LEARNED OPTIMISM

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was a strong parallel to our animal tests. One in ten of our animals also was helpless from the start.

Our satisfaction was quickly replaced by fierce curiosity. Who gives up easily and who never gives up? Who survives when his work comes to nothing or when he is rejected by someone he has loved long and deeply? And *why*? Clearly, some people don't prevail; like helpless dogs, they crumple up. And some do prevail; like the indomitable experimental subjects, they pick themselves up and, with life somewhat poorer, manage to go on and rebuild. Sentimentalists call this "a triumph of the human will" or "the courage to be"—as if such labels explained it.

Now, after seven years of experiments, it was clear to us that the remarkable attribute of resilience in the face of defeat need not remain a mystery. It was not an inborn trait; it could be acquired. Exploring the colossal implications of that discovery is what I have worked on for the last decade and a half.

Chapter Three

Explaining Misfortune

OXFORD UNIVERSITY is an intimidating place to give a lecture. It's not so much the spires and gargoyles, or even the knowledge that for over seven hundred years this place has led the intellectual world. It's Oxford's dons. They had turned out in force that day in April 1975 to hear the upstart American psychologist who was on sabbatical at Maudsley Hospital's Institute of Psychiatry in London and who had traveled to Oxford to talk about his research. As I arranged my speech on the rostrum and looked nervously out into the hall, I could see the ethologist Niko Tinbergen, a 1973 Nobel laureate. I could see Jerome Bruner, a celebrated academic who had recently come to Oxford from Harvard to take the Regius professorship in child development. There too was Donald Broadbent, the founder of modern cognitive psychology and the foremost "applied" social scientist in the world, and Michael Gelder, the dean of British psychiatry. And there was Jeffrey Gray, the renowned expert on anxiety and the brain. These were the greats of my profession. I felt like an actor who has been pushed out onto a stage to do a soliloquy before Guinness, Gielgud, and Olivier.

I launched into my speech about learned helplessness, and I was relieved to find the dons reasonably responsive, some of them nodding at my conclusions, most of them chuckling at my jokes. But in the middle of the front row was an intimidating stranger. He was not laughing at my jokes, and at several crucial points he conspicuously shook his head no. He seemed to be keeping a running total of mistakes I had unknowingly made.

At last the speech was finished. The applause was appreciative, and I was relieved, for the occasion was now over except for the polite platitudes

traditionally offered by the professor assigned to be the "discussant." The discussant, however, turned out to be the naysayer from the front row. His name was given as John Teasdale. I had heard the name before but knew almost nothing about him. Teasdale, it proved, was a new lecturer in the psychiatry department, fresh up from the psychology department at Maudsley Hospital in London.

"You really shouldn't be carried away by this enchanting story," he told the audience. "The theory is wholly inadequate. Seligman has glossed over the fact that one-third of his human subjects never become helpless. Why not? And of the ones who did, some bounced back right away; others never recovered. Some were helpless only in the very situation they learned to be helpless about; they no longer tried to escape from noise. Yet others gave up in brand-new situations. Let us ask ourselves why. Some lost self-esteem and blamed themselves for failing to escape the noise, while others blamed the experimenter for giving them unsolvable problems. Why?"

Baffled looks appeared on many of the dons' faces. Teasdale's piercing critique had thrown everything into doubt. Ten years of research, which had looked definitive to me when I began the talk, now seemed full of loose ends.

I was almost dumbstruck. I thought Teasdale was right, and I was embarrassed I hadn't thought of these objections myself. I mumbled something about this being the way science progresses and by way of rejoinder asked if Teasdale himself could solve the paradox he had set before me.

"Yes, I think I can," he said. "But this is neither the time nor the place."

I won't yet reveal Teasdale's solution, for I am going to ask you first to take a short test, one that will help you discover whether you are an optimist or a pessimist. Knowing Teasdale's answer to the question of why some people never become helpless might distort the way you take that test.

Test Your Own Optimism

Take as much time as you need to answer each of the questions. On average the test takes about fifteen minutes. There are no right or wrong answers. It is important that you take the test *before* you read the analysis which follows it, in order to assure that your answers will not be biased.

Read the description of each situation and vividly imagine it happening to you. You have probably not experienced some of the situations, but that doesn't matter. Perhaps neither response will seem to fit; go ahead anyway and circle either A or B, choosing the cause likelier to apply to

you. You may not like the way some of the responses sound, but don't choose what you think you *should* say or what would sound right to other people; choose the response you'd be likelier to have.

Circle only one response for each question. Ignore the letter and number codes for now.

1. The project you are in charge of is a great success.

	PsG
A. *I kept a close watch over everyone's work.*	1
B. *Everyone devoted a lot of time and energy to it.*	0

2. You and your spouse (boyfriend/girlfriend) make up after a fight.

	PmG
A. *I forgave him/her.*	0
B. *I'm usually forgiving.*	1

3. You get lost driving to a friend's house.

	PsB
A. *I missed a turn.*	1
B. *My friend gave me bad directions.*	0

4. Your spouse (boyfriend/girlfriend) surprises you with a gift.

	PsG
A. *He/she just got a raise at work.*	0
B. *I took him/her out to a special dinner the night before.*	1

5. You forget your spouse's (boyfriend's/girlfriend's) birthday.

	PmB
A. *I'm not good at remembering birthdays.*	1
B. *I was preoccupied with other things.*	0

6. You get a flower from a secret admirer.

	PvG
A. *I am attractive to him/her.*	0
B. *I am a popular person.*	1

7. You run for a community office position and you win.

	PvG
A. *I devote a lot of time and energy to campaigning.*	0
B. *I work very hard at everything I do.*	1

8. You miss an important engagement.

	PvB
A. *Sometimes my memory fails me.*	1
B. *I sometimes forget to check my appointment book.*	0

9. You run for a community office position and you lose.

	PsB
A. *I didn't campaign hard enough.*	1
B. *The person who won knew more people.*	0

10. You host a successful dinner.

	PmG
A. *I was particularly charming that night.*	0
B. *I am a good host.*	1

11. You stop a crime by calling the police.

	PsG
A. *A strange noise caught my attention.*	0
B. *I was alert that day.*	1

12. You were extremely healthy all year.

	PsG
A. *Few people around me were sick, so I wasn't exposed.*	0
B. *I made sure I ate well and got enough rest.*	1

13. You owe the library ten dollars for an overdue book.

	PmB
A. *When I am really involved in what I am reading, I often forget when it's due.*	1
B. *I was so involved in writing the report that I forgot to return the book.*	0

14. Your stocks make you a lot of money.

	PmG
A. *My broker decided to take on something new.*	0
B. *My broker is a top-notch investor.*	1

15. You win an athletic contest.

	PmG
A. *I was feeling unbeatable.*	0
B. *I train hard.*	1

16. You fail an important examination.

	PvB
A. *I wasn't as smart as the other people taking the exam.*	1
B. *I didn't prepare for it well.*	0

17. You prepared a special meal for a friend and he/she barely touched the food.

	PvB
A. *I wasn't a good cook.*	1
B. *I made the meal in a rush.*	0

18. You lose a sporting event for which you have been training for a long time.

	PvB
A. *I'm not very athletic.*	1
B. *I'm not good at that sport.*	0

19. Your car runs out of gas on a dark street late at night.

	PsB
A. *I didn't check to see how much gas was in the tank.*	1
B. *The gas gauge was broken.*	0

20. You lose your temper with a friend.

	PmB
A. *He/she is always nagging me.*	1
B. *He/she was in a hostile mood.*	0

21. You are penalized for not returning your income-tax forms on time.

	PmB
A. *I always put off doing my taxes.*	1
B. *I was lazy about getting my taxes done this year.*	0

