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That Which Does Not Kill Me Makes Me Stranger

By DANIEL COYLE

Jure Robic, the Slovene soldier who might be the world's best ultra-endurance athlete, lives in a small fifth-floor apartment near the railroad tracks in the town of Koroska Bela. By nature and vocation, Robic is a sober-minded person, but when he appears at his doorway, he is smiling. Not a standard-issue smile, but a wild and fidgety grin, as if he were trying to contain some huge and mysterious secret.

Robic catches himself, strides inside and proceeds to lead a swift tour of his spare, well-kept apartment. Here is his kitchen. Here is his bike. Here are his wife, Petra, and year-old son, Nal. Here, on the coffee table, are whiskey, Jägermeister, bread, chocolate, prosciutto and an inky, vegetable-based soft drink he calls Communist Coca-Cola, left over from the old days. And here, outside the window, veiled by the nightly ice fog, stand the Alps and the Austrian border. Robic shows everything, then settles onto the couch. It's only then that the smile reappears, more nervous this time, as he pulls out a DVD and prepares to reveal the unique talent that sets him apart from the rest of the world: his insanity.

Tonight, Robic's insanity exists only in digitally recorded form, but the rest of the time it swirls moodily around him, his personal batch of ice fog. Citizens of Slovenia, a tiny, sports-happy country that was part of the former Yugoslavia until 1991, might glow with beatific pride at the success of their ski jumpers and handballers, but they tend to become a touch unsettled when discussing Robic, who for the past two years has dominated ultracycling's hardest, longest races. They are proud of their man, certainly, and the way he can ride thousands of miles with barely a rest. But they're also a little, well, concerned. Friends and colleagues tend to sidle together out of Robic's earshot and whisper in urgent, hospital-corridor tones.

"He pushes himself into madness," says Tomaz Kovsca, a journalist for Slovene television. "He pushes too far." Rajko Petek, a 35-year-old fellow soldier and friend who is on Robic's support crew, says: "What Jure does is frightening. Sometimes during races he gets off his bike and walks toward us in the follow car, very angry."

What do you do then?

Petek glances carefully at Robic, standing a few yards off. "We lock the doors," he whispers.

When he overhears, Robic heartily dismisses their unease. "They are joking!" he shouts. "Joking!" But in quieter moments, he acknowledges their concern, even empathizes with it — though he's quick to assert that nothing can be done to fix the problem. Robic seems to regard his racetime bouts with mental instability as one might regard a beloved but unruly pet: awkward and embarrassing at times, but impossible to live without.

"During race, I am going crazy, definitely," he says, smiling in bemused despair. "I cannot explain why is that, but it is true."

The craziness is methodical, however, and Robic and his crew know its pattern by heart. Around Day 2 of a typical weeklong race, his speech goes staccato. By Day 3, he is belligerent and sometimes paranoid. His short-term memory vanishes, and he weeps uncontrollably. The last days are marked by hallucinations: bears, wolves and aliens prowl the roadside; asphalt cracks rearrange themselves into coded messages. Occasionally, Robic leaps from his bike to square off with shadowy figures that turn out to be mailboxes. In a 2004 race, he turned to see himself pursued by a howling band of black-bearded men on horseback.

"Mujahedeen, shooting at me," he explains. "So I ride faster."

His wife, a nurse, interjects: "The first time I went to a race, I was not prepared to see what happens to his mind. We nearly split up."

The DVD spins, and the room vibrates with Wagner. We see a series of surreal images that combine violence with eerie placidity, like a Kubrick film. Robic's spotlight figure rides through the dark in the driving rain. Robic gasps some unheard plea to a stone-faced man in fatigues who's identified as his crew chief. Robic curls fetuslike on the pavement of a Pyrenean mountain road, having fallen asleep and simply tipped off his bike. Robic stalks the crossroads of a nameless French village at midnight, flailing his arms, screaming at his support crew. A baffled gendarme hurries to the scene, asking, *Quel est le problème?* I glance at Robic, and he's staring at the screen, too.

"In race, everything inside me comes out," he says, shrugging. "Good, bad, everything. My mind, it begins to do things on its own. I do not like it, but this is the way I must go to win the race."

