HOW BAD DO YOU WANT IT?
MASTERING THE PSYCHOLOGY OF MIND OVER MUSCLE

MATT FITZGERALD

FOREWORD BY SAMUELE MARCORA, PHD
THE MIND IS THE ATHLETE.

—Bryce Courtenay, The Power of One
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Doing research to understand what limits endurance performance is not just an academic exercise. It also affects the way endurance athletes are tested, the way they train, and how they prepare for competitions. For the first 100 years in the history of exercise physiology, endurance was thought to be limited by muscle fatigue caused by energy depletion or inadequate oxygen delivery and consequent acidification of the locomotor muscles. As a result, endurance athletes wear heart rate monitors during training and have their ears pierced to measure blood lactate, erythropoietin use has plagued cycling and other endurance sports, and tons of pasta and rice have been consumed before competitions. These are only some examples of how exercise physiology has had an impact on the lives of endurance athletes.

Then, in the late 1990s, Professor Tim Noakes came up with the Central Governor Model (CGM). This model proposes that endurance performance is limited by a subconscious intelligent system in the brain (the central governor) that regulates locomotor muscle recruitment so that the speed/power output sustained over a race never exceeds the capacity of the body to cope with the stress of endurance exercise. The hypothesis is that if this safety system didn’t
exist, a highly motivated endurance athlete might exercise beyond his/her physiological capacity and threaten his/her own life with heat shock, myocardial ischemia, and rigor mortis.

The CGM was revolutionary because it convinced many exercise physiologists that the organ that limits endurance performance is the brain, not the cardiovascular system and fatigued locomotor muscles. Subsequent research, including our 2010 study that inspired the subtitle of this book, confirmed this no longer controversial idea. There is a big problem, however: If endurance performance was limited by a subconscious and intelligent safety system in the brain, what could endurance athletes do about it? The answer would be nothing apart from training the way they have always done to increase the capacity of their bodies to cope with the stress of endurance exercise. Indeed, the CGM has not had any significant impact on the way endurance athletes train and prepare for competitions.

Fortunately, there is no evidence to indicate that a central governor exists inside our brains, and endurance athletes have considerable control over their performance. This alternative model of how the brain regulates endurance performance is called the Psychobiological Model. Its core principles are that decisions about pacing or quitting during endurance competitions are taken by the conscious brain and that these decisions are primarily based on the conscious sensation of how hard, heavy, and strenuous exercise is, a feeling we call perception of effort.

Many of my colleagues in exercise physiology find it difficult to accept the Psychobiological Model; how can something ephemeral and subjective like a perception have such a great influence on endurance performance? Surely things that can be objectively measured (e.g., heart size and how much glycogen is inside the locomotor muscles) are more influential. This conclusion may be justified if one considers endurance performance simply as the output of a biological machine with no thoughts and feelings. However, I consider endurance performance to be a self-regulated behavior on which thoughts and feelings can have profound influences. The pain of torture (a
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perception) can force soldiers to betray the country they dedicated their lives to. Intense hunger (a perception) can turn civilized people into cannibals. Thoughts and feelings can also lead to the ultimate catastrophic failure of homeostasis: death by suicide. Therefore, we shouldn’t be surprised that perception of effort (and thoughts related to it) can limit endurance performance. Perceptions are powerful.

Matt Fitzgerald was one of the first sportswriters to recognize the potential implications of this Psychobiological Model for endurance athletes. I still remember our first chat over a cranky mobile-phone connection in 2009 after we published our seminal study on the effects of mental fatigue on perception of effort and endurance performance. I was at a track and field meeting in Italy, and Matt was in his house in the United States. We talked for well over an hour, fueled by my passion about interdisciplinary research (and a natural tendency of Italians to talk a lot!) and Matt’s thirst for the latest scientific developments that may have a positive impact on his many readers. Our “long-distance relationship” has continued over the years with me producing more research on the psychobiology of endurance performance and Matt translating it for the general public via his articles and books.