22. You ask a person out on a date and he/she says no.

	PvB
A. *I was a wreck that day.*	1
B. *I got tongue-tied when I asked him/her on the date.*	0

23. A game-show host picks you out of the audience to participate in the show.

	PsG
A. *I was sitting in the right seat.*	0
B. *I looked the most enthusiastic.*	1

24. You are frequently asked to dance at a party.

	PmG
A. *I am outgoing at parties.*	1
B. *I was in perfect form that night.*	0

25. You buy your spouse (boyfriend/girlfriend) a gift and he/she doesn't like it.

	PsB
A. *I don't put enough thought into things like that.*	1
B. *He/she has very picky tastes.*	0

26. You do exceptionally well in a job interview.

	PmG
A. *I felt extremely confident during the interview.*	0
B. *I interview well.*	1

27. You tell a joke and everyone laughs.

	PsG
A. *The joke was funny.*	0
B. *My timing was perfect.*	1

28. Your boss gives you too little time in which to finish a project, but you get it finished anyway.

	PvG
A. *I am good at my job.*	0
B. *I am an efficient person.*	1

29. You've been feeling run-down lately.

	PmB
A. *I never get a chance to relax.*	1
B. *I was exceptionally busy this week.*	0

30. You ask someone to dance and he/she says no.

	PsB
A. *I am not a good enough dancer.*	1
B. *He/she doesn't like to dance.*	0

31. You save a person from choking to death.

	PvG
A. *I know a technique to stop someone from choking.*	0
B. *I know what to do in crisis situations.*	1

32. Your romantic partner wants to cool things off for a while.

	PvB
A. *I'm too self-centered.*	1
B. *I don't spend enough time with him/her.*	0

33. A friend says something that hurts your feelings.

	PmB
A. *She always blurts things out without thinking of others.*	1
B. *My friend was in a bad mood and took it out on me.*	0

34. Your employer comes to you for advice.

	PvG
A. *I am an expert in the area about which I was asked.*	0
B. *I am good at giving useful advice.*	1

35. A friend thanks you for helping him/her get through a bad time.

	PvG
A. *I enjoy helping him/her through tough times.*	0
B. *I care about people.*	1

36. You have a wonderful time at a party.

	PsG
A. *Everyone was friendly.*	0
B. *I was friendly.*	1

37. Your doctor tells you that you are in good physical shape.

	PvG
A. *I make sure I exercise frequently.*	0
B. *I am very health-conscious.*	1

38. Your spouse (boyfriend/girlfriend) takes you away for a romantic weekend.

	PmG
A. *He/she needed to get away for a few days.*	0
B. *He/she likes to explore new areas.*	1

39. Your doctor tells you that you eat too much sugar.

	PsB
A. *I don't pay much attention to my diet.*	1
B. *You can't avoid sugar, it's in everything.*	0

40. You are asked to head an important project.

	PmG
A. *I just successfully completed a similar project.*	0
B. *I am a good supervisor.*	1

41. You and your spouse (boyfriend/girlfriend) have been fighting a great deal.

	PsB
A. *I have been feeling cranky and pressured lately.*	1
B. *He/she has been hostile lately.*	0

42. You fall down a great deal while skiing.

	PmB
A. *Skiing is difficult.*	1
B. *The trails were icy.*	0

43. You win a prestigious award.

	PvG
A. *I solved an important problem.*	0
B. *I was the best employee.*	1

44. Your stocks are at an all-time low.

	PvB
A. *I didn't know much about the business climate at the time.*	1
B. *I made a poor choice of stocks.*	0

45. You win the lottery.

	PsG
A. *It was pure chance.*	0
B. *I picked the right numbers.*	1

46. You gain weight over the holidays and you can't lose it.

	PmB
A. *Diets don't work in the long run.*	1
B. *The diet I tried didn't work.*	0

47. You are in the hospital and few people come to visit.

	PsB
A. *I'm irritable when I am sick.*	1
B. *My friends are negligent about things like that.*	0

48. They won't honor your credit card at a store.

	PvB
A. *I sometimes overestimate how much money I have.*	1
B. *I sometimes forget to pay my credit-card bill.*	0

SCORING KEY

PmB_____ PmG_____

PvB_____ PvG_____

HoB_____

PsB_____ PsG_____

Total B_____ Total G_____

G – B_____

Put the test aside for the moment. You will score it later, as we go along through the rest of this chapter.

Explanatory Style

WHEN JOHN TEASDALE raised his objections after my speech at Oxford, I felt for a moment as if years of work might have been for nothing. I had no way of knowing at the time that the Teasdale challenge would result in the thing I wanted most of all—using our findings to help needful and suffering human beings.

Yes, Teasdale had granted in his rebuttal, two out of three people became helpless. But, he'd stressed, one out of three resisted: No matter what happened to them to make them helpless, they would not give up. It was a paradox, and until it was resolved, my theory could not be taken seriously.

Leaving the hall with Teasdale after the address, I asked him if he'd be willing to work with me to see if we could construct an adequate theory. He agreed, and we began meeting regularly. I'd come down from London and we'd take long walks through the manicured Oxford grounds and the tree-lined meadows called The Backs, talking out his objections. I asked for his solution to the problem he had posed, about who is vulnerable to helplessness and who is not. I learned that for Teasdale the solution came down to this: how people explain to themselves the bad things that happen to them. People who made certain kinds of explanations, he believed, are prey to helplessness. Teaching them to change these explanations might prove an effective way to treat their depression.

Every two months or so during this period in England, I made week-long trips back to the United States. On my first trip I returned to the University of Pennsylvania to find that my theory was being assaulted by challenges almost identical to Teasdale's. The challengers were two fearless students in my own research group, Lyn Abramson and Judy Garber.

Lyn and Judy had both been caught up in a vogue—enthusiasm for the work of a man named Bernard Weiner. In the late 1960s Weiner, a young social psychologist at the University of California's Los Angeles campus, had started to wonder why some people are high achievers and other people are not. He concluded that the way people think about the causes of successes and failures was what really mattered. His approach was called attribution theory. (That is, it asked to what factors people attributed their successes and failures.)

This view ran against the existing belief about achievement, the classic demonstration of which was called PREE—the partial reinforcement extinction effect. PREE is an old chestnut of learning theory. If you give a rat a food pellet every time he presses a bar, this is called "continuous

reinforcement"; the ratio of reward to effort is one-to-one, one pellet for one bar-press. If you then stop giving him food for pressing the bar ("extinction"), he'll press the bar three or four times and then quit completely, because he can see he's never getting fed anymore, since the contrast is so great. If, on the other hand, instead of one-for-one reinforcement, you give the rat "partial" reinforcement—say, an average of only one pellet for every five or ten times he presses—and then start extinction, he'll press the bar a hundred times before he gives up.

PREE had been demonstrated in the 1930s. It was the kind of experiment that made the reputation of B. F. Skinner and established him as the panjandrum of the behaviorists. The PREE principle, however, though it worked with rats and pigeons, didn't work very well with people. Some would give up as soon as extinction began; others would keep going.

Weiner had an idea why it didn't work with people: Those people who thought the cause of extinction was permanent (who concluded, for example, "The experimenter has decided not to reward me anymore") would give up right away, while those who thought the cause was temporary ("There's a short circuit in this damned equipment") would keep on going, because they thought the situation might change and the reward would resume. When Weiner performed this experiment, he found just the results he predicted. It was the explanations people made, and not the schedule of reinforcement they'd been on, which determined their susceptibility to PREE. Attribution theory went on to postulate that human behavior is controlled not just by the "schedule of reinforcement" in the environment but by an internal mental state, the explanations people make for why the environment has scheduled their reinforcements in this way.

This work had great impact in the field, especially upon younger scholars like Lyn Abramson and Judy Garber. It had shaped their whole outlook, and it was the lens through which they examined the theory of learned helplessness. When, during my first trip home from England, I told my colleagues what John Teasdale had said, Lyn and Judy replied that he was right and I was wrong, and the theory would have to be reformulated.

