss brings has certain invariable effects: it closes down our interest in diversions and pleasures, fixes attention on what has been lost, and saps our energy for starting new endeavors—at least for the time being. In short, it enforces a kind of reflective retreat from life's busy pursuits, and leaves us in a suspended state to mourn the loss, mull over its meaning, and, finally, make the psychological adjustments and new plans that will allow our lives to continue.

Bereavement is useful; full-blown depression is not. William Styron renders an eloquent description of “the many dreadful manifestations of the disease,” among them self-hatred, a sense of worthlessness, a “dank joylessness” with “gloom crowding in on me, a sense of dread and alienation and, above all, a stifling anxiety.”<sup>14</sup> Then there are the intellectual marks: “confusion, failure of mental focus and lapse of memories,” and, at a later stage, his mind “dominated by anarchic

distortions,” and “a sense that my thought processes were engulfed by a toxic and unnameable tide that obliterated any enjoyable response to the living world.” There are the physical effects: sleeplessness, feeling as listless as a zombie, “a kind of numbness, an enervation, but more particularly an odd fragility,” along with a “fidgety restlessness.” Then there is the loss of pleasure: “Food, like everything else within the scope of sensation, was utterly without savor.” Finally, there was the vanishing of hope as the “gray drizzle of horror” took on a despair so palpable it was like physical pain, a pain so unendurable that suicide seemed a solution.

In such major depression, life is paralyzed; no new beginnings emerge. The very symptoms of depression bespeak a life on hold. For Styron, no medication or therapy helped; it was the passing of time and the refuge of a hospital that finally cleared away the despondency. But for most people, especially those with less severe cases, psychotherapy can help, as can medication—Prozac is the treatment of the hour, but there are more than a dozen other compounds offering some help, especially for major depression.

My focus here is the far more common sadness that at its upper limits becomes, technically speaking, a “subclinical depression”—that is, ordinary melancholy. This is a range of despondency that people can handle on their own, if they have the internal resources. Unfortunately, some of the strategies most often resorted to can backfire, leaving people feeling worse than before. One such strategy is simply staying alone, which is often appealing when people are feeling down; more often than not, however, it only adds a sense of loneliness and isolation to the sadness. That may partly explain why Tice found the most popular tactic for battling depression is socializing—going out to eat, to a ballgame or movie; in short, doing something with friends or family. That works well if the net effect is to get the person’s mind off his sadness. But it simply prolongs the mood if he uses the occasion just to mull over what put him in the funk.

Indeed, one of the main determinants of whether a depressed mood will persist or lift is the degree to which people ruminate. Worrying about what’s depressing us, it seems, makes the depression all the more intense and prolonged. In depression, worry takes several forms, all focusing on some aspect of the depression itself—how tired we feel, how little energy or motivation we have, for instance, or how little work we’re getting done. Typically none of this reflection is

accompanied by any concrete course of action that might alleviate the problem. Other common worries include “isolating yourself and thinking about how terrible you feel, worrying that your spouse might reject you because you are depressed, and wondering whether you are going to have another sleepless night,” says Stanford psychologist Susan Nolen-Hoeksma, who has studied rumination in depressed people.<sup>15</sup>

Depressed people sometimes justify this kind of rumination by saying they are trying to “understand themselves better”; in fact, they are priming the feelings of sadness without taking any steps that might actually lift their mood. Thus in therapy it might be perfectly helpful to reflect deeply on the causes of a depression, if that leads to insights or actions that will change the conditions that cause it. But a passive immersion in the sadness simply makes it worse.

Rumination can also make the depression stronger by creating conditions that are, well, more depressing. Nolen-Hoeksma gives the example of a saleswoman who gets depressed and spends so many hours worrying about it that she doesn’t get around to important sales calls. Her sales then decline, making her feel like a failure, which feeds her depression. But if she reacted to depression by trying to distract herself, she might well plunge into the sales calls as a way to get her mind off the sadness. Sales would be less likely to decline, and the very experience of making a sale might bolster her self-confidence, lessening the depression somewhat.

Women, Nolen-Hoeksma finds, are far more prone to ruminate when they are depressed than are men. This, she proposes, may at least partly explain the fact that women are diagnosed with depression twice as often as are men. Of course, other factors may come into play, such as women being more open to disclosing their distress or having more in their lives to be depressed about. And men may drown their depression in alcoholism, for which their rate is about twice that of women.

