own time, in contrast, we want our doctors back. Placebo effects do not work—at least, not usually—without a doctor’s personal involvement; and that fact is important to people. No one wants to return to the era where the doctor’s authority was unquestioned. But in a time dominated by managed care and fifteen-minute appointments with clinicians who barely know us, more and more of us are nostalgic for a time when primary care physicians had long-term personal relationships with their patients, knew their names, and took a pastoral interest in their well-being. As a culture, we still believe in positive thinking, but many of us also think it would be nice if our doctors were part of the formula. It turns out it can be lonely to be ill, and fewer of us than before are inclined to want to undergo the journey to hoped-for wellness completely on our own.

Chapter Four

Broken by Modern Life

Future shock [is] the shattering stress and disorientation that we induce in individuals by subjecting them to too much change in too short a time.

—Alvin Toffler, Future Shock, 1970

Norman Vincent Peale was the spokesman sine qua non for the power of positive thinking. But in 1957, in one of his syndicated columns, he struck an unaccustomed new note. Alongside the need to develop one’s capacity for positive thinking, he told his readers, was the need to do something about a growing problem of modern society: the problem of “stress.” What did this unfamiliar word mean? Peale helped his readers understand by telling them a little story:

A friend of mine is a pilot for one of the great airlines. He flies a big DC-6 and, when I fly with him, I enjoy the privilege of spending some time with him in the cockpit.

On one of these trips he was discussing the use of engine power. He stated: “If I use my full engine power for long periods, these engines will lose their efficiency. That is to say, stress isn’t good for them.” And he went on to describe how he uses every bit of his 2500 horsepower per engine to lift his mighty plane into the air at take-off. Then, as he begins to climb, he cuts back to 1800 and, when he reaches cruising level, he drops it still further to 1200.
"If I ran those engines at 2500 for more than two minutes, it would cause strain in them which, in time, might injure them permanently. I have great power at my command in this plane, but I must know how to use it, how to conserve it."

Peale’s point, of course, was that what was true for engines was true for people too. But he allowed his pilot friend to sum things up for him:

"Each of us as people come to times in our lives when we need all the horsepower we can pour on. But if we use it constantly and don’t know how to ease off, even God can’t keep us in physical health. We just can’t permit ourselves to go through life tearing ourselves to pieces by strain and stress."!

Horsepower, engines, strain, and stress—this is vocabulary from the world of engineering, a world we have not previously encountered. The presence of this vocabulary signals the fact that we are now working with a new kind of mind-body narrative, one that I call “broken by modern life.” When we tell stories based on this narrative template, we are no longer the passive creatures who are healed in response to the suggestions of powerful authority figures (“the power of suggestion”); nor are we people who find ourselves physically healed when we have the courage to face and confess our secret sins and traumas (“the body that speaks”); nor, again, are we the fortunate possessors of wells of energy we can tap to heal ourselves (“the power of positive thinking”). Instead, we are complex, self-regulating machines who must husband our energies properly if we are not to risk permanently damaging ourselves.

Stress is the central scientific concept at the heart of this new narrative of mind-body medicine; but that is not all it is. Stress is also, for countless millions of people, an experience, and a very visceral one at that. More particularly, stress is an experience that particularly affects us—modern people, living fast-paced, modern lives: "Stress may be worst killer of the modern era"; "Modern Life includes toll exacted in terms of stress"; "Stress: modern man’s silent enemy"; "Premature aging the result of modern stress." The headlines echo across the postwar period and into our own time. Why is stress our peculiar burden? Because, the answer goes, modern life makes demands on us that are fundamentally unnatural. Life may have been challenging for our ancestors, but at least they lived in some kind of harmony with their environment. When confronted with a threat, they could rise to meet it; when it was mastered, they could rest again. For us, we think, things are different:
The causes of American nervousness are complicated, but are not beyond analysis: First of all modern civilization. The phrase modern civilization is used with emphasis, for civilization alone does not cause nervousness. The Greeks were certainly civilized, but they were not nervous, and in the Greek language there is no word for that term. ... The modern differ from the ancient civilizations mainly in these five elements—steam power, the periodical press, the telegraph, the sciences, and the mental activity of women. When civilization, plus these five factors, invades any nation, it must carry nervousness and nervous diseases along with it.  

Why would all of these modern developments result in nervousness? Beard found his understandings and explanations in the modern world itself. Friendly with the American inventor Thomas Alva Edison, Beard drew on Edison’s work on the electric light bulb as a rich source of metaphors for thinking about the dynamics of the exhausted human body. In 1881, just three years after Edison’s public demonstration of the electric light, Beard had this to say:

Edison’s electric light is now sufficiently advanced in an experimental direction to give us the best possible illustration of the effects of modern civilization on the nervous system... [W]hen new functions are interposed in the circuit, as modern civilization is constantly requiring us to do, there comes a period, sooner or later, varying in different individuals, and at different times of life, when the amount of force is insufficient to keep all the lamps actively burning; those that are weakest go out entirely, or, as more frequently happens, burn faint and feebly—they do not expire, but give an insufficient and unstable light—this is the philosophy of modern nervousness. 

What could be done for people with neurasthenia? Beard, who took his electrical metaphor seriously, advocated direct application of electric currents to the bodies of neurasthenic patients. However, a more widely practiced treatment for neurasthenia, at least for women, was total bed rest. Developed by the American neurologist S. Weir Mitchell, the so-

Before stress: “Exhausted” by modern life

The experience of fuming in the supermarket checkout queue is so clearly stressful to us that we are tempted to suppose that, while the scientific study of stress may have a history, stress itself does not. People have always known stress, we think; it is just that we know more stress than earlier generations. But is this the last word on the matter? The concept of stress as we know it has only been in existence for about sixty years, and there is at least suggestive evidence that, in the period before people learned to think of themselves as stressed, they experienced the woes of life, even of modern life, rather differently. Back in late-nineteenth-century America, for example, when modern life became too much, people did not stew in a chemistry of frustration; rather, they fell victim to deficiencies in their “nerve force.” They took to their beds; they became incapable of dealing with bright lights, excessive noise, or surprises; and they suffered from respiratory disorders like asthma, hot and cold flashes, skin rashes, and sick stomachs. Their problems had less to do with being chronically overwrought than with being chronically exhausted.