In this book, Matt has put together an impressive collection of real-life examples of how perception of effort and other psychological factors affect endurance performance. These examples from the lives of elite athletes from a variety of endurance sports are skillfully mixed with summaries of the most relevant scientific research. The result is quite remarkable: a book that can be read as a sports biography but, at the same time, provides suggestions on how to improve endurance performance by becoming your own “sport psychologist.” I hope this will lead to a more widespread application of psychological principles and techniques by endurance athletes and their coaches. Indeed, the power of psychology has not been fully exploited in endurance sports, and to use it deliberately and systematically is one of the main practical suggestions derived from the Psychobiological Model.
However, as Matt points out, this does not mean that winning endurance competitions is simply a matter of “willpower.” Conscious self-regulation of thoughts, emotions, and behavior can have a dramatic influence on endurance performance, as beautifully illustrated by the real-life examples provided in this book. But genetics, physical training, and nutrition (e.g., carb intake and caffeine) also play a big role because they have profound influences on perception of effort. The subconscious brain can also influence perception of effort, as we recently demonstrated using subliminal visual messages. How to avoid the negative effects of some subconscious stimuli and harness the power of the subconscious to improve endurance performance is going to be one of the future developments of psychology applied to endurance sports.

We are also working on a novel kind of training, called Brain Endurance Training, that combines physical training with mentally demanding tasks to stimulate the brain areas involved in self-regulation and to increase resistance to mental fatigue. It is an exciting time because the Psychobiological Model is inspiring innovative performance-enhancing strategies that work over and above those developed on the basis of the traditional cardiovascular/muscle fatigue model.

So keep an eye on Matt. I am sure this book is only the first of a series of successful books on this very promising area of development for endurance athletes.

— Samuele Marcora, PhD
My first endurance race was a two-lap run around the athletic fields at Oyster River Elementary School in Durham, New Hampshire. The contest was one of many that made up the program for Field Day, a sort of graduation rite for fifth graders. Like most 11-year-olds, I had run plenty of neighborhood races, but they’d all been short sprints. Children do not compete over long distances except under the direction of adults. On Field Day, I found out why.

Knowing no better, we all took off from the start line at full speed. After 60 or 70 yards, a flu-like weakness invaded my legs. I seemed to grow 2 pounds heavier with each stride. My esophagus burned like an open wound dunked in saltwater. A tingling sensation crept into my head, and my consciousness became a weak flame guttering in a malevolent wind. The few thoughts I was able to form were fragmentary and panicked: What the hell is happening to me? Is this normal? Are the other kids hurting this much?

I completed the first lap and, shaking off a powerful temptation to quit, started the second. One boy remained in front of me—Jeff Burton, the only kid in my class as skinny as I was. I understood my situation. I could either push harder to catch Jeff at the cost of intensifying my misery or cap my misery and let Jeff go. But a third option materialized: Jeff faltered. Buoyed by the sight of his unraveling, I...
passed him on the approach to the last turn and crossed the finish line victorious, though too weary to celebrate except inwardly.

I came away from this experience having learned a fundamental truth about endurance sports. While my legs and lungs had put me in a position to win, it was my mind—particularly my ability to absorb the shock of the novel sensations I felt and my willingness to suffer a bit for the sake of winning—that had carried me over the top. The essential challenge of long-distance racing, I understood, was mental.

Three years after my Field Day triumph, I blew out my left knee on a soccer pitch. The surgeon who stapled it back together advised me to find another sport. I'd been moonlighting as a miler for the Oyster River Middle School track team and having some success with it at the time of my injury. So I decided to put all my chips on running.

This was 1985, medieval times in the evolution of post–knee reconstruction recovery and rehabilitation. I wore a full-leg cast for six weeks after surgery and then graduated to a brace, which stayed on for another six months. That Kevlar-and-Velcro albatross circled the track with me throughout my first season of high school indoor track. When the brace came off in the spring, I felt reborn. I raced the mile seven times in the outdoor season and set personal bests six times.

In the fall, I led our cross country team to a state championship title in one of New Hampshire’s three interscholastic athletic divisions. A week later, I took 10th place individually at the “Meet of Champions,” where the top teams and individuals from all three divisions went head-to-head. I was the second-highest finisher among sophomores and the highest-placing first-year runner. I was on a path to become the best high school runner in the Granite State before I graduated.

It never happened. The first indication that it wasn’t to be came at the very moment of my big breakthrough at the divisional state cross country championship. The race was held at Derryfield Park in Manchester, the toughest high school cross country course in America. It starts at the bottom of a ski slope, goes right to the top, and comes
back down. I summited the mountain in second place behind Sean Livingston, a senior who was on a completely different plane of talent. I didn’t think much of it until we came out of the woods, and my girlfriend saw me and squealed at the person standing next to her, “Oh, my God! He’s second!” Then I realized I was killing it.