Lyn Abramson had shown up at Penn only the year before, as a first-year graduate student. She was immediately recognized as one of the best young psychology scholars anyone had seen in years. Outward signs to the contrary notwithstanding—her unworldly appearance, her patched jeans, her torn cotton shirts—she had a first-class mind. She first set out to discover which drugs produced learned helplessness in animals and which made helplessness less likely. She was trying to show that depression and helplessness were the same by showing they had the same brain-chemical mechanisms.

Judy Garber had dropped out of a clinical psychology program at a southern university during a time of personal crisis. Putting her life back together, she had volunteered to work in my lab unpaid for several years. She'd told me she wanted to show the world she could make a real contribution to psychology there, so she could eventually apply to a first-rate graduate program. The people in the lab always did a double take when they saw this fashionably dressed young woman with long, painted fingernails feeding white rats their daily chow. But Judy's ability, like Lyn's, soon became manifest, and before long she was involved in more advanced matters. That spring of 1975 Judy too was working on helplessness in animals. When the challenge from Teasdale came along, both Lyn and Judy dropped their own projects and began to work with us on reformulating the theory so it would apply better to people.

Throughout my career, I've never had much use for the tendency among psychologists to shun criticism. It's a longstanding tradition acquired from the field of psychiatry, with its medical authoritarianism and its reluctance to admit error. Going back at least to Freud, the world of the research psychiatrists has been dominated by a handful of despots who treat dissenters like invading barbarians usurping their domain. One critical word from a young disciple and he was banished.

I've preferred the humanistic tradition. To the scientists of the Renaissance, your critic was really your ally, helping you advance upon reality. Critics in science are not like drama critics, determining flops and successes. Criticism to scientists is just another means of finding out whether they're wrong, like running another experiment to see if it confirms or refutes a theory. Along with the advocacy principle of the courtroom, it is one of the best ways human beings have evolved to get closer to the truth.

I had always stressed to my students the importance of welcoming criticism. "I want to be told," I had always said. "In this lab, the payoff is for originality, not toadyism." Now Abramson and Garber, not to mention Teasdale, had told me, and I was not about to bristle with hostility. I promptly enlisted the three of them as allies in making the theory better. I argued with my two brilliant students, sometimes for twelve hours without a break, working to make my theory incorporate their objections.

I launched into two sets of conversations. The first, in Oxford, was with Teasdale. John's commitment was to therapy, and so, as we discussed how to change the theory, we explored the possibility of treating depression by changing the ways depressive people explained to themselves the causes of bad events. The second, with Abramson and Garber back in Philadelphia, took its character from Lyn's strong interest in the etiology—the causes—of mental illness.

Teasdale and I started writing a manuscript together, on how therapy for helplessness and depression should be based on changing people's explanations. Concurrently, Abramson and I started one on how people's explanatory style could cause helplessness and depression.

At that moment, as it happened, the editor-in-chief of the *Journal of Abnormal Psychology* contacted me. The learned-helplessness controversy, he said, had generated a great many submissions to the journal, many of them attacks of just the sort John and Lyn and Judy had made. The editor was planning to devote a whole issue of the journal to the battle, and he asked if I would write one of the articles. I agreed and then persuaded Lyn and John to let me merge the two articles we had been working on separately. I felt it important that when the new theory got this very prominent airing, it would already contain our responses to the attacks.

Our approach drew on Bernard Weiner's attribution theory, but it differed from Weiner in three ways. First, we were interested in *habits* of explanation, not just the single explanation a person makes for a single failure. We claimed there was such a thing as a *style* of explanation: We all had a style of seeing causes, and if given a chance we'd impose this habit on our world. Second, where Weiner had talked about two dimensions of explanation—permanence and personalization—we introduced another—pervasiveness—to make three. (I'll soon explain these concepts.) Third, while Weiner was interested in achievement, we were focused on mental illness and therapy.

The special issue of the *Journal of Abnormal Psychology* was published in February 1978. It contained the article by Lyn, John, and me, answering in advance the main objections to the original learned-helplessness theory. It was well received and itself generated even more research than the original helplessness theory had. We went on to devise the questionnaire you took earlier in this chapter. With the creation of the questionnaire, explanatory style could be easily measured and our approach applied, out in the real world beyond the lab, to actual human problems.

Each year the American Psychological Association gives the Early Career Award to a psychologist who attains "distinguished scientific achievement" within the first ten years of his career. I had won it in 1976 for the theory of helplessness. Lyn Abramson won it in 1982 for the reformulation of the theory of helplessness.

Who Never Gives Up?

How do *you* think about the causes of the misfortunes, small and large, that befall you? Some people, the ones who give up easily, habitually say

of their misfortunes: "It's me, it's going to last forever, it's going to undermine everything I do." Others, those who resist giving in to misfortune, say: "It was just circumstances, it's going away quickly anyway, and, besides, there's much more in life."

Your habitual way of explaining bad events, your explanatory style, is more than just the words you mouth when you fail. It is a habit of thought, learned in childhood and adolescence. Your explanatory style stems directly from your view of your place in the world—whether you think you are valuable and deserving, or worthless and hopeless. It is the hallmark of whether you are an optimist or a pessimist.

The test you took earlier in this chapter is designed to reveal your explanatory style.

THERE ARE three crucial dimensions to your explanatory style: permanence, pervasiveness, and personalization.

Permanence:

PEOPLE WHO give up easily believe the causes of the bad events that happen to them are permanent: The bad events will persist, will always be there to affect their lives. People who resist helplessness believe the causes of bad events are temporary.

PERMANENT *(Pessimistic):*	TEMPORARY *(Optimistic):*
"I'm all washed up."	"I'm exhausted."
"Diets never work."	"Diets don't work when you eat out."
"You always nag."	"You nag when I don't clean my room."
"The boss is a bastard."	"The boss is in a bad mood."
"You never talk to me."	"You haven't talked to me lately."

1. If you think about bad things in *always's* and *never's* and abiding traits, you have a permanent, pessimistic style. If you think in *sometimes's* and *lately's*, if you use qualifiers and blame bad events on transient conditions, you have an optimistic style.

Now turn back to your test. Look at the eight items marked "PmB" (which stands for *Per*manent *B*ad), the questions numbered 5, 13, 20, 21, 29, 33, 42, and 46.

These tested how permanent you tend to think the causes of bad events are. Each one with a *0* after it is optimistic. Each one followed by a *1* is pessimistic. So, for example, if you chose "I'm not good at remembering birthdays" (question 5) rather than "I was preoccupied with other things" to explain why you forgot your spouse's birthday, you chose a more permanent, and therefore pessimistic, cause.

Total the numbers at the right-hand margin of the PmB questions. Write your total on the PmB line in the scoring key on page 39.

If you totaled 0 or 1, you are very optimistic on this dimension;
2 or 3 is a moderately optimistic score;
4 is average;
5 or 6 is quite pessimistic; and
if you scored 7 or 8, you will find Part Three of this book, "Changing: From Pessimism to Optimism," very helpful.

Here's why the permanence dimension matters so much—and here is our answer to John Teasdale's challenge about why some people stay helpless forever while others bounce back right away.

Failure makes everyone at least *momentarily* helpless. It's like a punch in the stomach. It hurts, but the hurt goes away—for some people almost instantly. These are the people whose score totals 0 or 1. For others, the hurt lasts; it seethes, it roils, it congeals into a grudge. These people score 7 or 8. They remain helpless for days or perhaps months, even after only small setbacks. After major defeats they may never come back.

THE OPTIMISTIC STYLE of explaining good events is just the opposite of the optimistic style of explaining bad events. People who believe good events have permanent causes are more optimistic than people who believe they have temporary causes.