In the 1880s, New York neurologist George Beard gave diagnostic specificity to this general visceral experience by naming it “neurasthenia” (a term actually borrowed from an older clinical tradition). Neurasthenia was a disorder, Beard said, that was caused by a malfunctioning of the nervous system, and if left untreated, it could result in collapse. Cases could be found throughout the civilized world, but Americans in particular were prone to neurasthenia because of the fast pace of American life, the harsh American climate, and the advent of various modern novelties that had changed life generally in this country:
called rest cure for neurasthenia involved taking women away from their families, sending them to bed, forbidding them to move, denying them access to any visitors, and feeding them a diet designed to build up their “fat and blood” reserves.6

For men, the cure for neurasthenia was different. A respite from the pressures of modern life was also advised, but in this instance it was accomplished by sending the patients out into primitive, natural surroundings. As Mitchell put it, when it came to men, “The surest remedy for the ills of civilized life is to be found in some form of return to barbarism.”7 The young Teddy Roosevelt was among the cases of male neurasthenia in this time who was prescribed a regime involving vigorous excursions into the wilderness. It is tempting to speculate that, were it not for those youthful experiences, the American national parks system, established some years later under Roosevelt’s presidency, might never have come into being.

But for every cure, there were two new cases. By the early twentieth century, the incidence of neurasthenia had reached what appeared to be epidemic proportions. A writer for the North American Review, H. Addington Bruce, observed in 1908, “On every street, at every corner, we meet the neurasthenics.”8 A new group of elite, private-practice neurologists—so-called nerve doctors—emerged to treat the growing numbers of the infirm and the distressed in the wealthier classes, while people of more modest means tended to favor the tonics and pills that were sold by the patent-medicine industry as ways to calm and strengthen “bad nerves.”

And then it all ended. Today, the neurasthenic diagnostic category has virtually vanished from our collective memory. Instead, we believe ourselves to be in the midst of an epidemic of stress. We have no difficulty seeing stress as the natural response of our species to the unnatural demands of modern life, and we find visceral confirmation for our beliefs on a daily basis. How did all this happen?9

Fighting like cats and dogs: Walter B. Cannon and the “fight or flight” response

Two men, above all, helped launch what we now understand as stress into the modern world. The first was the Harvard physiologist Walter B. Cannon, the second the Czech-born endocrinologist Hans Selye, who was a professor at the University of Montreal. In contrast to Beard, neither of these men was primarily a clinician. First and foremost, they were experimental physiologists. In other words, stress first came into our lives, not as a disease, not as a human experience, but as a discovery in the laboratory.

The relevant history here begins with Cannon. When he was still a student at Harvard, his mentor, Henry Pickering Bowditch, set him and another student, Albert Moser, the task of using newly developed X-ray technologies to study the passage of food through the digestive tract of laboratory animals. The work proved fruitful, and Cannon went on to use X rays to study peristalsis—the intestinal movements associated with digestion—about which at the time very little was known.10

It was in the course of these investigations of peristalsis that something unexpected happened. Cannon found that whenever his experimental animals—mostly cats—became distressed or enraged, their peristaltic activity was inhibited. This led to new questions: Why should distress or

Walter B. Cannon (1871–1945), at work in his laboratory at Harvard Medical School. Courtesy of the Harvard Medical Library in the Francis A. Countway Library of Medicine
rage inhibit peristalsis? What did emotions and digestion have to do with each other?

To find out, Cannon developed a protocol that involved putting cats in a safe cage, and then bringing in their "natural enemy"—a dog—to sniff and bark at them. The cat would become agitated (at least, sometimes), and Cannon would then draw blood from the animal and compare it with the blood of cats that had not been made to feel threatened. Following a lead from a colleague, Daniel Roy Hoskins, who was working in a laboratory in Ohio, Cannon found that the blood of frightened cats always contained a certain hormone then called adrenin (today called adrenaline or epinephrine). At the time, it was known that adrenin was secreted by the adrenal gland (located on the kidney). It was also known that injecting adrenin into an animal resulted in certain physiological changes: increase in blood pressure and blood sugar levels, dilation of the pupils, piloerection (the "standing of hair on end"), and inhibition of digestion. Nothing in the understanding of the time, however, suggested any reason why all of these physiological changes should be associated with emotional excitation.

In the end, it was a Darwinian perspective that made sense of everything for Cannon. He realized that all the physiological changes observed in a laboratory animal confronted with a "natural" adversary improved that animal's ability either to fight or flee from its enemy:

The increase of blood sugar, the secretion of adrenin, the altered circulation and polycythemia in pain and emotional excitement have been interpreted . . . as biological adaptations to conditions in wild life which are likely to involve pain and emotional excitement, i.e., the necessities of fighting or flight.

In "conditions in wild life," the animal, having mobilized its resources, either successfully masters the threat or fails to do so. If it fails, it ends up becoming prey. If it succeeds, its physiology settles back to a pre-emergency state. Cannon coined the term "homeostasis" for this process of dynamic regulation. Later, he showed that not just the adrenal gland but also specialized parts of the nervous system (now known as the sympathetic and parasympathetic systems) were centrally involved in such biochemical regulatory processes.

All of this is famously part of the history of modern physiology. But from our point of view here, Cannon's next move was key. He noted that human beings have the same capacity as other animals for fight or flight reactions; we too have homeostatic systems to help us regulate the use of these reactions in response to environmental challenges and threats. In the modern era, however, Cannon suggested that life had become so fast paced, so uncertain, and consequently so anxiety provoking that many people went through their days as if they were cats faced with dogs perpetually barking at them. With their "emergency" responses thus chronically stimulated, there were few opportunities for homeostatic mechanisms to restore their physiology to a resting state. Over time, therefore, modern human beings were prone to falling ill in what could be considered characteristically modern ways:

The bodily changes in emotional excitement may be considered as an anticipatory of many . . . dangers. The forces of the organism are put on a war-footing. But if there is no war to be waged, if the emotion has its natural mobilizing effects on the viscera when there is nothing to be done, obviously the very system which functions to preserve constancy of conditions within us is then employed to upset that constancy. It is not surprising, therefore, that fear and worry and hate can lead to harmful and profoundly disturbing consequences.

Cannon delivered these remarks as part of a lecture to colleagues in 1936, in which he urged medical practitioners to wake up to the fact that they were living in a new world of illness experience. Patients today were largely suffering not from old-style "plagues and pestilences" but from the "strains and stresses" of modern life; and orthodox medicine was largely failing to take the resulting disorders seriously. "Taught to deal with concrete and demonstrable bodily changes," he said reprovingly, "we are likely to minimize or neglect the influence of an emotional upset, or cast the patient who complains of it 'neurotic,' perhaps tell him to 'go home and forget it,' and then be indifferent to the consequences."
In fact, as Cannon's own laboratory work showed, it was clear that emotions were not just in the head; they were also in the body. Chronic emotional upset did not just cause people to feel unhappy; it could cause them to become physically ill. This was the lesson, Cannon said, that mainstream medicine needed to learn if it wanted to deal with the new realities of illness in the modern era.