Moments later, though, I was passed by Todd Geil of rival Stevens Academy, a fellow sophomore. At the base of the hill, he had 10 or 15 meters on me. But the course made one last diabolical turn upward before flattening out for the finish. I was a better uphill runner than Todd (that was how I’d gotten ahead of him in the first place), and I started to reel him in.

We rounded the final turn together. Todd got up on his toes and charged. I did the same. We sprinted in virtual lockstep down the homestretch as our parents and coaches and teammates screamed in our ears.

Then I just gave up. Threw in the towel. Quit. It happened as Todd ratcheted up his pace one more notch—his final ante. I will never know if I could have matched his quickening and perhaps raised him a notch of my own, because I didn’t even try. The reason was simple: It hurt too much. A part of me seemed to ask, How bad do you really want this?, and another part answered, Not as much as that guy. I don’t think Todd was more talented or fitter than I was—indeed, I would defeat him in two of the five championship cross country races remaining in our high school careers. What separated us that day was that he was willing to try harder.

The shock of my first exposure at age 11 to the suffering that comes with endurance racing had never left me. I loved running, loved getting fitter and faster, but I hated suffering the way I did in races. My aversion to the dark side of the sport I’d chosen had been manageable when I was new to it and my expectations were low. But when I reached the level of the contenders, I discovered that I could hurt even more than I had, and that I would have to hurt more in order to become a champion. Only then did I realize that I had previously operated inside a sort of comfort zone within discomfort, an
illusory “100 percent” that I had no choice but to move beyond if I was ever going to be the best.

But I did not make that choice. Instead I became a classic head case. An all-consuming dread possessed me on race days. My stomach churned, my heart raced, and my thoughts circled obsessively around the agony to come. If the race fell on a Tuesday, I sat through my classes in a fugue state, hearing nothing the teachers said. If it was on a Saturday, I could barely force down my Honey Nut Cheerios before I left home to meet up with my teammates for the bus ride to the slaughterhouse.

In my junior year, I began to mail in my races, my false 100 percent efforts becoming an inwardly acknowledged 95 percent. I ran just hard enough that no one else knew I was sandbagging. Even so, I still had some good days—I finished sixth in the Meet of Champions in 1987—but more often I left the racecourse disgusted with myself, knowing I hadn’t left it all out there.

Things got worse. At an outdoor track meet in Boston, I faked an ankle sprain halfway through a 2-mile race and fell to the ground writhing in phony pain. Weeks later, I pretended to miss the call to the start line of another 2-mile race, and the field went off without me. After my senior cross country season (which I capped with a pathetic 17th place finish in the Meet of Champions, a race in which my nemesis, Todd Geil, took second), I quit running. The wimp in me had prevailed.

In 1995, two years out of college and still believing I was through with running, I moved to San Francisco. My goal was to take the first decent writing job I was offered. As it turned out, that offer came from Bill Katovsky, who had founded Triathlete 12 years earlier and was then launching a new endurance magazine called Multisport. I would just as gladly have taken a gig with High Times, but fate chose to immerse me neck-deep in an environment filled with people who loved working out and getting fitter and faster, as I once had.

The inevitable happened. I got sucked back into training and racing, first as a runner and then as a triathlete. It was a slippery slope.
I became increasingly devoted to these pastimes and more and more ambitious. Two overlapping desires fueled this second act of my life as an endurance athlete. Above all, I wanted to become the athlete I might have been if I hadn’t quit. But to do this, I understood, I needed to overcome the mental weakness that had kept me from becoming the athlete I might have been the first time around, and I wanted to get that monkey off my back for its own sake.

I never did become the athlete I might have been. My true Achilles heel proved to be a mutinously fragile body that caused me to pull up lame if I so much as uttered the words *plantar fasciitis*. (There were portents of this weakness in my youth, among them my left-knee blowout at age 14.) But if I failed to become the athlete I might have been, I succeeded at least in becoming the best athlete I could be given the flawed body I was stuck with. I got the monkey off my back.

If the moment I let Todd Geil go in the homestretch of the divisional state cross country championship marked the symbolic loss of my integrity as an athlete, a moment during the 2008 Silicon Valley Marathon signaled my redemption. I was about 3 miles from the finish line and suffering mightily when I passed a young couple standing at the roadside, probably waiting for a friend to come by. I’d gone about a dozen paces beyond them when I heard the woman speak one word.