TEMPORARY *(Pessimistic):*	PERMANENT *(Optimistic):*
"It's my lucky day."	"I'm always lucky."
"I try hard."	"I'm talented."
"My rival got tired."	"My rival is no good."

Optimistic people explain good events to themselves in terms of permanent causes: traits, abilities, *always's*. Pessimists name transient causes: moods, effort, *sometimes's*.

You probably noticed that some of the questions on the test (exactly half of them, in fact) were about good events; for example, "Your stocks

make you a lot of money." Score those marked "PmG" (*Perm*anent *G*ood): 2, 10, 14, 15, 24, 26, 38, and 40.

The ones with a *1* following them are the permanent, optimistic answers. Total the numbers on the right-hand side. Write the total on the line in the scoring key marked "PmG" (page 39).

If your total is 7 or 8, you are very optimistic about the likelihood of good events continuing;
6 is a moderately optimistic score;
4 or 5 is average;
3 is moderately pessimistic; and
0, 1, or 2 is very pessimistic.

People who believe good events have permanent causes try even harder after they succeed. People who see temporary reasons for good events may give up even when they succeed, believing success was a fluke.

Pervasiveness: Specific vs. Universal

PERMANENCE is about time. Pervasiveness is about space.

Consider this example: In a large retailing firm, half the accounting department was fired. Two of the fired accountants, Nora and Kevin, both became depressed. Neither could bear to look for another job for several months, and both avoided doing their income tax or anything else that reminded them of accounting. Nora, however, remained a loving and active wife. Her social life went on normally, her health stayed robust, and she continued to work out three times a week. Kevin, in contrast, fell apart. He ignored his wife and baby son, spending all his evenings in sullen brooding. He refused to go to parties, saying he couldn't bear to see people. He never laughed at jokes. He caught a cold that lasted all winter, and he gave up jogging.

Some people can put their troubles neatly into a box and go about their lives even when one important aspect of it—their job, for example, or their love life—is suffering. Others bleed all over everything. They catastrophize. When one thread of their lives snaps, the whole fabric unravels.

It comes down to this: People who make *universal* explanations for their failures give up on everything when a failure strikes in one area. People who make *specific* explanations may become helpless in that one part of their lives yet march stalwartly on in the others.

Here are some universal and some specific explanations of bad events:

UNIVERSAL *(Pessimistic)*	SPECIFIC *(Optimistic)*
"All teachers are unfair."	"Professor Seligman is unfair."
"I'm repulsive."	"I'm repulsive to him."
"Books are useless."	"This book is useless."

Nora and Kevin had the same high score on the permanence dimension of the test. They were both pessimists in this respect. When they were fired, they both remained depressed for a long time. But they had opposite scores on the pervasiveness dimension. Kevin believed the firing would undermine everything he tried; he thought he was no good at anything. Nora believed bad events have very specific causes. When she was fired, she thought she was no good at accounting.

On those long Oxford walks with John Teasdale, we took the paradox he cited—about who gives up and who doesn't—broke it into three parts, and made three predictions about who gives up and who doesn't:

The first was that the *permanence* dimension determines how long a person gives up for. Permanent explanations for bad events produce long-lasting helplessness and temporary explanations produce resilience.

The second prediction was about *pervasiveness*. Universal explanations produce helplessness across many situations and specific explanations produce helplessness only in the troubled area. Kevin was a victim of the pervasiveness dimension. Once fired he believed the cause was universal, and he behaved as though disaster had struck all aspects of his life. Kevin's pervasiveness score revealed he was a catastrophizer. The third prediction concerned *personalization* and you will read about it shortly.

Do you catastrophize? Did you catastrophize in this test? For example, in answering question 18, did you label the cause of losing as your not being very athletic (universal) or your not being good at that sport (specific)? Take each question marked "PvB" (*Pv*asiveness *B*ad): 8, 16, 17, 18, 22, 32, 44, and 48.

Add the numbers at the right-hand margin and write the total on the scoring-key line marked "PvB" (page 39).

A total of 0 or 1 is very optimistic;
2 or 3 is a moderately optimistic score;
4 is average;
5 or 6 is moderately pessimistic; and
7 or 8 is very pessimistic.

Now for the converse. *The optimistic explanatory style for good events is opposite that for bad events.* The optimist believes that bad events have

specific causes, while good events will enhance everything he does; the pessimist believes that bad events have universal causes and that good events are caused by specific factors. When Nora was offered temporary work back at the company, she thought: "They finally realized they can't get along without me." When Kevin got the same offer he thought: "They must really be shorthanded."

SPECIFIC *(Pessimistic)*	UNIVERSAL *(Optimistic)*
"I'm smart at math."	"I'm smart."
"My broker knows oil stocks."	"My broker knows Wall Street."
"I was charming to her."	"I was charming."

Score your optimism for pervasiveness of good events. Look at each item marked "PvG": 6, 7, 28, 31, 34, 35, 37, and 43.

Each answer followed by a *0* is pessimistic (specific). When asked in question 35 for your reaction to a friend's thanks for helping him, did you answer, "I enjoy helping him through tough times" (specific and pessimistic) or "I care about people" (universal and optimistic)?

Total your score and write it on the line labeled "PvG."

A score of 7 or 8 is very optimistic;
6 is a moderately optimistic score;
4 or 5 is average;
3 is moderately pessimistic; and
0, 1, or 2 is very pessimistic.

The Stuff of Hope

HOPE HAS largely been the province of preachers, of politicians, and of hucksters. The concept of explanatory style brings hope into the laboratory, where scientists can dissect it in order to understand how it works.

Whether or not we have hope depends on two dimensions of our explanatory style: pervasiveness and permanence. Finding temporary and specific causes for misfortune is the art of hope: Temporary causes limit helplessness in time, and specific causes limit helplessness to the original situation. On the other hand, permanent causes produce helplessness far into the future, and universal causes spread helplessness through all your endeavors. Finding permanent and universal causes for misfortune is the practice of despair.

HOPELESS	HOPEFUL
"I'm stupid."	"I'm hung over."
"Men are tyrants."	"My husband was in a bad mood."
"It's five in ten this lump is cancer."	"It's five in ten this lump is nothing."

Perhaps the single most important score from your test is your hope (HoB) score. Take your "PvB" total and add it to your "PmB" total. This is your hope score for bad events.

If it is 0, 1, or 2, you are extraordinarily hopeful;
3, 4, 5, or 6 is a moderately hopeful score;
7 or 8 is average;
9, 10, or 11 is moderately hopeless; and
12, 13, 14, 15, or 16 is severely hopeless.

People who make permanent *and* universal explanations for their troubles tend to collapse under pressure, both for a long time and across situations.

No other single score is as important as your hope score.

Personalization: Internal vs. External

THERE IS ONE final aspect of explanatory style: *personalization.*

I once lived with a woman who blamed everything on me. Bad restaurant meals, late flights, even imperfect creases in her dry-cleaned trousers. "Sweetheart," I said one day, in exasperation after being bawled out because her hair dryer didn't work, "you are the most external person for bad events I've ever met."

"Yes," she shouted, "and it's all your fault!"

When bad things happen, we can blame ourselves (internalize) or we can blame other people or circumstances (externalize). People who blame themselves when they fail have low self-esteem as a consequence. They think they are worthless, talentless, and unlovable. People who blame external events do not lose self-esteem when bad events strike. On the whole, they like themselves better than people who blame themselves do.

Low self-esteem usually comes from an internal style for bad events.

INTERNAL *(Low self-esteem)*	EXTERNAL *(High self-esteem)*
"I'm stupid."	"You're stupid."
"I have no talent at poker."	"I have no luck at poker."
"I'm insecure."	"I grew up in poverty."