Of rats and men:

Hans Selye and the laboratory invention of "stress"

Cannon understood his research to be about the physiological basis and clinical effects of strong emotional experiences, but he did not use the word "stress," certainly not in the way we have come to use it today. It fell to Hans Selye to do that, and in so doing to transform Cannon's concepts of homeostasis and fight or flight into something new, something that involved emotion, to be sure, but that was not completely defined by it.

Selye was a Czech physician and biochemist, trained in Prague, who fled the Nazis in the early 1930s and finally found work in the Department of Endocrinology at the University of Montreal. His first position was as an assistant to the endocrinologist James B. Collip, who was looking for evidence of the existence of a new female sex hormone he had reason to believe might exist:

I was to go out to the slaughterhouse with a large bucket and bring it back to him as rapidly as possible, filled with the ovaries of freshly slaughtered cows. . . . [Collip] made various extracts of this material and, as I was the youngest member of the academic staff, I was assigned the tedious task of injecting these into female rats and looking for any kind of change produced that could not be ascribed to one of the known hormones of the ovary.¹⁷

Selye duly carried out this task over a period of some months, but when it came time to perform the autopsies on the treated rats he was disappointed to see there had been no change in their sex organs. However, they did all suffer from a curious triad of symptoms: peptic ulcers in the stomach and upper intestine; enlarged adrenal glands; and shrunken immune tissues. Were these symptoms some sort of unexpected consequence of the bovine ovarian extract?

To find out, Selye began to test the effects of other organ extracts on the physiological functioning of the rats. He found that extracts of kidneys and spleens produced the same effects as extracts of ovaries. Then he had a new thought: perhaps what the rats were exhibiting was not a specific response to a specific agent but a nonspecific response to the trauma of having a noxious (and probably impure) agent injected into their bodies. He began to wonder if other kinds of trauma would result in the same outcome—and experimented by making life very unpleasant for many rats. Some were put on the roof of the medical building in the winter; some were put down in the heat of the boiler room; some underwent an operation in which their eyelids were sewn back and they were then exposed to brilliant lights; some were placed inside barrel-like, revolving treadmills powered by an electric motor that forced them into a state of complete exhaustion. "It gradually turned out," he said later, "that no matter what type of damage I inflicted on an experimental animal, if it survived long enough and the stressor was sufficiently strong, the typical combination would be produced: adrenal hyperactivity, lymphatic atrophy and peptic ulcers."¹⁸ His early findings were published as a letter to the editor in the journal Nature in 1936.¹⁹

What, however, did it all mean? In his memoirs, Selye talked about the way in which the rat experiments had put him in mind of an experience he had had as a young medical student in Prague. His teachers there had been very concerned that he learn to distinguish one disease from another, but he had been more struck by the fact that all of the patients he was asked to examine actually presented similar stereotypical symp-
called this the "Exhaustion Stage." During this stage, mechanisms enabling adaptation began to show signs of exhaustion, planting seeds for the emergence of stress-linked diseases. In the most severe cases, the outcome of this stage was death.

The implications for humans in modern times, Selye thought, were clear. In a fast-changing world filled with stress, each of us had a choice: learn to adapt or risk illness or worse. "The secret of health and happiness," wrote Selye, "lies in successful adjustment to the ever-changing conditions on this globe; the penalties for failure in this great process of adaptation are disease and unhappiness."23

This was Selye’s stress theory, but many of his colleagues in endocrinology and experimental physiology—including Cannon—reacted to it skeptically.23 They suggested that Selye had exaggerated the uniformity of the responses seen in different experimental situations, had not adequately defined stress as a concept, and that, in any event, many of his experiments were highly artificial and had little if anything to say about pathophysiological processes seen in a clinical context.24

Instead of backing off or continuing to try to persuade his skeptical colleagues, however, Selye responded by looking outside physiology for allies and supporters. Over the years, he cultivated an extended audience for his stress theory in broad-based publications, lectures, general-interest articles, and more. He reached out to military psychiatrists concerned with the challenges facing soldiers in the new Cold War era; to restless psychosomatic medical clinicians looking for alternatives to the old Freudian nostrums; to general practitioners looking for new ways of making sense of patients with elusive symptoms; to special-interest lay groups (The Young Presidents’ Club, the Million Dollar Round Table, the Maharishi Mahesh Yogi’s International Meditation Society); and to ordinary people who read magazines like The Readers’ Digest. Selye was especially appealing to people who knew they felt bewildered or unwell, but were perhaps no longer quite persuaded by the doctrine of bad nerves that had helped their parents and grandparents make sense of their experiences of malaise.25

The strategy worked. As early as 1956, one commentator opined that Selye’s ideas had "permeated medical thinking and influenced medical research in every land, probably more rapidly and more intensely than
any other theory of disease ever proposed. By the 1970s, discussions of stress had become routine in advice columns, social analyses, self-help literature, and popular magazines. In 1981 the Institute of Medicine estimated that some $35 million had been spent on stress research in 1979 alone, made note of the "thriving industry" of remedies and literature designed to help alleviate the problem, and pointed to the fact that many occupational-health disputes and legal cases now involved accusations of "excessive stress" on the job. One of the most prominent cases of this sort happened in 1981, when the U.S. Professional Air Traffic Controllers Organization (PATCO) went on strike for the first time in its history, on the grounds that its controllers were being subjected to intolerable levels of stress. Researchers hired by the Federal Aviation Administration to investigate this had failed to find standard biochemical and behavioral indicators of stress, however, and Ronald Reagan, newly elected to the presidency, ended up firing all 11,359 of the striking workers.

World War II and the militarization of stress

Selye's marketing efforts on behalf of stress were greatly aided by the fact that the idea resonated with broader clinical and social concerns of the time. One of the key catalysts in creating receptivity to his new vision of illness in the modern world was World War II. Many felt that this war had marked a significant change in the nature of the challenges faced by troops in combat settings, that they were forced to grapple with unprecedented assaults on their minds and bodies. In 1945, two military psychiatrists working on the North African front, Lt. Col. Roy R. Grinker and Maj. John P. Spiegel, clarified some of the ways in which this was so in their milestone study Men under Stress. In this book, they described their analysis of bomber pilots, men whose mission it was to drop bombs from planes over enemy territory. The work was brutal, in part, people said, because it was so unnatural; it put the pilot (in the words of a later analyst) "in an environment for which his evolutionary history could not possibly have fitted him." The cockpit in which he sat was tiny and cramped and prone to extremes of low temperature and lack of oxygen at high altitudes. If anything went wrong with his equipment, he was helpless. Danger was all around him. And he was by himself, isolated from all com-

rades. Military planners knew that bomber pilots could stand only so many sorties before they would start to unravel. Grinker and Spiegel's book was an attempt to see what specific factors caused some men "under stress" to reach their breaking point faster than others.