Cognitive therapy aimed at changing these thought patterns has been found in some studies to be on a par with medication for treating mild clinical depression, and superior to medication in preventing the return of mild depression. Two strategies are particularly effective in the battle.<sup>16</sup> One is to learn to challenge the thoughts at the center of rumination—to question their validity and think of more positive alternatives. The other is to purposely schedule pleasant, distracting events.

One reason distraction works is that depressing thoughts are automatic, intruding on one's state of mind unbidden. Even when depressed people try to suppress their depressing thoughts, they often cannot come up with better alternatives; once the depressive tide of thought has started, it has a powerful magnetic effect on the train of association. For example, when depressed people were asked to unscramble jumbled six-word sentences, they were much better at figuring out the depressing messages ("The future looks very dismal") than the upbeat ones ("The future looks very bright").<sup>17</sup>

The tendency for depression to perpetuate itself shades even the kinds of distractions people choose. When depressed people were given a list of upbeat or ponderous ways to get their minds off something sad, such as the funeral of a friend, they picked more of the melancholy activities. Richard Wenzlaff, the University of Texas psychologist who did these studies, concludes that people who are already depressed need to make a special effort to get their attention on something that is completely upbeat, being careful not to inadvertently choose something—a tearjerker movie, a tragic novel—that will drag their mood down again.

## Mood-lifters

Imagine that you're driving on an unfamiliar, steep, and winding road through fog. Suddenly a car pulls out of a driveway only a few feet in front of you, too close for you to stop in time. Your foot slams the brake to the floor and you go into a skid, your car sliding into the side of the other one. You see that the car is full of youngsters, a carpool on the way to preschool—just before the explosion of glass shattering and metal bending into metal. Then, out of the sudden silence after the collision, you hear a chorus of crying. You manage to run to the other car, and see that one of the children is lying motionless. You are flooded with remorse and sadness over this tragedy....

Such heart-wrenching scenarios were used to get volunteers upset in one of Wenzlaff's experiments. The volunteers then tried to keep the scene out of their minds while they jotted notes about the stream of their thoughts for nine minutes. Each time the thought of the disturbing scene intruded into their minds, they made a check mark as they wrote. While most people thought about the upsetting scene less and less as time went on, those volunteers who were more depressed actually showed a pronounced *increase* in intruding thoughts of the

scene as time passed, and even made oblique references to it in the thoughts that were supposed to be distractions from it.

What's more, the depression-prone volunteers used other distressing thoughts to distract themselves. As Wenzlaff told me, "Thoughts are associated in the mind not just by content, but by mood. People have what amounts to a set of bad-mood thoughts that come to mind more readily when they are feeling down. People who get depressed easily tend to create very strong networks of association between these thoughts, so that it is harder to suppress them once some kind of bad mood is evoked. Ironically, depressed people seem to use one depressing topic to get their minds off another, which only stirs more negative emotions."

Crying, one theory holds, may be nature's way of lowering levels of the brain chemicals that prime distress. While crying can sometimes break a spell of sadness, it can also leave the person still obsessing about the reasons for despair. The idea of a "good cry" is misleading: crying that reinforces rumination only prolongs the misery. Distractions break the chain of sadness-maintaining thinking; one of the leading theories of why electroconvulsive therapy is effective for the most severe depressions is that it causes a loss of short-term memory—patients feel better because they can't remember why they were so sad. At any rate, to shake garden-variety sadness, Diane Tice found, many people reported turning to distractions such as reading, TV and movies, video games and puzzles, sleeping, and daydreams such as planning a fantasy vacation. Wenzlaff would add that the most effective distractions are ones that will shift your mood—an exciting sporting event, a funny movie, an uplifting book. (A note of caution here: Some distractors in themselves can perpetuate depression. Studies of heavy TV watchers have found that, after watching TV, they are generally more depressed than before they started!)

Aerobic exercise, Tice found, is one of the more effective tactics for lifting mild depression, as well as other bad moods. But the caveat here is that the mood-lifting benefits of exercise work best for the lazy, those who usually do not work out very much. For those with a daily exercise routine, whatever mood-changing benefits it offers were probably strongest when they first took up the exercise habit. In fact, for habitual exercisers there is a reverse effect on mood: they start to feel bad on those days when they skip their workout. Exercise seems to work well because it changes the physiological state the mood evokes: depression is a low-arousal state, and aerobics pitches the

body into high arousal. By the same token, relaxation techniques, which put the body into a low-arousal state, work well for anxiety, a high-arousal state, but not so well for depression. Each of these approaches seems to work to break the cycle of depression or anxiety because it pitches the brain into a level of activity incompatible with the emotional state that has had it in its grip.