Take a look at your PsB (*P*ersonalization *B*ad) scores; the questions are 3, 9, 19, 25, 30, 39, 41, and 47.

The items followed by a 1 are pessimistic (internal, or personal). Total your score and write it in the PsB box in the scoring key on page 39.

A score of 0 or 1 indicates very high self-esteem;
2 or 3 indicates moderate self-esteem;
4 is average;
5 or 6 indicates moderately low self-esteem; and
7 or 8 indicates very low self-esteem.

Of the three dimensions of explanatory style, personalization is the easiest to understand. After all, one of the first things a child learns to say is "He did it, not me!" Personalization is also the easiest dimension to overrate. It controls only how you *feel* about yourself, but pervasiveness and permanence—the more important dimensions—control what you *do*: how long you are helpless and across how many situations.

Personalization is the only dimension simple to fake. If I tell you to talk about your troubles in an external way now, you will be able to do it—even if you are a chronic internalizer. You can chatter along, pretending to blame your troubles on others. However, if you are a pessimist and I tell you to talk about your troubles as having temporary and specific causes, you will not be able to do it (unless you have mastered the techniques of Part Three, "Changing: From Pessimism to Optimism").

Here's one last piece of information for you, before you get your totals: *The optimistic style of explaining good events is the opposite of that used for bad events: It's internal rather than external.* People who believe they cause good things tend to like themselves better than people who believe good things come from other people or circumstances.

EXTERNAL *(Pessimistic)*	INTERNAL *(Optimistic)*
"A stroke of luck. . . ."	"I can take advantage of luck."
"My teammates' skill. . . ."	"My skill. . . ."

Your last score is PsG, *P*ersonalization *G*ood. The relevant questions are 1, 4, 11, 12, 23, 27, 36, and 45.

The items followed by a *0* are external and pessimistic. Those followed by a *1* are internal and optimistic.

Write your total score on the line marked "PsG" in the scoring key on page 39.

A score of 7 or 8 is very optimistic;
6 is a moderately optimistic score;
4 or 5 is average;
3 is moderately pessimistic; and
0, 1, or 2 is very pessimistic.

You can now compute your overall scores.

First, add the three *B*'s (PmB + PvB + PsB). This is your Total B (bad event) score.

Next, add your three G scores (PmG + PvG + PsG). This is your Total G (good event) score.

Subtract B from G. This is your overall score (G − B).

Here is what your totals mean:

If your B score is from 3 to 6, you are marvelously optimistic and you won't be needing the "Changing" chapters;
If it's in the 6 to 9 range, you're moderately optimistic;
10 or 11 is about average;
12 to 14 is moderately pessimistic; and
anything above 14 cries out for change.

If your G score is 19 or above, you think about good events very optimistically;
if it's from 17 to 19 your thinking is moderately optimistic;
14 to 16 is about average;
11 to 13 indicates that you think quite pessimistically; and
a score of 10 or less indicates great pessimism.

Finally, if your G − B score is above 8, you are very optimistic across the board;
if it's from 6 to 8 you're moderately optimistic;
3 to 5 is average;
1 or 2 is a moderately pessimistic score; and
a score of 0 or below is very pessimistic.

Caveat about Responsibility

ALTHOUGH there are clear benefits to learning optimism—there are also dangers. Temporary? Local? That's fine. I want my depressions to be short and limited. I want to bounce back quickly. But external? Is it right that I should blame others for my failures?

Most assuredly we want people to own up to the messes they make, to be responsible for their actions. Certain psychological doctrines have damaged our society by helping to erode personal responsibility: Evil is mislabeled insanity; bad manners are shucked off as neurosis; "successfully treated" patients evade their duty to their families because it does not bring them personal fulfillment. The question is whether or not changing beliefs about failure from internal to external ("It's not my fault . . . it's bad luck") will undermine responsibility.

I am unwilling to advocate any strategy that further erodes responsibility. I don't believe people should change their beliefs from internal to external wholesale. Nevertheless, there is one condition under which this usually should be done: depression. As we will see in the next chapter, depressed people often take much more responsibility for bad events than is warranted.

There is a deeper matter to deal with here: the question of why people should own up to their failures in the first place. The answer, I believe, is that we want people to change, and we know they will not change if they do not assume responsibility. If we want people to change, internality is not as crucial as the permanence dimension is. If you believe the cause of your mess is permanent—stupidity, lack of talent, ugliness—you will not act to change it. You will not act to improve yourself. If, however, you believe the cause is temporary—a bad mood, too little effort, overweight—you can act to change it. If we want people to be responsible for what they do, then yes, we want them to have an internal style. More important, people must have a temporary style for bad events—they must believe that whatever the cause of the bad event, it can be changed.

What If You Are a Pessimist?

IT MATTERS a great deal if your explanatory style is pessimistic. If you scored poorly, there are four areas where you will encounter (and probably already have encountered) trouble. First, as we will see in the next chapter, you are likely to get depressed easily. Second, you are probably achieving less at work than your talents warrant. Third, your physical health—and your immune function—are probably not what they should be, and this may get even worse as you get older. Finally, life is not as pleasurable as it should be. Pessimistic explanatory style is a misery.

If your pessimism score is in the average range, it will not be a problem in ordinary times. But in crisis, in the hard times life deals us all, you will likely pay an unnecessary price. When these events strike, you may find yourself getting more depressed than you should. How are you likely to react when your stocks go down, when you are rejected by someone you love, when you don't get the job you want? As the next chapter shows, you will become very sad. The zest will go out of living. It will be very hard for you to get started on anything challenging. The future will look bleak to you. And you will be likely to feel this way for weeks or even months. You have probably felt this way several times already; most people have. This is so common that textbooks call it a normal reaction.

The commonness of being knocked flat by troubles, however, does not mean it is acceptable or that life has to be this way. If you use a different explanatory style, you'll be better equipped to cope with troubled times and keep them from propelling you toward depression.

That hardly exhausts the prospective benefits of a new explanatory style. If you have an average degree of pessimism, you are going through life at a level somewhat lower than your talents would otherwise permit you. As you will see in chapters six, eight, and nine, even an average degree of pessimism drags down your performance in school, on the job, and in sports. This is true of physical health as well. Chapter ten illustrates how even if you are just ordinarily pessimistic, your health may not be up to par. You will likely suffer the chronic diseases of aging earlier and more severely than necessary. Your immune system may not work as well as it should; you will probably suffer more infectious diseases and recuperate more slowly.

If you use the techniques of chapter twelve, you will be able to choose to raise your everyday level of optimism. You should find yourself reacting to the normal setbacks of life much more positively and bouncing back from life's large defeats much more briskly than you did before. You should achieve more on the job, in school, and on the playing field. And in the long run, even your body should serve you better.

Chapter Nine

Sports

I CAN'T ABIDE the eleven o'clock news. It's not just the fact that models read the stuff. It's what they read and the film clips they show. A fire in North Philadelphia was the big story last night. I was treated to thirty seconds of flames shooting out of windows, one minute of interviews with the survivors, who were mostly bewailing their lost possessions, and one minute with the sobbing wife of a fireman overcome by smoke inhalation. Don't misunderstand: It was a tragic event and deserved some coverage. But the producers of the eleven o'clock news seem to believe that the American public consists mostly of morons interested only in tear-jerking anecdotes and incapable of understanding statistics and analysis. So what's really newsworthy about that fire is not reported: the astonishingly high rate of fires in the slums at the start of the heating season; the decrease in the frequency of smoke inhalation among firefighters; the low percentage of full claims on fire damage paid by insurance companies—in short, the statistics that get at the underlying causes of particular sensational events.

Bertrand Russell said that the mark of a civilized human being is the ability to read a column of numbers and then weep. Is the American public as "uncivilized" as the news producers think? Are we incapable of understanding statistical arguments or do we only understand anecdotes?