In spite of the title of their book, Grinker and Spiegel were not building on Selye's laboratory-based, physiological vision of "stress." For Grinker and Spiegel, stress simply connoted hardship or affliction (a colloquial definition of the word dating back to the Middle Ages); they wrote about their military patients from a doggedly psychoanalytic perspective. More specifically, they conceived their work as a study of the ways in which preexisting neurotic vulnerabilities in combatants could be brought to the surface by the hardships of war, resulting in breakdown, maladaptation, or neurosis. In their words, "The question . . . is: How much did his previous personality and how much did the stress he experienced contribute to his reaction?" Franz Alexander, Flanders Dunbar, and Freud made up prominent parts of Grinker and Spiegel's bibliography; Selye was not even cited.

In the postwar era, however, Selye was able to persuade several military psychiatrists that there was in fact an important link between the laboratory work on what he was calling stress and the larger concerns they had about the new challenges facing fighting men in modern warfare. They would get further, he convinced them, if they started to pay attention, not just to the unconscious conflicts supposedly experienced by their soldiers but also to their adrenaline levels. And in the end, many were persuaded. In fact, in the 1950s and 1960s the military did more than any other group to raise the profile of the idea of stress, extending its apparent explanatory reach out of the laboratory and into the real world. By the 1970s, as many as a third of all researchers doing stress research were based in U.S. military institutions: the Walter Reed Army Institute of Research and the Stress and Hypertension Clinic of the Naval Gun Factory in Washington, D.C.; the Military Stress Laboratory of the U.S. Army; the Naval Medical Research Unit in Bethesda, Maryland; and the Stress Medicine Division of the Naval Health Research Center in San Diego, California.

Nevertheless, from the beginning these researchers faced formidable challenges in adapting a research program originally developed for labo-
ratory rats to military concerns. It was not just a matter of developing protocols that could be applied to people—that kind of effort had already begun. It was more that, in order to be of much use for military planning, experimenters needed to find experimental stressors that would at least approximate the kinds of stresses that a soldier could expect to experience in a true combat situation. Mental arithmetic tests and mild electric shocks were not going to satisfy that imperative. In fact, in one remarkable study from 1962, a group of particularly resourceful researchers subjected soldiers to a series of highly realistic simulated crisis situations without telling them they were participating in research. One scenario involved leading the men to believe they were trapped in an airplane that was about to make a crash landing; another involved isolating the soldiers in an area they were told was about to be subjected to artillery attack; still another involved isolating them in an area that they were told had been accidentally exposed to radiation. Some were also left in a building that was supposedly in imminent danger of being engulfed in a forest fire (they could see the smoke); and others were led to believe that, because of an error they had made, a comrade of theirs had been seriously injured in some undisclosed underground location. The researchers investigated the effects of such experiences on circulating hormone levels, and they explored how well the men continued to perform on a range of crucial tasks.34

It was clearly not practical, however, to do studies like these on a regular basis. If the insights and understandings of the laboratory were going to be adapted to the real-world interests of the military, therefore, researchers realized they would have to find a different way forward. In this context, some focused on the fact that Selye’s model of stress had emphasized that what broke an organism usually was not a single, sharp experience of stress, but rather cumulative experiences over time. If that was the case, then potentially the whole world of everyday life could be conceived as a laboratory capable of producing data relevant to military concerns. After all, in these modern times, everyone suffered varying degrees of stress. Was it possible that, over time, this sort of stress could add up to effects just as noxious as any experienced by a soldier on the battlefield? From this perspective, some began to argue that the differences between military stress and civilian stress had been exaggerated: “many conditions of ordinary life—for example, marriage, growing up, facing school exams, and being ill—could produce effects comparable to those of combat.”35

A key technology in reinforcing this new perspective was a questionnaire called the Social Readjustment Rating Scale (SRRS). Designed in the mid-1960s by psychiatrists Thomas H. Holmes and Richard H. Rahe (significantly, Rahe had also been a U.S. Navy commander), the test aimed to give researchers a way to quantify the cumulative effects of stress on individuals over a period of a year or more. At the heart of the test was a scale that identified forty-three more or less common stressful life events—events that required adaptation to change—and rank ordered them from 0 to 100. “Death of a spouse” was first on the list, worth a full 100 “life change units” (LCUs); “taking out a big mortgage” was midway down, worth 31 LCUs; and going through Christmas holidays was near the bottom of the list, worth a mere 12 LCUs.36 (As a matter of interest, the original scores had been determined by making marriage the fixed midpoint on the scale, and then asking groups of people to rank the other stressors in relation to that fixed point.) What mattered, according to this line of research, was not whether the changes in question had a distressful or joyful meaning for the individual, but the amount of adaptation each demanded. If a person’s cumulative LCU score was above 200 over the course of a year, he or she was considered to be at significant risk for certain diseases; over 300, and a person was considered to be gravely at risk.37

For the American poet Robert Sward, this way of thinking about the challenges of life worked on him—literally—like a strange poem:

To be married and moderately unhappy
is less stressful than to be unmarried
and male and over 30.

To be happily married counts for “0” points.
if your spouse dies that counts for 100 points.
63 for going to jail. 73 for divorce.

Divorce is more stressful than imprisonnent.
Getting married is 3 points more stressful
Postwar prosperity and the overburdened executive

Even though the stresses of modern life spared no one, there still might be differences worth registering in the ways that the burdens of stress were distributed across the population. Did the contented manual laborer really know the same kind of stress as his harried boss? Did the housewife, spared the burden of needing to draw a salary, really understand the kinds of stresses her husband confronted on a daily basis? The answers seemed self-evident.