“Wow.”

This word might have meant any of a number of things. Perhaps the young lady was impressed by how fast I was running. But the leader of the race (I would finish third) had come through 4 minutes ahead of me. So it wasn’t that. Or maybe she was admiring my beautiful running style. But I do not have a beautiful running style, and my stride probably never looked worse than it did in that moment.

Indeed, I believe the woman who said “wow” was actually awed by how terrible I looked, by the hideous strain in my movements. I must have appeared to her like a man slogging through invisible waist-deep liquid. That’s certainly what the effort felt like to me.
was drooling too, I’m pretty sure. The stranger’s monosyllabic utterance was a nod of respect to how hard I was trying, how much I was willing to suffer in pursuit of my meaningless goal of finishing in a certain amount of time.

I did not, in fact, achieve my personal time goal in that race, yet another injury having curtailed my training just enough to put it out of reach. But I achieved something greater—the satisfaction of knowing that for once I had truly left it all out there on the racecourse.

Mile 23 of the 2008 Silicon Valley Marathon remains my most treasured moment as an athlete. More than that, I regard it as one of the finer moments of my entire life. Sure, it was just a race, but sports are not really separate from life, nor is the athlete distinct from the person. In mastering my fear of suffering in races, I acquired a greater level of respect for myself, a sense of inner strength that has helped me tackle other challenges, both inside and outside sports.

I might never have redeemed myself in this way if not for a certain advantage I gained from my work as an endurance sports writer: frequent contact with world-class athletes. Through these interactions I discovered that the most gifted .001 percent have the same psychological vulnerabilities that the rest of us have, and must overcome them to achieve things we do not. Talent alone doesn’t cut it. This realization filled me with a mix of healthy shame and inspiration that moved me to try harder.

At a relatively early point in the second act of my life as an endurance athlete, I had a long telephone conversation with Hunter Kemper, who had competed in the 1998 USA Triathlon Elite National Championship in Oceanside, California, two days earlier. I’d seen the event in person as a reporter for Triathlete. Halfway through the closing 10K run, Hunter and Australian Greg Welch shook themselves loose from the lead pack. Welch had won the 1990 Triathlon World Championship, the 1993 Duathlon World Championship, the 1994 Ironman World Championship, and the 1996 Long-Distance Triathlon World Championship. Hunter was a 22-year-old rookie pro whose greatest athletic feat was a second-place finish in the Atlantic
Coast Conference Championship 10000 meters. The two men came into the last half mile still running side by side. I asked Hunter what that was like.

“I was freaking out,” he told me.

Hunter’s fuller explanation made it clear to me that he felt as intimidated, as terrified, and as surreally out of place as I would have felt in his shoes. He suffered a soul-twisting crisis of confidence as he ran down the long final stretch toward the finish line with Welch right beside him. Something within Hunter seemed to ask, *How bad do you want it?* There was a moment of uncertainty, of wavering. But in the next moment, Hunter recognized that he wanted to win the race more than he feared his legendary challenger, and enough to suffer for it. He took a blind leap into the abyss and discovered the possibility of a whole new level of effort. His sudden acceleration snapped Welch’s neck—figuratively—and the rookie sped to the finish line alone, winning the first of an eventual seven national championship titles.

Later in the same phone conversation, I learned from Hunter that his best high school time for 2 miles was 2 seconds slower than mine. Experiences like this one—and there were many more—deflated my fear of suffering in races. They strengthened my determination to become a tougher racer, and my belief that I could.

While this personal evolution was ongoing, a revolution was taking place in sports science. New technologies such as functional magnetic resonance imaging had opened the first narrow window into the brain, allowing exercise physiologists to learn more about that sodden, 3-pound electrified organ’s role in relation to endurance performance, a process that has culminated in the development of a new “psychobiological” model of endurance performance. Named by Samuele Marcora, an Italian exercise physiologist who lives and works in England, this new model views mind and body as interconnected, with the body distinctly subordinate. Given my lifelong fascination with the mental dimension of endurance racing, I followed this research keenly and eventually I began to share what I
was learning in magazine articles and in books such as *Brain Training for Runners*. What excited me most about the brain revolution in endurance sports, and about the psychobiological model that issued from it, was that they resoundingly validated the lesson I had taken away from my fifth-grade initiation into the experience of endurance racing. It turns out the essential challenge of endurance sports really is psychological.

