

## I'm Not Really Running, I'm Not Really Running...

By [GINA KOLATA](#)

BILL MORGAN, an emeritus professor of kinesiology at the [University of Wisconsin](#), likes to tell the story, which he swears is true, of an [Ivy League](#) pole vaulter who held the Division 1 record in the Eastern region.

His coaches and teammates, though, noticed that he could jump even higher. Every time he cleared the pole, he had about a foot to spare. But if they moved the bar up even an inch, the vaulter would hit it every time. One day, when the vaulter was not looking, his teammates raised the bar a good six inches. The man vaulted over it, again with a foot to spare.

When his teammates confessed, the pole vaulter could not believe it. But, Dr. Morgan added, "once he saw what he had done, he walked away from the jumping pit and never came back."

After all, Dr. Morgan said, everyone would expect him to repeat that performance. And how could he?

The moral of the story? No matter how high you jump, how fast you run or swim, how powerfully you row, you can do better. But sometimes your mind gets in the way.

"All maximum performances are actually pseudo-maximum performances," Dr. Morgan said. "You are always capable of doing more than you are doing."

One of my running partners, Claire Brown, the executive director of Princeton in Latin America, a nonprofit group, calls it mind over mind-over-body.

She used that idea in June in the Black Bear triathlon in Lehighton, Pa., going all-out when she saw a competitor drawing close. She won her age group (30 to 34) for the half-Ironman distance, coming in fourth among the women.

When it was over, she ended up in a medical tent. "I felt like I was going to pass out or throw up or both," she recalled. "At a certain point in a hard race, you've pushed yourself beyond the point of ignoring the physical pain, and now you have to tell your mind that it can keep going, too."

The problem for many athletes is how to make a pseudo-maximum performance as close as possible to a maximum one. There are some tricks, exercise physiologists say, but also some risks.

The first thing to know, said Dr. Benjamin Levine, an exercise researcher and a cardiology professor at the University of Texas Southwestern Medical Center in Dallas, is that no one really knows what limits human performance. There's the ability of the

heart to pump blood to the muscles, there's the ability of the muscles to contract and respond, there's the question of muscle fuel, and then, of course, there is the mind.

"How does the brain interact with the skeletal muscles and the circulation?" Dr. Levine said. "How much of this is voluntary and how much is involuntary? We just don't know."

But since most people can do better, no matter how good their performance, the challenge is to find a safe way to push a little harder. Many ordinary athletes, as well as elites, use a technique known as dissociation.

Dr. Morgan, who tested the method in research studies, said he was inspired by a story, reported by an anthropologist that, he suspects, is apocryphal. It involves Tibetan monks who reportedly ran 300 miles in 30 hours, an average pace of six minutes a mile. Their mental trick was to fixate on a distant object, like a mountain peak, and put their breathing in synchrony with their locomotion. Every time a foot hit the ground they would also repeat a mantra.

So Dr. Morgan and his colleagues instructed runners to say "down" to themselves every time a foot went down. They were also to choose an object and stare at it while running on a treadmill and to breathe in sync with their steps. The result, Dr. Morgan said, was that the runners using the monks' strategy had a statistically significant increase in endurance, doing much better than members of a control group who ran in their usual way.

That, in a sense, is the trick that [Paula Radcliffe](#) said she uses. Ms. Radcliffe, the winner of this year's [New York City Marathon](#), said in a recent interview that she counts her steps when she struggles in a race. "When I count to 100 three times, it's a mile," she said. "It helps me focus on the moment and not think about how many miles I have to go. I concentrate on breathing and striding, and I go within myself."

Without realizing what I was doing, I dissociated a few months ago, in the middle of a long, fast bike ride. I'd become so tired that I could not hold the pace going up hills. Then I hit upon a method — I focused only on the seat of the rider in front of me and did not look at the hill or what was to come. And I concentrated on my cadence, counting pedal strokes, thinking of nothing else. It worked. Now I know why.

Dr. Morgan, who has worked with hundreds of subelite marathon runners, said every one had a dissociation strategy. One wrote letters in his mind to everyone he knew. Another stared at his shadow. But, Dr. Morgan asked him, what if the sun is in front of you? Then, the man said, he focused on someone else's shadow. But what if the sun goes behind a cloud, Dr. Morgan asked?

"Then it's tough," the runner conceded.

Dissociation clearly works, Dr. Morgan said, but athletes who use it also take a chance on serious injury if they trick themselves into ignoring excruciating pain. There is, of course, a fine line between too much pain and too little for maximum performance.

“The old adage, no pain no gain comes into play here,” Dr. Morgan said. “In point of fact, maximum performance is associated with pain.”

The brain affects everyday training as well, researchers note.

Imagine you are out running on a wet, windy, cold Sunday morning, said Dr. Timothy Noakes, an exercise physiologist at the University of Cape Town. “The conscious brain says, ‘You know that coffee shop on the corner. That’s where you really should be.’” And suddenly, you feel tired, it’s time to stop.

“There is some fatigue in muscle, I’m not suggesting muscles don’t get fatigued,” Dr. Noakes said. “I’m suggesting that the brain can make the muscles work harder if it wanted to.”

Part of a winning strategy is to avoid giving in to lowered expectations, athletes and researchers say. One friend tells me that toward the end of a marathon he tries not to look at people collapsed or limping at the side of the road. If he does, he suddenly realizes how tired he is and just gives up.

Marian Westley, a 35-year-old oceanographer in Princeton, N.J., and another running friend of mine, used several mental strategies in the recent Philadelphia marathon.

She slowed herself down at the start by telling herself repeatedly that she was storing energy in the bank. And when she tired near the race’s finish, she concentrated on pumping her arms. “I thought about letting my arms run the race for me, taking the pressure off my legs.”

She finished in three hours and 43 minutes, meeting her goal of qualifying for the Boston Marathon. “I am over the moon!” she wrote in an e-mail message the day after the race.