Nevertheless, it wasn’t long before the laboratory seemed to confirm them. In 1958, American psychologist Joseph Brady published a suggestively titled article called “Stress in ‘Executive’ Monkeys.” The article described a study in which pairs of laboratory monkeys were subjected to cycles of electric shock. Each monkey had access to identical-looking levers, but only one of the levers was actually functional: when pressed, it deactivated the electric circuits. The monkey with access to the working lever was called the “executive” monkey and was harnessed to his com-
panion in such a way that, when he pressed his lever in a timely fashion, both animals were able to avoid shock. Brady reported how, over a period of several days, the "executive" animal in each round of the experiment was more likely to develop gastric ulcers than his passive counterpart (even though both received exactly the same number of shocks). The conclusion seemed obvious: the role of executive decision-maker produced far more stress, and stress-linked disease, than did the role of passive follower. 39

Later, in the early 1970s, psychologist Jay Weiss challenged this conclusion, suggesting that in fact Brady's "executive" monkeys suffered from stress-linked disease not because they had to make all the decisions, but because the experimental setup actually denied them any sense of real control over their fate. 40 By that time, however, the idea of a link between stress and the executive or managerial lifestyle had become deeply embedded in American popular culture. It confirmed what everyone thought they knew, namely that life was tough at the top.

Indeed, the Brady study had been published at the height of the Eisenhower era, when many were convinced for other reasons that all was not well. This was, of course, an era of unprecedented prosperity. After World War II, the United States had consolidated its position as the world's wealthiest nation. A growing number of middle-class Americans were holding what began to be called "white-collar" jobs, working as corporate middle managers, office workers, salespeople, service employees, and teachers. Automobile production quadrupled annually between 1945 and 1955. Low mortgage rates (designed particularly to make home ownership affordable for returning serviceman) fueled a housing boom. Many of the houses in question were built in the new suburbs, where they encouraged a lifestyle organized around the nuclear family and material comfort.

Nevertheless, for many Americans these developments had produced less happiness than might have been expected. The 1950s was not just an era of television and two-car garages; it was also, as many historians have observed, the "age of anxiety." 41 Some of the reasons for the anxiety were obvious: the bomb, fears of a communist invasion, and widespread beliefs that democracy and freedom were being put at risk by spies within American society. Other reasons for anxiety, though, seemed to have more to do with pressures associated with the new prosperous lifestyles themselves. The prosperity itself had been partially achieved through a new conservative approach to gender roles. Women who had developed a taste for employment during the war years now found themselves under great pressure to return to the home in order to make more jobs available to returning soldiers. 42 In the 1950s, growing numbers of these women were diagnosed by doctors as deeply anxious in their own right, and were offered various remedies for their woes. These included psychotherapy designed to help them adjust to their roles as wives and mothers, and also new medications known as minor tranquilizers which helped take the edge off their most intense feelings. (The minor tranquilizers were later dubbed as "mother's little helpers," after the derisive Rolling Stones song of that name. 43

At the same time, it was clear to many that America's menfolk were also in trouble. These were the years that saw the coining of terms like the "rat race" and "the tread mill," phrases that brought attention to the dehumanizing costs of maintaining middle-class lifestyles. New forms of popular literature and film began to glorify rebellion from the conventions of the time. In 1951, sociologist C. Wright Mills published an influential study called White Collar: The American Middle Classes, in which he

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identified a new class of workers—the middle managers—and worried aloud about their values and psychology. In 1955, Sloan Wilson's novel *The Man in the Gray Flannel Suit* (made into a film starring Gregory Peck the following year) gave vivid expression to what life might be like for these kinds of workers on the ground. The novel tells the story of a young married couple with three children who live miserable, martini-soaked lives in a Connecticut suburb, while Tom, the husband—who is also a World War II veteran—struggles to climb the corporate ladder in his Manhattan firm. Eventually, he finds the courage to rebel against his situation.45

Finally, in 1956, sociologist William Whyte offered what felt to many like an incisive analysis of men in gray flannel suits like Tom. In his book *The Organization Man*, he wrote:

This book is about the organization man. If the term is vague, it is because I can think of no other way to describe the people I am talking about. They are not the workers, nor are they the white-collar people in the usual, clerk sense of the word. These people only work for The Organization. The ones I am talking about belong to it as well. They are the ones of our middle class who have left home, spiritually as well as physically, to take the vows of organization life, and it is they who are the mind and soul of our great self-perpetuating institutions.46

Now, the consensus already existed that the wives of these organization men suffered from anxiety. But how was one to describe the situations of the men themselves? Increasingly, people were inclined to draw on the manly, military language of stress to help the men give voice to and seek remedies for what ailed them. Some of these men probably ended up taking the same minor tranquilizers as their wives. But being able to think of themselves as stressed meant they could seek help without having to feel stigmatized by a feminized diagnostic label. Indeed, in 1957 the pharmaceutical company Charles C. Pfizer made a short industrial film, *The Relaxed Wife*, that aimed explicitly to encourage doctors to think of the stressed businessman as a target for treatment with minor tranquilizers. Filled with strategically humorous images (e.g., a businessman with a head literally about to explode under pressure), lots of talk about the tensions of corporate life, and the importance of learning to relax, the film managed to promote its anxiolytic product, Antarax, without using the word “anxiety” once.47

**Men coping badly: the rise of the Type A personality**

In the 1950s and early 1960s, virtually everyone involved in the larger debates about the health costs of stress agreed that stress was a cumulative experience. Pressure built up inside a man's head until he was at risk of exploding. The burdens of decision making ate up the insides of the overstressed executive until he developed ulcers. The Social Readjustment Rating Scale was fundamentally grounded in this understanding of stress as cumulative.

And yet by the late 1960s and 1970s, considerable evidence had accumulated to suggest that this approach to stress might be fundamentally misguided. Rather than responding in a uniform way, different people seemed instead to respond to the same stressors, both in the lab and in life, in a range of ways. Some people seemed to be remarkably resilient even in the face of considerable provocation, while others crumpled under what would appear to be only modest provocation. Still others appeared to remain composed but showed impaired performance.

Results like these led some stress researchers—notably University of California, Berkeley psychologist Richard Lazarus—to insist that the entire engineering approach to stress as cumulative burden or load was misleading. Unlike machines, Lazarus argued, humans (and to some extent laboratory animals) bring a set of cognitive skills to the circumstances in which they find themselves. When they face a novel situation or potential stressor, people engage first in appraisal behavior to decide if they are indeed threatened. Then they review their options and determine if they have the capacity to cope with the stressor. Stress occurs, according to Lazarus, only when people conclude that they face a threat they are incapable of mastering.48 In this sense, Selye and other physiologically oriented stress researchers had missed a key mediating variable that stood between a world full of dangers and the biological stress response: the human capacity for creative coping.
Possibly, this insight changed everything. If stress was redefined as a thing that was less objectively imposed on a person by the world and more a function of how effectively that person coped with the world, then this raised a new question: Was it possible that there were certain types of people who consistently coped less well than others with the challenges of life? In other words, were there some people who were characterologically predisposed to manufacture unhealthy levels of stress for themselves?