You only have to spend an afternoon in any baseball park in America to know how badly the general public's capacity to appreciate and enjoy statistics has been underestimated by our tastemakers. Every child over six in the park knows what a .300 hitter is and knows Tony Gwynn is more likely to get a hit than Juan Samuel is. Every beer-guzzling adult in the park knows what an earned run average is, even though this is a more

complicated statistic than the basic statistics on fire-insurance claims and the dangers of oil-heater start-ups.

Americans delight in sports statistics. We positively revel in probabilities—when they concern José Canseco or Dwight Gooden or Larry Bird. They are the grist for sports betting, a business now rivaling traditional American industry in gross take. Bill James and the Elias Sports Bureau write massive, ingenious compilations of baseball statistics that sell tens of thousands of copies each year. And it is not just the general public that loves this stuff. It makes for serious scientific reading as well, for professional sports is now one of the best quantitatively documented activities in the world. Theories that make fine-grained predictions about human capacity can use these veritable almanacs of sport to test themselves.

This is true of explanatory-style theory, and my students and I have spent thousands of hours reading the sports pages and testing my theory against sports statistics. What does my view of optimism say about the playing field?

Quite simply, there are three basic predictions for sports. First, everything else being equal, the individual with the more optimistic explanatory style will go on to win. He will win because he will try harder, particularly after defeat or under stiff challenge.

Second, the same thing should hold for teams. If a team can be characterized by its level of optimism, the more optimistic team should win—if talent is equal—and this phenomenon should be most apparent under pressure.

Third, and most exciting, when athletes' explanatory style is changed from pessimistic to optimistic, they should win more, particularly under pressure.

The National League

CONSIDER the great American pastime—baseball. I confess, at the outset, that I love this kind of science. In spite of innumerable hours squinting at microfilm, in spite of too many midnight sessions poring over endless columns of batting averages, in spite of attempts to invent new statistics only to find them worthless or redundant, this research is more fun than any I have ever done. Not just because I love baseball (I can be found in the third row behind home plate at most of the Phillies' home games), but because these findings take us to the very heart of human success and

failure. They tell us how the "agony of defeat" and the "thrill of victory" really work.

But stating the predictions of the theory is much easier than seeing if they are right. There are three problems.

First, does a team—a group of individuals—have an explanatory style? All our past work had shown that pessimistic *individuals* do worse, but is there such a thing as a pessimistic *team*? And does a pessimistic team do worse? To answer these questions, we use the CAVE technique and study for an entire season every sports-page quote including a causal statement for each individual on a team. Because sportswriters focus on bad events, such quotes abound in the daily sports section of every newspaper. We use raters blind to who said it and what team they are on, and we compute a profile for each player. We also study the manager. Finally we average all the individuals and get a team explanatory style. We then compare all the teams in the league.

The second problem concerns the sports-page quotes themselves. We don't have the clout or the resources to interview all the leading baseball players ourselves. So we rely on what is reported in the sports pages of hometown newspapers and in that marvelous gold mine, *Sporting News*. Now, what a player says to a reporter is pretty degraded scientific material. The quote itself may be inaccurate, hyped by the reporter to make more exciting copy. The player may not say what he means. He may try to shift or take on the blame. He may try to be overmodest or overmacho for the sake of appearances. So we don't know if the quotes accurately reflect explanatory style. The only way to find out is to "bootstrap": If the study does actually predict how a team goes on to do, the quotes must have had validity. If it doesn't predict, either the theory is wrong or the quotes are not valid indicators of underlying optimism.

That's not the only difficulty with sports-page quotes. There is the sheer volume of material to wade through to discover a team explanatory style. In our National League study, we read all of the sports pages in the hometown papers of each of the twelve National League teams for the whole 1985 baseball season, April through October. Because the results looked so fascinating, we then repeated the study for 1986. All in all we "CAVEd" about fifteen thousand pages of sports reporting.

The third problem is how to show that the causal arrow goes from optimism to victory and not the other way around. The New York Mets, as you will see in a moment, were a very optimistic team in 1985. They were also a very good team in 1985, losing out to the St. Louis Cardinals in a heart-stopping pennant race in the last week. Did they do well because they were optimistic or did their optimism arise because they were doing

so well? To untangle this, we must predict from optimism in one season to victory in the next season, correcting of course for personnel changes. Players who leave the team are omitted from the explanatory-style profile.

But even this isn't enough. We must also correct for how well the team did in the first season. Take the Mets. They were the most optimistic team in the National League in 1985. They also had the second-best record (98 wins and 64 losses). They went on, as we would predict, to do even better in 1986. Was this because they were optimistic (as measured by their 1985 quotes) or merely because they had so much talent (as reflected in their 1985 win-loss record)? To find out we have to correct for prior win-loss record—to hold it "statistically constant"—and see if optimism predicts success above and beyond prior success. This is exactly what we did in our study of academic success, when we asked if optimism predicted college grades better than high-school grades and SATs did.

We also wanted to know if optimism works its magic by governing how a team does under pressure, as the theory claims. My son, David, went through the box scores of every game (there are 972 games a season in the National League), and we invented statistic after statistic on pressure situations. After we were done, we found that the "Elias," one of the statistical almanacs of baseball, computed even better statistics on late-inning pressure. So we threw ours away and used theirs. Elias tells us how the hitters on a team do in the last three innings of a close game. So we predicted that teams optimistic in 1985 would in 1986 have higher batting averages under late-inning pressure than would teams that were pessimistic in 1985. Again we needed to show that this was above and beyond their overall batting averages, by correcting statistically for hitting when they were not under pressure.

The 1985 Mets and Cardinals in 1986

TWO GREAT TEAMS battled neck and neck for the Eastern Division pennant in 1985. For the whole season, we grabbed each causal statement that newspapers quoted individual Mets and Cardinals as making, and rated it. When the season was over we took grand totals.

Here's what the Mets had to say as the season went on. I will attach actual CAVE numbers to each quote. They range from 3 (very temporary, specific, and external) to 21 (completely permanent, pervasive, and personalized). Numbers in the 3 to 8 range are very optimistic. Numbers above 13 are very pessimistic.

Start with manager Davey Johnson, asked why his team lost:

"We lost because they [the opponents] made the plays tonight" (external—"they"; temporary—"tonight"; specific—tonight's opponent: 7).

Their sluggers: First, left fielder George Foster: "I got a fan pissed off" because "It must have been one of those days" (7).

Right fielder Darryl Strawberry, asked why he missed a fly ball: "The ball really carried. I just about got my glove on it"(6).

Strawberry on why the Mets were shut out: "Sometimes you go through these kinds of days" (8).

First baseman Keith Hernandez, on why the Mets won only two games on the road: "All the time on the road began to tax us" (8).

Hernandez again, on why the Mets' lead had shrunk to half a game: "They [the opponents] made a bad play and came up smelling like a rose" (3).

Star pitcher Dwight Gooden, explaining why a batter hit a home run off him: "He hit well tonight" (7).

Gooden on why the Mets lost: "It was one of those days" (7); "It wasn't my day" (8); "The heat was too much" (8).

Gooden threw a wild pitch because "Some moisture must have gotten on the ball" (3).

You can probably see what all this adds up to. When the Mets do badly, it's just for today, it's just these opponents, and it's not our fault. They hereby become a textbook example of optimistic explanatory style in sports. As a group, they had the most optimistic style of any National League team in 1985. Their average score for bad events was 9.39, optimistic enough for them to be successful life-insurance salesmen.

Listen now to the St. Louis Cardinals, the team that beat them in the stretch and went on to win the playoffs, then lost a heartbreaking World Series to Kansas City on the strength of a bad ruling by an umpire. The Cardinals were loaded with even more raw talent than the Mets. The Mets batted .257 for the year, whereas the Cardinals batted .264; the Cardinal pitchers had a slightly better earned run average than the Mets.