Many aspects of endurance performance that were always presumed to be biological in nature are now known to be mind-based. To give one example, studies by Paul Laursen of Australia’s Edith Cowen University and other researchers have demonstrated that, except in extreme cases, dehydration, which is biological, does not cause athletes to slow down in races; instead, the psychological condition of *feeling thirsty* does.

As a “hard” science, the field of exercise physiology is peopled by men and women who have strong materialist leanings, and who are therefore dispositionally disinclined to value the role of the mind in endurance performance. This bias has made them generally dismissive of champion athletes’ frequent insistence that the mind, in fact, is running the show. But the brain revolution has turned many of these scientists against their materialist bent. These enlightened researchers are now willing to concede that the great Finnish runner Paavo Nurmi had it right when he said almost a century ago, “Mind is everything. Muscle—pieces of rubber. All that I am, I am because of my mind.”

A more rigorous if less poetic way of expressing Nurmi’s belief is this: From a psychobiological perspective, endurance performance is determined solely by the mind’s output; biology is no more than an external input to the mind, influencing its output. The British neuroscientist Vincent Walsh has even suggested that sports competition is the single most challenging thing the human brain ever does—more challenging even than “purely” mental tasks like solving differential equations and also more challenging to the brain than it is to the body.
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If you think that’s a stretch, consider this: Muscles are not needed at all for endurance racing, or for any other form of movement, for that matter. They are entirely expendable and replaceable. Today quadriplegics can control robotic limbs with their thoughts through electrodes attached to the scalp. Soon it will be possible for victims of full paralysis to compete in endurance races while strapped inside a mechanical body, or remotely. Will these cybernetic athletes be able to go forever? No. Their performance will be limited by the mind, just as the performance of able-bodied endurance athletes has always been.

Controlling a robotic body with one’s thoughts is not easy, even though the robotic body is doing all of the work—because it’s not doing all of the work. After 30 minutes or so of feeding herself with a robotic arm, the user hits a wall of fatigue that renders her powerless to continue. There is no practical difference between this phenomenon and the case of a mountain biker bonking on the last hill of a race. In both scenarios, the breakdown occurs in the brain as a result of the mental effort of pushing the body—be it flesh or metal—to do work.

If science has only recently recognized that endurance is fundamentally psychological, common language has always known. When we say that a person has endured something, what do we mean? We mean that the person has gone through a challenging experience. A hiker might endure 36 hours of wandering lost on a cold mountain, or a naval officer might endure seven days of sleep deprivation during the SEAL training program’s Hell Week (as my father did during the war in Vietnam). But it’s the experience, not the biological effects of cold exposure or sleep deprivation, that must be endured. If the hiker did not feel the cold, or if the naval officer did not feel his tiredness, there would be no basis for congratulating him on surviving the ordeal.

Endurance athletes, by definition, endure. They endure long hours of training, the privations of a monastic lifestyle, and all manner of aches and pains. But what endurance athletes must endure above all is not actual effort, but perception of effort. This is the phrase that scientists now use to refer to what athletes normally describe as "how
How Bad Do You Want It?

“Hard” exercise feels in a given moment, and it represents the central concept of the psychobiological model of endurance performance. It was perceived effort that so shocked me on Field Day in 1982 and that I later recoiled from as a high school runner. And it is perceived effort, according to the latest science, that causes the mountain biker to hit the wall on the last hill of a race, makes the paralytic woman manipulating a robotic arm with her thoughts bonk after 30 minutes of self-feeding, and constrains endurance performance in all circumstances. The most important discovery of the brain revolution in endurance sports, and the most important truth you can know as an endurance athlete, is this: One cannot improve as an endurance athlete except by changing one’s relationship with perception of effort.

Even something as seemingly physical as training conforms to this principle. The training process increases an athlete’s physical capacity, but at the same time it changes her relationship with perception of effort. The fitter the athlete becomes, the easier it feels for her to swim, bike, run, or whatever at any given speed, and that is why her performance improves. If the athlete’s physical capacity increased but her relationship with perception of effort did not change accordingly, her race times would not get any better because she would be psychologically unable to access that increased physical capacity.