In the 1960s, an increasing number of people answered this question with a yes. Indeed, a consensus began to emerge in the field that there existed a particular kind of man (and originally it was always a man) who suffered from dangerously high levels of stress, especially occupational stress, not because his workload was objectively so demanding but because he placed endless demands on himself. Competitive, obsessed with deadlines, always in a hurry, men like this were soon given a name: Type A personalities. At the time, the evidence seemed clear that, unless they changed their ways, such men risked a tragic end: premature death from heart failure.

The discovery of the Type A personality and his apparent vulnerability to heart attack had roots in a far more broadly based set of public health concerns in the postwar period. This was a period of sharply rising levels of coronary heart disease in the American population. Once seen as a relatively rare disease in the United States and Europe, by the second half of the twentieth century, heart disease had come to be called the silent epidemic of the times, responsible for some 30 percent of deaths in industrialized countries—the largest single cause of death from any disease.49

Why this sharp rise in the incidence of heart disease? In the late 1940s and 1950s a number of epidemiological efforts were launched to try to find out. Most notable among them was the Framingham Heart Study, which was the first to confirm a link between smoking and heart disease and to show that physical activity reduced one's risk of heart disease. Also important was the Seven Countries Study, which compared heart disease rates in the United States, Yugoslavia, Italy, Greece, Finland, the Netherlands, and Japan and provided evidence linking heart disease to diets high in saturated fat.50

In spite of such studies, some researchers felt that epidemiological investigations should be extended beyond diet and exercise to embrace the possibility that some kinds of occupations also might put people at risk. The reason had to do with a skewing of the epidemiological data; while heart disease was on the rise in general, its incidence was particularly high among males who self-identified as white-collar managerial types—so much so that some cardiologists had taken to calling coronary heart disease the executive disease.

Why might white-collar executives be more at risk than others? In the mid-1950s, San Francisco cardiologists Meyer Friedman and Ray Rosenman began to make the link to stress. As they later told the story, they had noticed that the front edges of the chairs in their waiting rooms were worn down by fidgeting, impatient cardiac patients from that occupational sector.51 Was there a link between the chronic impatience of these men and heart disease, they wondered? To see what others thought, they sent a survey around to a hundred and fifty San Francisco businessmen and a hundred general practitioners, asking them the same question: Were there any personality traits they believed characterized people who had heart attacks? From the list of options on the questionnaire, more than 70 percent of the businessmen and a majority of the internists picked "excessive competitive drive and meeting deadlines."52

This was clinical intuition. The question was, could it be validated objectively in a clinical study? To find out, Friedman and Rosenman and two colleagues studied forty accountants for six months: three months before April 15 (the date when tax returns must be filed in the United States) and three months after that date. Every two weeks, these physicians measured their subjects' cholesterol levels and the speed with which their blood clotted (rapid clotting was considered a risk factor for heart disease). Sure enough, by late March and early April, both had increased significantly. Indeed, the researchers reported that the accountants' blood "began clotting at a dangerously accelerated rate." In May and June, though, both cholesterol and clotting returned to normal levels. Since nothing else had changed substantially in the lives of these men, the conclusion seemed to follow that the stress of meeting the deadline for filing tax returns had increased the accountants' risk factors for heart disease.53

Put another way, this study of accountants suggested that a certain kind of pressured working environment could affect heart functioning. It
did not, however, imply that by virtue of their personalities, particular groups of professionals, such as accountants, were chronically at risk for heart disease. After all, when the deadline for the delivery of tax returns passed, the accountants’ health improved. A year later, however, Friedman and Rosenman went much further. In a study titled “Association of Specific Overt Behavior Pattern with Blood and Cardiovascular Findings,” they compared three groups of men, identified simply as groups A, B, and C. Group A consisted of eighty-three men who all manifested “an intense, sustained drive for achievement” and were known to be perpetually “involved in competition and deadlines, both at work and in their avocations.” Group B also consisted of eighty-three men, but these were supposed to be the exact opposite of group A—relaxed, easygoing, and noncompetitive. The third group, C, was a kind of control group: it consisted of “46 unemployed blind men” who manifested “a chronic state of insecurity and anxiety.” The stunning punch line of this study was: “Chronic coronary artery disease was seven times more frequent in group A than in group B or group C.”

Emboldened by these results, Friedman and Rosenman continued with a much more ambitious project, the Western Collaborative Group Study, which attempted to see if Type A behavior did not just correlate with heart disease but could actually predict it. This new study used a standardized structured interview technique to screen some 3,100 healthy volunteers for Type A behavior tendencies and then proceeded to track them over time. After eight and a half years, the men who had originally been classified as exhibiting a Type A behavior pattern turned out to be twice as likely to develop heart disease as the men who had been judged originally to exhibit a Type B behavior pattern. The results were not as spectacular as those reported in the original correlation study, but they were statistically significant—and they supported the hypothesis. In 1981, a review panel from the U.S. National Heart, Lung, and Blood Institute thus formally announced that it judged the evidence to be conclusive: Type A behavior pattern was an independent risk factor for coronary heart disease in middle-aged U.S. citizens in industrialized geographical areas.

If this was the case, what was to be done? Would medicine now insist that the corporate lifestyle of prosperous postwar America was no less a health hazard than smoking? Would epidemiologists now demand fundamental changes in the working conditions of American executives? If people were willing to blame modern life in general for a range of stress-linked disorders, did it not follow that they should also be willing to blame the corporate world for its role in encouraging behaviors that increased employees’ risk of heart disease and premature death? A few people moved cautiously in this direction, noting that the “20th-century Western milieu” had “probably increased the prevalence of [Type A behavior]... if only by offering special rewards to those who can perform more competitively, aggressively, and rapidly than others.”

In the end, however, the discussion about Type A behavior and heart disease failed to connect decisively to the larger social and political debates of the time about the price of prosperity in postwar America. Instead, the literature increasingly adopted a strategy that involved accommodation to existing workplace values. In part, this happened because it was felt that Type A personalities themselves were not fundamentally interested in changing—they stood to lose too much. In 1978, Rosenman wrote that doctors should take care to reassure their patients that “alternative behavior [to the classic Type A pattern] is not a threat to their socioeconomic well-being.” On the contrary, by being willing to introduce small stress-defusing rituals into their existing routines, they were likely actually “to accomplish more with less strain” and to live longer, healthier lives. At the same time, very little was asked of management: “if possible, a working environment should be created that will reduce noise, telephone interruptions, a chronically littered desk, etc.—all factors that elicit urgency and irritation.”