Over the past two years, Robic, who is 40 years old, has won almost every race he has entered, including the last two editions of ultracycling's biggest event, the 3,000-mile Insight Race Across America (RAAM). In 2004, Robic set a world record in the 24-hour time trial by covering 518.7 miles. Last year, he did himself one better, following up his RAAM victory with a victory six weeks later in Le Tour Direct, a 2,500-mile race on a course contrived from classic Tour de France routes. Robic finished in 7 days and 19 hours, and climbed some 140,000 feet, the equivalent of nearly five trips up Mount Everest. "That's just mind-boggling," says Pete Penseyres, a two-time RAAM solo champion. "I can't envision doing two big races back to back. The mental part is just too hard."

Hans Mauritz, the co-organizer of Le Tour Direct, says: "For me, Jure is on another planet. He can die on the bike and keep going."

And going. In addition to races, Robic trains 335 days each year, logging some 28,000 miles, or roughly one trip around the planet.

Yet Robic does not excel on physical talent alone. He is not always the fastest competitor (he often makes up ground by sleeping 90 minutes or less a day), nor does he possess any towering physiological gift. On rare occasions when he permits himself to be tested in a laboratory, his ability to produce power and transport oxygen ranks on a par with those of many other ultra-endurance athletes. He wins for the most fundamental of reasons: he refuses to stop.

In a consideration of Robic, three facts are clear: he is nearly indefatigable, he is occasionally nuts, and the first two facts are somehow connected. The question is, How? Does he lose sanity because he pushes himself too far, or does he push himself too far because he loses sanity? Robic is the latest and perhaps most intriguing embodiment of the old questions: What happens when the human body is pushed to the limits of its endurance? Where does the breaking point lie? And what happens when you cross the line?

The Insight Race Across America was not designed by overcurious physiologists, but it might as well have been. It's the world's longest human-powered race, a coast-to-coast haul from San Diego to Atlantic City. Typically, two dozen or so riders compete in the solo categories.

Compared with the three-week, 2,200-mile Tour de France, which is generally acknowledged to be the world's most demanding event, RAAM requires relatively low power outputs — a contest of diesel engines as opposed to Ferraris. But RAAM's unceasing nature and epic length — 800 miles more than the Tour in roughly a third of the time — makes it in some ways a purer test, if only because it more closely resembles a giant lab experiment. (An experiment that will get more interesting if Lance Armstrong, the seven-time Tour winner, gives RAAM a try, as he has hinted he might.)

Winners average more than 13 miles an hour and finish in nine days, riding about 350 miles a day. The ones to watch, though, are not the victors but the 50 percent who do not finish, and whose breakdowns, like a scattering of so many piston rods and hubcaps, provide a vivid map of the human body's built-in limitations.

The first breakdowns, in the California and Arizona deserts, tend to be related to heat and hydration (riders drink as much as a liter of water per hour during the race). Then, around the Plains states, comes the stomach trouble. Digestive tracts, overloaded by the strain of processing 10,000 calories a day (the equivalent of 29 cheeseburgers), go haywire. This is usually accompanied by a wave of structural problems: muscles and tendons weaken, or simply give out. Body-bike contact points are especially vulnerable. Feet swell two sizes, on average. Thumb nerves, compressed on the handlebars, stop functioning. For several weeks after the race, Robic, like a lot of RAAM riders, must use two hands to turn a key. (Don't even ask about the *derrière*. When I did, Robic pantomimed placing a gun in his mouth and pulling the trigger.)

The final collapse takes place between the ears. Competitors endure fatigue-induced rounds of hallucinations and mood shifts. Margins for error in the race can be slim, a point underlined by two fatal accidents at RAAM in the past three years, both involving automobiles. Support crews, which ride along in follow cars or campers, do what they can to help. For Robic, his support crew serves as a second brain, consisting of a well-drilled cadre of a half-dozen fellow Slovene soldiers. It resembles other crews in that it feeds, hydrates, guides and motivates — but with an important distinction. The second brain, not Robic's, is in charge.

"By the third day, we are Jure's software," says Lt. Miran Stanovnik, Robic's crew chief. "He is the hardware, going down the road."

Stanovnik, at 41, emanates the cowboy charisma of a special-ops soldier, though he isn't one: his background consists most notably of riding the famously grueling Paris-to-Dakar rally on his motorcycle. But he's impressively alpha nonetheless, referring to a recent crash in which he broke ribs, fractured vertebrae and ruptured his spleen as "my small tumble."

His system is straightforward. During the race, Robic's brain is allowed control over choice of music (usually a mix of traditional Slovene marches and Lenny Kravitz), food selection and bathroom breaks. The second brain dictates everything else, including rest times, meal times, food amounts and even average speed. Unless Robic asks, he is not informed of the remaining mileage or even how many days are left in the race.