Manager Whitey Herzog (arguably the most brilliant in baseball today): The team lost because "We can't hit. What the Hell, let's face it" (permanent, pervasive, and personalized: 20).

Herzog on why the press talks much more to Pete Rose (then the playing manager of the Cincinnati Reds) than to him: "What do you expect? He has 3800 more hits than I have" (permanent, pervasive, personalized: 14).

Herzog on why the team had trouble all year in games following days off: "It's a mental thing. We were too relaxed" (14).

The 1985 National League batting champion, Willie McGee, said he

didn't steal as many bases as he should have because "I don't have the expertise" (16).

McGee played poorly in 1984 because "Mentally, I was bummed out. I didn't know how to accept struggling" (15).

Slugger Jack Clark on dropping a fly ball: "It was a real catchable ball. I just didn't catch it" (12).

Second baseman Tom Herr said his batting average dropped twenty-one points because "I am having a lot of trouble concentrating and keeping my mind on the job" (17).

What we have here is a portrait of a superbly talented team with a pessimistic explanatory style. This is part of what coaches mean when they say an athlete has a "poor attitude"; indeed, it may be the only active ingredient. Statistically, the Cardinals had a below-average explanatory style for bad events, 11.09, ninth out of the twelve teams. Our theory claims that a team that does very well in a given season in spite of a poor explanatory style must be extremely talented to make up for this handicap.

And the theory predicts what should happen in the next season: As far as these two teams were concerned, the Mets should have excelled and the Cardinals should have deteriorated, relative to 1985.

This is just what happened. In 1986, the Mets were a wonder team. Their win percentage went up to .667 (from .605), they won the division pennant and the playoffs, and they came from behind in a historic finish to steal the World Series from the Boston Red Sox. Their overall batting average in 1986 was a respectable .263, but under late-inning pressure it went up to a superb .277.

The Cardinals fell apart in 1986. They won only 49 percent of their games, finishing nowhere. In spite of massive talent, they batted only .236 overall and deteriorated to a miserable .231 under pressure.

Using their quotes, we computed the 1985 explanatory style for the twelve National League teams. Statistically, in 1986, optimistic teams bettered their 1985 win-loss records, and pessimistic teams did worse than they had in 1985. Teams optimistic in 1985 hit well under pressure in 1986, whereas the hitting of teams pessimistic in 1985 fell apart under pressure in 1986, compared to how well both kinds of teams normally hit.

In general I do not become convinced of my own work's validity until I have repeated it. We repeated the whole study the next year to see if explanatory style could again predict how the National League teams would do, taking all the quotes for 1986 in order to predict 1987 performance. The results were basically the same. The optimistic teams do better the next year than their previous win-loss records would suggest, and the pessimistic teams do worse. Under pressure, the optimistic teams hit well and the pessimistic teams hit poorly.

The National Basketball Association

BASKETBALL does two things for us that baseball doesn't. First, there are fewer players, so "CAVEing" becomes a little less labor-intensive. Second, and most important, basketball is exquisitely handicapped. For each and every game, handicappers predict not only who should win but by how much. The "how much" is called the point spread. So, if the New Jersey Nets were playing the Boston Celtics on any evening in the mid-1980s, Boston would have been favored to win. But you couldn't bet on the Celtics just to win, since they were so likely to win that no one was willing to bet against them. So Boston would, in addition, be predicted to win by, say, nine points, and you could bet on the Celtics to "cover" the spread—that is, to win by nine or more points. If the Celtics did so, you doubled your money, but if they won by fewer than nine points (or, freakishly, lost) you lost your money. So exquisitely skilled are the handicappers that half the bettors will pick the Celtics to cover and half will pick the Nets.

I don't bet on sports—in fact, I have made only one substantial bet in my life (you'll read about it in chapter eleven)—so it's not the betting that interests me. Rather, the spread is a terrific scientific convenience because it equates the two teams for all known factors, such as skill, home-court advantage, who is injured, recent slumps, and so on. Explanatory-style theory claims that there is an additional factor which no one takes into account, the optimism of the team, and that this will determine how a team fares under pressure—above and beyond all the known factors. The more optimistic team should do better than handicapping predicts, and the less optimistic team worse. This should only happen under adverse circumstances, however; for example, after a loss in the previous game. This means that the optimistic teams should tend to cover the point spread in the game following a loss while pessimistic teams should tend to fail to cover the point spread after a loss.

The Boston Celtics and the New Jersey Nets

IN THE SECOND most labor-intensive study I ever did, we read the hometown sports pages for the NBA Atlantic Division teams for all of

1982–83, computed the explanatory style for each team, and used the optimism level to predict how the teams would fare under pressure in 1983–84. We then repeated the study, using 1983–84 sports-page explanatory style to predict the 1984–85 season. All in all we read over ten thousand sports pages, and we assembled about a hundred event-explanation quotes for each team.

Let's look at the two extremes. First, some representative quotes from the Boston Celtics explaining bad events:

A loss: "The fans [at the opponents' home court] are by far the noisiest and most outrageous crowd in the NBA" (9).

Another loss: "Strange things just happen to us there [opponents' home court]" (8).

A low-scoring quarter: "The crowd was very dead" (6).

Loss of a playoff game: "They were making good, quick cuts to the basket" (6).

Loss of the first game in the finals: "That's the best I've ever seen a team run" (8) and "They [the opponents] threw caution to the winds" (4).

An opponent's scoring forty points: "The way he played tonight, he was going to get his forty points regardless of who was on him. We were draped on him. We held him. We punched him, kicked him down, the guy was unreal" (5).

The Celtics sound like manic patients. Bad events were always explained away as temporary, specific, and not their fault. The Celtics beat the point spread in 68.4 percent of the games following a loss in 1983–84 and in an amazing 81.3 percent of such games in 1984–85. (Remember that on average a team beats the point spread 50 percent of the time. The Celtics beat the spread in 51.8 percent and 47.3 percent of games following a win in 1983–84 and 1984–85 respectively.) They were an almost uncanny comeback team.

Now listen to the 1982–83 New Jersey Nets explaining bad events:

Loss of a playoff game: "We are all missing everything" (18) and "We botched up things ourselves and blew all our opportunities" (16).

Other losses: "This is one of the physically weakest teams I've ever coached" (18); "Our intelligence was at an all-time low" (15); and "We're passing up shots. We have no confidence at all" (17).

The Nets were not physically a bad team in 1983–84. They won 51.8 percent of their games. But mentally they were shipwrecked. As you heard, they explained losses as permanent, pervasive, and their own fault. How did they do after a loss in 1983–84? They beat the spread a dismal 37.8 percent of the time in games after losses. After wins, however, they beat the spread 48.7 percent of the time. The Nets improved their explanatory style during 1983–84, largely because of personnel changes, and during 1984–85 they went on to beat the point spread after a loss 62.2 percent of the time.

Overall, here is what we found. A team's explanatory style for bad events strongly predicts how they do against the point spread after a loss in the next season. The optimistic teams cover the spread more often than the pessimistic teams do. This effect of optimism works above and beyond the "quality" of the team. We know this since the point spread itself holds quality constant (teams should beat it, on average, 50 percent of the time regardless of how good or bad they are) and because we partial out the win-loss record from both the current and the previous seasons, as well as how often the team beat the spread after a win.

We also found the same trend we saw in baseball's National League: A team's overall win-loss record in the next season is predicted by their explanatory style in this season, equating for their win-loss record in this season.

Consider the basketball and baseball studies together. They show:

- Teams, and not just individuals, have a meaningful and measurable explanatory style.
- Explanatory style predicts how teams will do above and beyond how "good" a team is.
- Success on the playing field is predicted by optimism.
- Failure on the playing field is predicted by pessimism.
- Explanatory style works by means of how a team does under pressure—after a loss or in the late innings of close games.