In reality, the scenario I’ve just described could never happen. Perceived effort is essentially the body’s resistance to the mind’s will. The fitter an athlete becomes, the less resistance the body puts up. Therefore increased physical capacity is always felt.

A variety of factors that affect the mind directly may also change an athlete’s relationship to perception of effort and thereby enhance performance. Some of these factors increase the amount of output (i.e., speed) that results from a given level of effort, just as training does. One such factor is inhibitory control, or the ability to stay focused on task-relevant stimuli (such as a competitor up ahead) in the presence of distracting stimuli (such as a memory of losing to that same competitor in a previous race). A 2014 study conducted...
by Samuele Marcora and published in the *European Journal of Applied Psychology* showed that a cognitive test designed to fatigue the brain’s inhibitory control mechanism increased perceived effort and reduced performance in a subsequent 5-km run. One year later, researchers at the University of Padua reported in *PLOS ONE* that runners who achieved higher scores on a measurement scale for inhibitory control performed better in an ultramarathon.

Other factors increase the amount of perceived effort an athlete can (or will) tolerate. An obvious example of this sort is motivation. It was mainly through heightened motivation that I developed a greater tolerance for perceived effort and moved beyond being a head case as an endurance athlete.

Not all endurance athletes are head cases, but given the nature of the sports in which they participate, all endurance athletes face psychological challenges, and all such challenges are either directly or indirectly related to perception of effort. If racing wasn’t as hard as hell, athletes would not experience moments of self-doubt, or pre-race apprehension, or post-race regret, or mental burnout, or intimidation. Even most training errors, such as overtraining, originate in the fear of suffering.

Psychologists use the term *coping* to refer to a person’s behavioral, emotional, and cognitive responses to discomfort and stress. Endurance sports are largely about discomfort and stress; hence they are largely about coping. In a race, the job of the muscles is to perform. The job of the mind is to cope. But here’s the hitch: The muscles can only perform to the degree that the mind is able to cope. Endurance sports are therefore a game of “mind over muscle.”

In endurance sports, successful coping is any behavior, emotion, thought, or combination thereof that yields better performance. Phrased another way, successful coping in endurance sports is any response to discomfort and stress that favorably changes an athlete’s relationship to perception of effort, either by increasing the amount of effort the athlete is able to give or by enhancing what the athlete gets out of her best effort.
Some methods of coping are more effective than others. Faking an injury to avoid the discomfort of completing a race, as I did in high school, is one example of an ineffective coping method. Drawing inspiration from elite athletes to embrace greater levels of discomfort, as I did in the second act of my life as an endurance athlete, is an example of a more effective coping method.

To become the best athlete you can be, you need to become really good at coping with the characteristic forms of discomfort and stress that the endurance sports experience dishes out, beginning with perceived effort and extending to the many challenges that are secondary to it, such as fear of failure. You must discover, practice, and perfect the coping skills that conquer these challenges most effectively. My own term for a highly developed overall coping capacity in endurance sports is mental fitness.

Traditional sports psychology is of limited use in developing mental fitness. Before the brain revolution, when mind and body were treated as separate and when biology explained almost everything (except it didn’t), the discipline of sports psychology was confined to a small space in the margins of the athletic sphere. It consisted of a hodgepodge of techniques that were overtly nonphysical, such as visualization and goal setting, and almost always practiced outside the context of the sport itself. These same tricks were foisted upon athletes in all sports, from those in which perception of effort plays a small role, such as baseball, to those in which perception of effort is everything: endurance sports.

The brain revolution has caused a new sports psychology to begin to emerge, one that is grounded in the psychobiological model of endurance performance and hence is specific to these disciplines. The new psychology differs from the old in two key ways. First, it focuses squarely on the development of mental fitness, or of coping skills that directly and indirectly alter an athlete’s relationship to perceived effort in ways that improve performance. It is a psychology of mind over muscle.
Second, in the new endurance sports psychology, the role of sports psychologist is taken on by you—the athlete. Why? Because the only way to become really good at coping with the discomforts and stresses of endurance sports is to experience them. Visualization sessions and goal-setting exercises alone won’t help your mind quell your body’s rebellion in the toughest moments of a race. Developing mental fitness requires exposure to these challenges no less than the development of physical fitness requires exposure to workouts. Nobody can do this work for you, or even guide you through it. Coping is a response to discomfort and stress, after all.