By the mid-1970s, the Type A personality had become a fixture of American culture. The media had played its part here, with hard-to-ignore headlines like “Heart Attack Personality: Will Success Kill ‘Type A’ Man?”; “You May Make a Killing. Personality a Heart Attack Sign”; “Stress No. 1 Coronary Factor? Type B Better off in a Type A World”; “Rushing Your Life Away with ‘Type A’ Behavior.” Some historians have argued that, as a cultural trope, Type A functioned as a kind of caricature of ambitious, competitive masculinity, and indeed it is perfectly possible that some people took a perverse pride in discovering evidence for Type A traits in themselves. In their 1974 self-help book Type A Behavior and Your Heart,
Friedman and Rosenman even provided a handy quiz to help people in their efforts on this front:

Do you have a habit of (a) explosively accentuating key words in your ordinary speech . . . and (b) finishing your sentences in a burst of speed?

Do you always move, walk, eat rapidly?

Do you get unduly irritated at delays—when the car in front of you seems to slow you up, when you have to wait in line, or wait to be seated in a restaurant?

Do you often try to do two things at once?

Do you almost always feel vaguely guilty when you relax and do absolutely nothing for several days (even several hours)?

If you answered YES to any of these questions, you may be falling into the dangerous TYPE A pattern. You need to read this book, take the complete test and change your behavior to prolong your life.62

In addition to the kinds of homey changes that Friedman and Rosenman were recommending in these years—coffee breaks, fewer telephone interruptions, etc.—some people also began to promote a more scientific-seeming approach to stress reduction: relaxation training, the mastery of methods that were supposed to quickly produce a decrease in stress on an as-needed basis that in no way otherwise interfered with a person's busy lifestyle. In these years, the progressive relaxation training method developed in the 1930s by the American psychologist Edmund Jacobson became reconceptualized as a means of stress reduction and enjoyed renewed popularity.63 By the end of the 1970s, Harvard cardiologist Herbert Benson's quick-and-easy method for evoking what he called a "relaxation response" was also winning large numbers of converts; I have more to say about Benson's work in chapter six.

Through much of the 1970s, the relaxation technique that had the most cachet—and also, in the eyes of many, the most clinical promise—was biofeedback. In the 1970s, some saw biofeedback as a sober clinical extension of operant conditioning methods originally developed in the animal laboratory, while others viewed it as a training technology that might help people achieve their "supermind." Either way, all agreed that it was likely to be good for reducing stress.

How would it do this? As the name suggests, biofeedback was (and is) an attempt to extend the scope of conscious control over physiological processes of which people are normally unaware. The basic method involves using instruments to measure and display changes in particular physiological processes, and then to train individuals to use the resulting information to self-regulate their bodies in ways that would normally be impossible for them.

One of the important early pieces of evidence that people might be able to do this had come from the work of psychologists Neal Miller and Leo DiCara. These researchers had shown that laboratory animals temporarily paralysed with curare (a poison traditionally used to coat blow darts in South America) could be trained using operant conditioning techniques (reward and punishment) to alter their visceral physiology in specific target directions. Responding to reinforcers, rats learned to alter their heart rates and even their brain waves; and dogs learned to alter their intestinal activity and salivation levels.64

For human subjects independently motivated to achieve the target results, the feedback process itself generally took the place of reinforce ment. Hooked up to the right instruments, it was said, people could gain self-control over a huge array of disorders, from incontinence to asthma to epilepsy. Always at the top of the list of promised benefits, however, was the idea of relaxation on tap—of using biofeedback to turn off the stress response at will.

One satisfied customer of a biofeedback training program designed for this purpose told a journalist what the experience had been like:

He responded to an ad for the new Biofeedback Training Center, 645 N. Michigan Av., and spent a month taking the $225 course. In each of the ten sessions, he sat in a comfortable womb chair in a soundproof room. Electrodes strapped to his forehead enabled him to listen to a sound feedback of his frontalis muscle tension and watch a series of lights that also illustrated his tension level.

When he clenched his teeth, the lights shot from green to yellow
to red, indicating maximum tension. As he learned to relax, the lights changed one by one until they were solid green. He learned the "feeling" of relaxation, which, with regular practice, he can now produce at will.

The journalist went on to note, pointedly, that the customer in question had gotten into the habit of turning on the "feeling" during crucial business meetings, because he had found that doing so allowed him to "concentrate better on the problems at hand."65

By the 1980s, the warning messages about Type A behavior had been absorbed. The link between the workaholic lifestyle and heart disease seemed about as solidly established as one could hope for; the relaxation industry was in full swing . . . and then things began to unravel. Skepticism had already been growing in some circles about certain aspects of the methodology used in the Western Collaborative Group Study (particularly aspects of the interviewing protocol), but they remained largely under the public radar screen until 1988. In that year, an article appeared in the New England Journal of Medicine that reported the results of a follow-up study of the subjects who had participated in the Western Collaborative Group Study. When assessed at eight and a half years as already mentioned, it appeared that men with Type A traits were twice as likely to die of heart attacks as the so-called Type B men. On a longer timescale, however, the trend had failed to hold—in fact, the follow-up data showed heart disease to be modestly lower among Type A than among Type B men. "This apparent advantage associated with Type A behavior is surprising," the authors of the study commented wryly, "and needs confirmation, but the results do indicate that patients with CHD and a Type A behavior pattern are not at increased risk for subsequent CHD mortality."66

Other researchers insisted that these surprising results did not mean there was no link whatsoever between certain personality types and heart disease. New analyses now began to suggest that just two traits associated with the original Type A behavior pattern—but originally not given much emphasis—did indeed conduce to heart attack: hostility and cynicism.67 With this new twist, however, no longer are we unambiguously in a world in which people are broken by the stress, self-imposed or otherwise, of
modern life. Instead, we are in a new narrative world about the effects of poor interpersonal relationships and social isolation on health (this is the subject of the next chapter, "Healing Ties"). By the late 1980s, new best-sellers like The Trusting Heart: Great News about Type A Behavior and Anger Kills began to crowd out older favorites like Type A Behavior and Your Heart. In 2000, after late-night television host David Letterman underwent surgery for heart disease, a piece appeared in the popular press entitled "David Letterman's Cynical Heart." The writer, Robert Wright, put the matter to his readers straight:

What is wrong with David Letterman's heart? The official reason for his quintuple bypass last month was atherosclerosis—clogged arteries. Some observers, such as People magazine, go deeper in search of the explanation, citing "Type A," workaholic behavior. But I submit—with the support of actual scientific evidence—that what's wrong with Letterman's heart is the same thing that is wrong with his TV show: excessive cynicism.