"It is best if he has no idea," Stanovnik says. "He rides — that is all."

Robic's season consists of a handful of 24-hour races built around RAAM and, last year, Le Tour Direct. As in most ultra sports, prize money is more derisory than motivational. Even with the Slovene Army picking up much of the travel tab, the \$10,000 check from RAAM barely covers Robic's cost of competing. His sponsorships, mostly with Slovene sports-nutrition and bike-equipment companies, aren't enough to put him in the black. (Stanovnik lent Robic's team \$8,500 last year.)

Stanovnik is adept at motivating Robic along the way. When the mujahedeen appeared in 2004, Stanovnik pretended to see them too, and urged Robic to ride faster. When an addled Robic believes himself to be back in Slovenia, Stanovnik informs him that his hometown is just a few miles ahead. He also employs more time-honored, drill-sergeant techniques.

"They would shout insults at him," says Hans Mauritz. "It woke him up, and he kept going."

(Naturally, these tactics add an element of tension between Robic and team members, and account for his bouts of hostility toward them, including, in 2003, Robic's mistaken but passionately held impression that Stanovnik was having an affair with his wife.)

In all decisions, Stanovnik governs according to a rule of thumb that he has developed over the years: at the dark moment when Robic feels utterly exhausted, when he is so empty and sleep-deprived that he feels as if he might literally die on the bike, he actually has 50 percent more

energy to give.

“That is our method,” Stanovnik says. “When Jure cannot go any more, he can still go. We must motivate him sometimes, but he goes.”

In this dual-brain system, Robic’s mental breakdowns are not an unwanted side effect, but rather an integral part of the process: welcome proof that the other limiting factors have been eliminated and that maximum stress has been placed firmly on the final link, Robic’s mind. While his long-term memory appears unaffected (he can recall route landmarks from year to year), his short-term memory evaporates. Robic will repeat the same question 10 times in five minutes. His mind exists completely in the present.

“When I am tired, Miran can take me to the edge,” Robic says appreciatively, “to the last atoms of my power.” How far past the 50 percent limit can Robic be pushed? “Ninety, maybe 95 percent,” Stanovnik says thoughtfully. “But that would probably be unhealthy.”

Interestingly — or unnervingly, depending on how you look at it — some researchers are uncovering evidence that Stanovnik’s rule of thumb might be right. A spate of recent studies has contributed to growing support for the notion that the origins and controls of fatigue lie partly, if not mostly, within the brain and the central nervous system. The new research puts fresh weight to the hoary coaching cliché: you only think you’re tired.

From the time of Hippocrates, the limits of human exertion were thought to reside in the muscles themselves, a hypothesis that was established in 1922 with the Nobel Prize-winning work of Dr. A.V. Hill. The theory went like this: working muscles, pushed to their limit, accumulated lactic acid. When concentrations of lactic acid reached a certain level, so the argument went, the muscles could no longer function. Muscles contained an “automatic brake,” Hill wrote, “carefully adjusted by nature.”

Researchers, however, have long noted a link between neurological disorders and athletic potential. In the late 1800’s, the pioneering French doctor Philippe Tissié observed that phobias and epilepsy could be beneficial for athletic training. A few decades later, the German surgeon August Bier measured the spontaneous long jump of a mentally disturbed patient, noting that it compared favorably to the existing world record. These types of exertions seemed to defy the notion of built-in muscular limits and, Bier noted, were made possible by “powerful mental stimuli and the simultaneous elimination of inhibitions.”

Questions about the muscle-centered model came up again in 1989 when Canadian researchers published the results of an experiment called Operation Everest II, in which athletes did heavy exercise in altitude chambers. The athletes reached exhaustion despite the fact that their lactic-acid concentrations remained comfortably low. Fatigue, it seemed, might be caused by something else.

In 1999, three physiologists from the University of Cape Town Medical School in South Africa took the next step. They worked a group of cyclists to exhaustion during a 62-mile laboratory ride and measured, via electrodes, the percentage of leg muscles they were using at the fatigue limit. If standard theories were true, they reasoned, the body should recruit more muscle fibers as it approached exhaustion — a natural compensation for tired, weakening muscles.

Instead, the researchers observed the opposite result. As the riders approached complete fatigue, the percentage of active muscle fibers decreased, until they were using only about 30 percent. Even as the athletes felt they were giving their all, the reality was that more of their muscles were at rest. Was the brain purposely holding back the body?