Being your own sports psychologist means more than learning the hard way from experience, however. There is a crucial difference between muddling blindly through athletic challenges and encountering them with prior knowledge of their nature and of the methods of coping with them that have proven most effective for other athletes. The overarching mission of the new psychology of endurance sports is to equip athletes with this knowledge so that they do not have to “reinvent the wheel” in their attempts to master the discomfort and stress of their sport but can function successfully as their own sports psychologist.

The best source of knowledge concerning the most effective methods of coping with the challenges of endurance sports is the example set by elite endurance athletes. The methods that the greatest athletes rely on to overcome the toughest and most common mental barriers to better performance are practically by definition the most effective coping methods for all athletes. Champions are the ultimate role models for sports psychology no less than they are for training and nutrition. It is not possible to succeed at the highest level of any major endurance sport with a B+ mental game. No athlete, no matter how talented, can win on the international stage today without harnessing the full power of his mind to maximize both the amount of effort he is able to give and the amount of performance he gets out of his best effort. Consider how much
more Hunter Kemper achieved than I did with perhaps only slightly greater raw physical talent.

To learn from the champions, it is not enough to be exposed to their stories of overcoming. We must also know how to interpret these examples. What is the essential nature of the challenges the most successful racers face and overcome? How do we understand the coping skills they use to master these challenges in a way that allows us to replicate them in our own experience? These are the questions we have to answer in order to benefit from the example set by the best of the best. The psychobiological model of endurance performance helps us here. By applying this new science to elite-athlete case studies we can tease out practical lessons that can then be applied to our own athletic journeys.

It was this combination of vicarious experience and scientific interpretation that directed my path to redemption in the second act of my life as an endurance athlete. As a high school runner I lacked even the vaguest scientific understanding of the fears that held me back. Nor did I realize that elite athletes faced and overcame the same fears. As an adult runner-triathlete I tackled these fears head-on in the role of sports psychologist to myself, armed with knowledge of their neuropsychological essence and with inspiration taken from the examples of elite athletes who demonstrated the most effective ways to cope with them. This wisdom did not itself conquer the challenge I sought to master, but it gave me the wherewithal to actively exploit my athletic experiences to gain mental fitness.

The job of this book is to help you become your own sports psychologist—a competent and ever-improving practitioner of the new psychology of endurance sports. You will find no techniques or exercises in the pages ahead. That’s traditional sports psychology. Instead you will encounter true stories of overcoming, drawn mainly from the elite stratum of endurance sports, which become “teachable moments” when viewed from the perspective of the psychobiological model of endurance performance.
In every race, something within each athlete (something we may now specify as perception of effort) poses a simple question: *How bad do you want it?* To realize your potential as an athlete, you must respond with some version of this answer: *More.* And then you have to prove it. It’s easy in principle, hard in practice—much harder than figuring out how to train, what to eat, and which shoes to wear. Here’s my promise to you: After you’ve read this book, your answer to the most important question in endurance sports will never be the same.
MATT FITZGERALD is an acclaimed endurance-sports writer and authority. His many previous books include the best-selling *Racing Weight; RUN: The Mind-Body Method of Running by Feel; Brain Training for Runners;* and *Diet Cults.* His book *Iron War* was long-listed for the 2012 William Hill Sports Book of the Year. Matt is a regular contributor to *Men’s Fitness, Men’s Health, Outside, Runner’s World, Bicycling, Running Times, Women’s Running,* and other sports and fitness publications. He lives and trains in California.
How Bad Do You Want It? looks at epic moments in endurance sports to mine habits and tactics we can use to cultivate our own mental strength.

Top athletes can seem godlike in their abilities. But no matter how skilled they are, talent takes them only so far. The hardest races demand that a champion rely as much on the mind as on the body, using it to confront the fears that we all face: fear of failure, suffering, or change, to name a few.

In How Bad Do You Want It? renowned endurance sports journalist Matt Fitzgerald examines the “psychobiological” model of athletic performance, exploring how athletes are able to overcome physical limitations with mental might. In gripping accounts from triathlon, cycling, running, rowing, and swimming, Fitzgerald puts the reader inside breathtaking races, shedding new light on what science says about mental fortitude and how anyone can cultivate the mental strength to surmount challenges—in sport and in life.

Matt Fitzgerald is a journalist, coach, sports nutritionist, and author of more than 20 books, including the best-selling Racing Weight.