The Berkeley Swimmers

THERE WAS A lot of hype in the press about Berkeley swimming star Matt Biondi's chances in the 1988 Seoul Olympics. He was scheduled to swim seven events, and the American press made it sound likely that he would win seven gold medals, duplicating Mark Spitz's unparalleled performance in the 1972 Olympics. To insiders *any* seven medals—gold, silver, or bronze—Biondi won against the competition in Seoul would represent superb swimming.

The first event Biondi swam was the two-hundred-meter freestyle. He finished a disappointing third. The second event was the one-hundred-meter butterfly, not his premier event. Overpowering the field, he led all

the way. But in the last two meters, rather than taking one extra stroke and crashing into the finish wall, he appeared to relax and coast the final meter. You could hear the groan in Seoul, and imagine it across America, as he was inched (centimetered?) out by Anthony Nesty of Surinam, who took the extra stroke to win Surinam's first medal ever. The "agony of defeat" interviewers hammered Biondi on the disappointment of a bronze and a silver medal and speculated that he might not be able to rebound. Would Biondi carry home gold in his five remaining events after this embarrassing start?

I sat in my living room confident that he would. I had reason to believe this, because we had tested Matt Biondi in Berkeley four months before to determine his capacity to do just what he had to do now—come back from defeat.

Along with all his teammates, he had taken the Attributional Style Questionnaire, and he had come out in the top quarter of optimism of an optimistic bunch. We had then simulated defeat under controlled conditions in the pool. Nort Thornton, Biondi's coach, had him swim the one-hundred-yard butterfly all out. Biondi swam it in 50.2 seconds, a very respectable time. But Thornton told him that he had swum 51.7, a very slow time for Biondi. Biondi looked disappointed and surprised. Thornton told him to rest up for a few minutes and then swim it again—all out. Biondi did. His actual time got even faster, 50.0. Because his explanatory style was highly optimistic and he had shown us that he got faster—not slower—after defeat, I felt he would bring back gold from Seoul.

In his last five events in Seoul, Biondi won five gold medals.

Our baseball and basketball studies show that teams have an explanatory style that predicts athletic success. But do the explanatory styles of individual athletes predict how they will do, particularly under pressure? This is the question that Biondi and his teammates helped us answer.

I've never met Nort Thornton. I've only seen him on television. But Nort and his wife, Karen Moe Thornton, respectively the men's and women's swimming coaches at the University of California at Berkeley, are two of my most valued collaborators. And collaborators like the Thorntons are among the most precious assets a scientist can have. I've talked to Nort only on the phone, and his first call came in March 1987.

"I've read about your studies on insurance salesmen," he said, "and I wonder if the same thing might work in swimming. Let me tell you why I think it would work."

I did everything I could to restrain myself and not shout back "Yes! Yes! Yes!" before Nort had finished telling me his line of reasoning. "It sounds like you measure something—deeply held positive beliefs—that

we, as coaches, can't quite get hold of," Nort continued. "We know attitude is important, but kids can fake attitude and fall flat when it matters. We also don't know how to change a bad attitude very well."

In October 1988, before the season started, all fifty of the men's and women's varsity swimmers took the ASQ. In addition, Nort and Karen rated each of the swimmers on how they thought the swimmers were likely to do over the season, particularly under pressure. We did this because we wanted to see if the ASQ told the Thorntons anything they didn't already know as coaches intimately familiar with their athletes.

I found right away that I knew something the coaches didn't. The optimism scores from the ASQ were totally unrelated to the coaches' ratings of how the swimmers would do under pressure. But did these scores predict actual success in swimming?

To find this out, Nort and Karen rated each swim for each swimmer for the entire season as "worse than expected" or "better than expected." The swimmers also rated themselves for the same thing, and it was clear that the coaches and the swimmers were on the same wavelength, since the ratings coincided perfectly. I merely totaled up the number of "worse than expected" swims for the season. The pessimists on the ASQ had about twice as many unexpectedly poor swims as the optimists did. The optimists lived up to their swimming potential, and the pessimists fell below theirs.

Would explanatory style work once again to predict the way people responded to defeat, as it had in baseball, basketball, and sales?

To test this, we simulated defeat under controlled conditions. At the end of the season, we had each athlete swim one of his or her best events all out. Nort or Karen then told the swimmer that his time was between 1.5 and 5 seconds (depending on the distance) worse than it actually was. So Biondi was told that he swam the one-hundred butterfly in 51.7 seconds, when he actually swam it in 50.2. We chose the amount of "failure" because we knew it would be very disappointing (one swimmer sat and rocked like a baby in a corner for twenty minutes afterwards), but undetectable as false. Each swimmer then rested and swam the event again as fast as he or she could. As we expected, the pessimists got worse. The performance of two stars who are also pessimists deteriorated in their hundred-yard events by a full two seconds, the difference between winning their event and finishing dead last. The optimists either held on or, like Biondi, got even faster. Several of the optimists got faster by between two and five seconds, again enough to be the difference between a lousy race and a win. The swimmers were, of course, debriefed afterwards.

So the Berkeley swimmers make it clear that explanatory style can work to produce success or failure at an individual level, just as the professional-

sports data show this at a team level. Moreover, explanatory style works by the same means for both individuals and teams. It makes athletes do better under pressure. If they are optimists, they try harder and come back from defeat.

What Every Coach Should Know

IF YOU ARE a coach or a serious athlete, you must take these findings seriously. They have several immediate, practical implications for you.

- Optimism is not something you know about intuitively. The ASQ measures something you can't. It predicts success beyond experienced coaches' judgments and handicappers' expertise.
- Optimism tells you when to use certain players rather than others. Consider a crucial relay race. You have a fast athlete, but he's a pessimist who lost his last individual race. Substitute. Use pessimists only after they have done well.
- Optimism tells you who to select and recruit. If two prospects are close in raw talent, recruit the optimist. He'll do better in the long run.
- You can train your pessimists to become optimists.

I didn't tell you what else the Thorntons wanted. They asked if I could take their pessimistic swimmers and make them optimists. I told them I wasn't yet sure, but our programs for change were just being developed, and they looked promising. As a way of thanking them I agreed to give them first crack in sports at our training program. As I write this chapter, our trainers are on their way to Berkeley to teach the entire varsity the skills of optimism. You will find these techniques in the last section of this book.

Chapter Ten

Health

DANIEL WAS only nine when the doctors diagnosed him as having Burkitt's lymphoma, a form of abdominal cancer. He was now ten, and in spite of an agonizing year of radiation and chemotherapy, the cancer was still spreading. His doctors and almost everyone else had given up hope. But not Daniel.

Daniel had plans. He was going to grow up to be a researcher, he told everyone, and discover how to cure diseases like this so other kids would be safe. Even as his body weakened, Daniel's optimism remained strong.

Daniel lived in Salt Lake City. The main focus of his hope was a doctor he described as "the famous East Coast specialist." This doctor, an authority on Burkitt's lymphoma, had gotten interested in Daniel's illness and had been consulting long-distance with Daniel's doctors. He planned to stop in Salt Lake City on the way to a West Coast pediatrics meeting to meet Daniel and talk with his doctors.

Daniel had been excited for weeks. There was so much that he wanted to tell the specialist. He was keeping a diary, and he hoped the diary would give some clues about what his cure would be. He felt he was participating in his own treatment now.

On the day the specialist was to arrive, fog blanketed Salt Lake City and the airport closed down. The control tower sent the specialist's plane over to Denver, and he decided to go directly on to San Francisco. When Daniel heard the news, he cried quietly. His parents and nurses told him to rest, and they promised to get the doctor by phone in San Francisco so Daniel could talk to him. But by the next morning Daniel was listless; he