“It was as if the brain was playing a trick on the body, to save it,” says Timothy Noakes, head of the Cape Town group. “Which makes a lot of sense, if you think about it. In fatigue, it only feels like we’re going to die. The actual physiological risks that fatigue represents are essentially trivial.”

From this, Noakes and his colleagues concluded that A.V. Hill had been right about the automatic brake, but wrong about its location. They postulated the existence of what they called a central governor: a neural system that monitors carbohydrate stores, the levels of glucose and oxygen in the blood, the rates of heat gain and loss, and work rates. The governor’s job is to hold our bodies safely back from the brink of collapse by creating painful sensations that we interpret as unendurable muscle fatigue.

Fatigue, the researchers argue, is less an objective event than a subjective emotion — the brain’s clever, self-interested attempt to scare you into stopping. The way past fatigue, then, is to return the favor: to fool the brain by lying to it, distracting it or even provoking it. (That said, mental gamesmanship can never overcome a basic lack of fitness. As Noakes says, the body always holds veto power.)

“Athletes and coaches already do a lot of this instinctively,” Noakes says. “What is a coach, after all, but a technique for overcoming the governor?”

The governor theory is far from conclusive, but some scientists are focusing on a walnut-size area in the front portion of the brain called the anterior cingulate cortex. This has been linked to a host of core functions, including handling pain, creating emotion and playing a key role in what’s known loosely as willpower. Sir Francis Crick, the co-discoverer of DNA, thought the anterior cingulate cortex to be the seat of the soul. In the sports world, perhaps no soul relies on it more than Jure Robic’s.

Some people “have the ability to reprocess the pain signal,” says Daniel Galper, a senior researcher in the psychiatry department at the University of Texas Southwestern Medical Center at Dallas. “It’s not that they don’t feel the pain; they just shift their brain dynamics and alter their perception of reality so the pain matters less. It’s basically a purposeful hallucination.”

Noakes and his colleagues speculate that the central governor theory holds the potential to explain not just feats of stamina but also their opposite: chronic fatigue syndrome (a malfunctioning, overactive governor, in this view). Moreover, the governor theory makes evolutionary sense. Animals whose brains safeguarded an emergency stash of physical reserves might well have survived at a higher rate than animals that

could drain their fuel tanks at will.

The theory would also seem to explain a sports landscape in which ultra-endurance events have gone from being considered medically hazardous to something perilously close to routine. The Ironman triathlon in Hawaii — a 2.4-mile swim, 112-mile bike ride and marathon-length run — was the ne plus ultra in endurance in the 1980's, but has now been topped by the Ultraman, which is more than twice as long. Once obscure, the genre known as adventure racing, which includes 500-plus-mile wilderness races like Primal Quest, has grown to more than 400 events each year. Ultramarathoners, defined as those who participate in running events exceeding the official marathon distance of 26.2 miles, now number some 15,000 in the United States alone. The underlying physics have not changed, but rather our sense of possibility. Athletic culture, like Robic, has discovered a way to tweak its collective governor.

When we try understanding Robic's relationship to severe pain, however, our interest tends to be more visceral. Namely, how does it feel?

"I feel like if I go on, I will die," he says, struggling for words. "It is everything at the same moment, piled up over and over. Head, muscles, bones. Nobody can understand. You cannot imagine it until you feel it."

A few moments later, he says: "The pain doesn't exist for me. I know it is there because I feel it, but I don't pay attention to it. I sometimes see myself from the other view, looking down at me riding the bike. It is strange, but it happens like that." Robic veers like this when he discusses pain. He talks of incomprehensible suffering one moment and of dreamlike anesthesia the next. If pain is in fact both signal and emotion, perhaps that makes sense. Perhaps the closer we get to its dual nature, the more elusive any single truth becomes, and the better we understand what Emily Dickinson meant when she wrote that "pain has an element of blank."

It's a gray morning in December, and Robic is driving his silver Peugeot to one of his favorite training rides in the hills along Slovenia's Adriatic coast. The wind is blowing 50 miles an hour, and the temperature is in the 40's. If Robic's anterior cingulate cortex can sometimes block out negative information, this is definitely not one of those times.

"This is bad," he says, peering at the wind-shredded clouds. "It makes no sense to train. You cannot train, and I am out there, cold and freezing for hours. I am shivering and wondering, Why do I do this?"