Cheering oneself up through treats and sensual pleasures was another fairly popular antidote to the blues. Common ways people soothed themselves when depressed ranged from taking hot baths or eating favorite foods, to listening to music or having sex. Buying oneself a gift or treat to get out of a bad mood was particularly popular among women, as was shopping in general, even if only window-shopping. Among those in college, Tice found that eating was three times as common a strategy for soothing sadness among women than men; men, on the other hand, were five times as likely to turn to drinking or drugs when they felt down. The trouble with overeating or alcohol as antidotes, of course, is that they can easily backfire: eating to excess brings regret; alcohol is a central nervous system depressant, and so only adds to the effects of depression itself.

A more constructive approach to mood-lifting, Tice reports, is engineering a small triumph or easy success: tackling some long-delayed chore around the house or getting to some other duty they've been wanting to clear up. By the same token, lifts to self-image also were cheering, even if only in the form of getting dressed up or putting on makeup.

One of the most potent—and, outside therapy, little used—antidotes to depression is seeing things differently, or *cognitive reframing*. It is natural to bemoan the end of a relationship and to wallow in self-pitying thoughts such as the conviction that “this means I’ll always be alone,” but it’s sure to thicken the sense of despair. However, stepping back and thinking about the ways the relationship wasn’t so great, and ways you and your partner were mismatched—in other words, seeing the loss differently, in a more positive light—is an antidote to the sadness. By the same token, cancer patients, no matter how serious their condition, were in better moods if they were able to bring to mind another patient who was in even worse shape (“I’m not so bad off—at least I can walk”); those who compared themselves to healthy people were the most depressed.<sup>18</sup> Such downward comparisons are surprisingly cheering: suddenly what had seemed quite dispiriting doesn’t look all that bad.

Another effective depression-lifter is helping others in need. Since depression feeds on ruminations and preoccupations with the self, helping others lifts us out of those preoccupations as we empathize with people in pain of their own. Throwing oneself into volunteer work—coaching Little League, being a Big Brother, feeding the homeless—was one of the most powerful mood-changers in Tice’s study. But it was also one of the rarest.

Finally, at least some people are able to find relief from their melancholy in turning to a transcendent power. Tice told me, “Praying, if you’re very religious, works for all moods, especially depression.”

### REPRESSORS: UPBEAT DENIAL

“He kicked his roommate in the stomach ...” the sentence begins. It ends, “... but he meant to turn on the light.”

That transformation of an act of aggression into an innocent, if slightly implausible, mistake is repression captured *in vivo*. It was composed by a college student who had volunteered for a study of *repressors*, people who habitually and automatically seem to blot emotional disturbance from their awareness. The beginning fragment “He kicked his roommate in the stomach ...” was given to this student as part of a sentence-completion test. Other tests showed that this small act of mental avoidance was part of a larger pattern in his life, a pattern of tuning out most emotional upset.<sup>19</sup> While at first researchers saw repressors as a prime example of the inability to feel emotion—cousins of alexithymics, perhaps—current thinking sees them as quite proficient in regulating emotion. They have become so adept at buffering themselves against negative feelings, it seems, that they are not even aware of the negativity. Rather than calling them repressors, as has been the custom among researchers, a more apt term might be *unflappables*.

Much of this research, done principally by Daniel Weinberger, a psychologist now at Case Western Reserve University, shows that while such people may seem calm and imperturbable, they can sometimes seethe with physiological upsets they are oblivious to. During the sentence-completion test, volunteers were also being monitored for their level of physiological arousal. The repressors’ veneer of calm was belied by the agitation of their bodies: when faced



with the sentence about the violent roommate and others like it, they gave all the signs of anxiety, such as a racing heart, sweating, and climbing blood pressure. Yet when asked, they said they felt perfectly calm.

This continual tuning-out of emotions such as anger and anxiety is not uncommon: about one person in six shows the pattern, according to Weinberger. In theory, children might learn to become unflappable in any of several ways. One might be as a strategy for surviving a troubling situation such as having an alcoholic parent in a family where the problem itself is denied. Another might be having a parent or parents who are themselves repressors and so pass on the example of perennial cheerfulness or a stiff upper lip in the face of disturbing feelings. Or the trait may simply be inherited temperament. While no one can say as yet just how such a pattern begins in life, by the time repressors reach adulthood they are cool and collected under duress.