Stress and the immune system

Before the end of the 1970s, it was generally felt that so-called stress-linked disorders (on the rise) and infectious disorders (on the decline) were distinct categories of illness. Throughout the early period of research on stress and disease, there seemed to be no obvious way in which stress could play any role in a person's susceptibility to, or recovery from, an infectious disease. What allowed a person to fight off infection was his or her immune system—a highly sophisticated biochemical and cellular defense system capable of recognizing and then protecting the body from a range of "foreign invaders" (bacteria or viruses). Medical science was persuaded that the immune system performed these functions in a wholly autonomous fashion, unaffected by input from the nervous system or any other part of the body. Nothing could deter it from its self-appointed path. Indeed, it had been found that one could take the relevant cells and substances out of the host body and put them in a petri dish with some toxin or foreign agent, and they would still move smoothly into action, just as they would under normal (in vivo) conditions.

During the late 1970s, however, a series of challenges emerged to this consensus understanding of the immune system. New evidence began to suggest that the immune system was not in fact wholly independent of other systems in the body after all, and that, in particular, its functions could be modulated in a range of previously unsuspected ways by inputs from the nervous system. In one key experiment (also discussed in chapter three), psychologist Robert Ader and immunologist Nicholas Cohen showed that the immune system of rats could be modified using a classical Pavlovian conditioning method: a pairing of saccharine water with a powerful immune-suppressing drug, cyclophosphamide. After conditioning, when rats drank the saccharine water alone, their immune systems continued to show signs of reduced functioning, and the animals continued to die. Of course, such findings made no sense in the framework of the time, but "as a psychologist," as Ader wryly recalled some years later, "I did not know there were no connections between the brain and the immune system."

In the late 1970s and 1980s, conditioning studies such as these from behavioral science began to be supplemented by other discoveries of functional connections between the immune system and the nervous system. For example, it was found that lymphocytes—part of the cellular defense system of the immune system—produce peptides that had previously been believed to reside only in the brain, suggesting that the two systems might be in some kind of chemical communication with each other. Other work began turning up evidence of hard-wired connections between the nervous system, thymus gland, spleen, lymph nodes, and bone marrow (all important sites of the immune system). It was Robert Ader who proposed that all this new work in fact represented the dawning of a new discipline, which in 1980 he christened "psychoneuro-immunology," or PNI. From the beginning, people who were drawn to the new field made links to stress and stress research. Part of the reason for this had to do with timing: PNI emerged as a new discipline just as AIDS—a disease that undermined immune functioning—was emerging as a terrifying new epidemic in the West.

The thinking here was clear: if the immune system could be influenced by information coming from the nervous system in general, then poten-
which allows the AIDS virus to begin to incubate once it has entered
the system. . . . It is no coincidence that the rise of AIDS has to a
large extent coincided with the recent upsurge of right-wing politi-
cal and religious repression of gays.76

In the late 1980s, the first AIDS drugs arrived—not drugs that could
cure AIDS, but drugs like AZT that did seem to significantly slow its
progression. These developments were followed in 1995 by the first true
pharmacological treatments for the disease—the so-called protease
inhibitors. With a growing focus on these developments, both medical
research and grassroots patient activism began to shift toward building
on the promise of conventional molecular approaches to fighting the
disease.

Nevertheless, the early years of the AIDS crisis created a lasting legacy
for the stories our culture would tell about the meaning of stress. They
taught us that the modern era had not escaped the age-old plagues of
infectious diseases after all; and they also taught us that the well-
recognized syndrome of modern life, stress, had a reach that had not pre-
viously been suspected. We learned that, by undermining immune
function, stress could compromise our ability to defend ourselves against
infection. In this sense, AIDS taught us that the modern era had been
doubly caught out.

By the second half of the 1990s, research on stress and the immune
system had begun to focus on other vulnerable populations. Did the so-
called Gulf War Syndrome result from the fact that highly stressed Amer-
ican soldiers, already facing combat during the first Iraq war in 1991,
were then given multiple powerful vaccines—as many as 24 different
kinds—that their stressed-out immune systems were unable to properly
defend against? In an aging population, were there particular stressors—
such as mourning the death of a spouse, or caring for a spouse with
Alzheimer's—that undermined already vulnerable immune systems?77
What about cancer? Did stress affect the ability of the immune system to
fight tumors in ways that accelerated the progress of the disease? Cer-
tainly, many cancer patients began to think so. In a series of interviews I
conducted with cancer patients some years ago, I found they spoke
frankly of their fears of stress. “If I find a way to handle it [stress],” one

We believe that the AIDS virus particularly strikes individuals and
groups who have been isolated by the dominant culture. . . . It is this
isolation, often internalized as self-hatred or lack of self-acceptance,
woman told me, "then I know it's not drilling holes in my brain, and I'm not wandering around worrying about it all day; that's depressing my immune system, that's maybe making me, et cetera, et cetera." And another said: "I'm trying not to, you know, to put myself under the pressure of worrying too much... because I don't want, you know, to have this product [cortisol] in my body... If I get angry, I go out and scream somewhere so I can get rid of it."  

With virtually any and every disease now potentially at risk of being made worse by stress, our "broken by modern life" lament has reached a new level of intensity. Perhaps this helps explain, at least in part, why in the 1980s and 1990s we see increasing attention paid to two new narratives of mind-body medicine. In its own way, each of these new narratives functions as a counterpoint to the "broken by modern life" lament. Even though we live in a harsh, fast-paced, and unnatural world filled with stress, these two new narratives tell us that there are ways to heal, to recover balance, to boost immunity, and to increase well-being. In the final two chapters of this book, I explore where these new narratives came from and how they function in our culture.

Chapter Five

HEALING TIES

Loneliness is a health hazard brought about by people losing the sense of community and family intimacy that has marked every other age.

—Rev. Dr. Gordon Moyes, sermon given on September 23, 2001

In 1998, the American magazine Newsweek published an article titled "Is Love the Best Drug?" The article included an inset with the following questions:

Do you feel isolated?
Women who said yes, were three-and-a-half times more likely to die of breast, ovarian or uterine cancer over a 17-year period.

Does your wife show you her love?
Men who said no suffered 50 percent more angina over a five-year period than those who said yes.

Are you close to your parents?
Male medical students who said no were more likely to develop cancer or mental illness years later.

Do you feel loved?
Heart patients who felt the least loved had 50 percent more arterial damage than those who felt the most loved.