The question remains, of course, as to just how calm and cool they actually are. Can they really be unaware of the physical signs of distressing emotions, or are they simply feigning calm? The answer to that has come from clever research by Richard Davidson, a University of Wisconsin psychologist and an early collaborator with Weinberger. Davidson had people with the unflappable pattern free-associate to a list of words, most neutral, but several with hostile or sexual meanings that stir anxiety in almost everyone. And, as their bodily reactions revealed, they had all the physiological signs of distress in response to the loaded words, even though the words they associated to almost always showed an attempt to sanitize the upsetting words by linking them to an innocent one. If the first word was “hate,” the response might be “love.”

Davidson’s study took advantage of the fact that (in right-handed people) a key center for processing negative emotion is in the right half of the brain, while the center for speaking is in the left. Once the right hemisphere recognizes that a word is upsetting, it transmits that information across the corpus callosum, the great divide between the brain’s halves, to the speech center, and a word is spoken in response. Using an intricate arrangement of lenses, Davidson was able to display a word so that it was seen in only half of the visual field. Because of the neural wiring of the visual system, if the display was to the left half of the visual field, it was recognized first by the right half of the brain, with its sensitivity to distress. If the display was to the right half of the visual field, the signal went to the left side of the brain



without being assessed for upset.

When the words were presented to the right hemisphere, there was a lag in the time it took the unflappables to utter a response—but only if the word they were responding to was one of the upsetting ones. They had *no* time lag in the speed of their associations to *neutral* words. The lag showed up *only* when the words were presented to the right hemisphere, not to the left. In short, their unflappableness seems due to a neural mechanism that slows or interferes with the transfer of upsetting information. The implication is that they are *not* faking their lack of awareness about how upset they are; their brain is keeping that information from them. More precisely, the layer of mellow feeling that covers over such disturbing perceptions may well be due to the workings of the left prefrontal lobe. To his surprise, when Davidson measured activity levels in their prefrontal lobes, they had a decided predominance of activity on the left—the center for good feeling—and less on the right, the center for negativity.

These people “present themselves in a positive light, with an upbeat mood,” Davidson told me. “They deny that stress is upsetting them and show a pattern of left frontal activation while just sitting at rest that is associated with positive feelings. This brain activity may be the key to their positive claims, despite the underlying physiological arousal that looks like distress.” Davidson’s theory is that, in terms of brain activity, it is energy-demanding work to experience distressing realities in a positive light. The increased physiological arousal may be due to the sustained attempt by the neural circuitry to maintain positive feelings or to suppress or inhibit any negative ones.

In short, unflappableness is a kind of upbeat denial, a positive dissociation—and, possibly, a clue to neural mechanisms at play in the more severe dissociative states that can occur in, say, post-traumatic stress disorder. When it is simply involved in equanimity, says Davidson, “it seems to be a successful strategy for emotional self-regulation” though with an unknown cost to self-awareness.

## The Master Aptitude

Just once in my life have I been paralyzed by fear. The occasion was a calculus exam during my freshman year in college for which I somehow had managed not to study. I still remember the room I marched to that spring morning with feelings of doom and foreboding heavy in my heart. I had been in that lecture hall for many classes. This morning, though, I noticed nothing through the windows and did not see the hall at all. My gaze shrank to the patch of floor directly in front of me as I made my way to a seat near the door. As I opened the blue cover of my exam book, there was the thump in my ears of heartbeat, there was the taste of anxiety in the pit of my stomach.

I looked at the exam questions once, quickly. Hopeless. For an hour I stared at that page, my mind racing over the consequences I would suffer. The same thoughts repeated themselves over and over, a tape loop of fear and trembling. I sat motionless, like an animal frozen in mid-move by curare. What strikes me most about that dreadful moment was how constricted my mind became. I did not spend the hour in a desperate attempt to patch together some semblance of answers to the test. I did not daydream. I simply sat fixated on my terror, waiting for the ordeal to finish.<sup>1</sup>

That narrative of an ordeal by terror is my own; it is to this day for me the most convincing evidence of the devastating impact of emotional distress on mental clarity. I now see that my ordeal was most likely a testament to the power of the emotional brain to overpower, even paralyze, the thinking brain.

The extent to which emotional upsets can interfere with mental life is no news to teachers. Students who are anxious, angry, or depressed don't learn; people who are caught in these states do not take in information efficiently or deal with it well. As we saw in [Chapter 5](#), powerful negative emotions twist attention toward their own preoccupations, interfering with the attempt to focus elsewhere. Indeed, one of the signs that feelings have veered over the line into the pathological is that they are so intrusive they overwhelm all other thought, continually sabotaging attempts to pay attention to whatever other task is at hand. For the person going through an upsetting divorce—or the child whose parents are—the mind does not stay long