Robic often complains like this. Even when the weather is ideal, he points out the clouds blowing in and how horrible and lonely his workout will be. At first it seems like showboat kvetching that will diminish as he gets more familiar with you, but as time wears on it's apparent that his complaints are sincere. He isn't just acting miserable — he is miserable.

The negativity is accentuated, perhaps, by the fact that Robic trains exclusively alone. What's more, he's famously disinclined to seek advice when it comes to training, medical treatment and nutrition. "Completely uncoachable," says his friend Uros Velepec, a two-time winner of the Ultraman World Championships. Robic invents eclectic workout schedules: six hours of biking one day, seven hours of Nordic skiing the next, with perhaps a mountain climb or two in between, all faithfully tracked and recorded in a series of battered notebooks.

"I find motivation everywhere," Robic says. "If right now you look at me and wonder if I cannot go up the mountain, even if you are joking, I will do it. Then I will do it again, and maybe again." He gestures to Mount Stol, a snowy Goliath crouched 7,300 feet above him, as remote as the moon. "Three years ago, I got angry at the mountain. I climbed it 38 times in two months."

Robic goes on to detail his motivational fuel sources, including his neglectful father, persistent near poverty (three years ago, he was reduced to asking for food from a farmer friend) and a lack of large-sponsor support because of Slovenia's small size. ("If I lived in Austria, I would be millionaire," he says unconvincingly.) There is also a psychological twist of biblical flavor: a half brother born out of wedlock named Marko, Jure's age to the month. Robic says his father favored Marko to the extent that the old man made him part owner of his restaurant, leaving Jure, at age 28, to beg them for a dishwashing job.

"All my life I was pushed away," he says. "I get the feeling that I'm not good enough to be the good one. And so now I am good at something, and I want revenge to prove to all the people who thought I was some kind of loser. These feelings are all the time present in me. They are where my power is coming from."

As a young man, Robic was known as a village racer, decent enough locally but not talented enough to land a professional contract. Throughout his 20's, he rode with small Slovene teams, supporting himself with a sales job for a bike-parts dealer. It was with the death of his mother in 1997 and his subsequent depression that Robic discovered his calling. On the advice of a cyclist friend, he started training for the 1999 Crocodile Trophy, a notoriously painful week-and-a-half-long mountain bike race across Australia. Robic finished third.

In October of 2001, Robic set out to see how far he could cycle in 24 hours. The day was unpromising: raw and wet. He nearly didn't ride. But he did — and went an estimated 498 miles, almost a world record.

"That was the day I knew I could do this," he says. "I know that the thing that does not kill me makes me stronger. I can feel it, and when I want to quit I hear this voice say, 'Come on, Jure,' and I keep going."

A year later, he quit his job and volunteered to join the Slovene military, undergoing nine months of intensive combat training (he surprised his unit with his penchant for late-night training runs). He earned a coveted spot in the sports division, which exists solely to support the nation's top athletes. For Robic, the post meant a salary of 700 euros (about \$850) a month and the freedom to train full time.

This day, despite the foul conditions, Robic trains for five and a half hours. He rides through toylike stone villages and fields of olive trees; he climbs mountains from whose peaks he can see the blue Adriatic and the coast of Italy. He rides across the border checkpoint into Croatia, along a deserted beach and past groves of fanlike bamboo. He rides in a powerful crouch, his big legs churning, his face impassive.

While I watch from the car, I'm reminded of a scene the previous night. Robic and his support crew of fellow soldiers met at a small restaurant for a RAAM reunion. For several hours, they ate veal, drank wine out of small glass pitchers and reminisced in high spirits about the race. They spoke of the time Robic became unshakably convinced his team was making fun of him, and the time he sat on a curb in Athens, Ohio, and refused to budge for an hour, and the time they had to lift his sleeping body back onto his bike.

Stanovnik told of an incident in the Appalachians, when Robic, who seemed about to give up, suddenly found an unexpected burst of energy. "He goes like madman for one hour, two hours," Stanovnik recalled. "I am shouting at him, 'You show Slovenia, you show army, you show world what you are!' I have tears on my face, watching him."

At the end of the table, Rajko Petek wondered whether he could continue to work on the crew. "It is too much," he said to a round of understanding nods. "This kind of racing leaves damage upon Jure's mind. Too much fighting, too much craziness. I cannot take it anymore."

Robic sat quietly in their midst, his eyes darting and quick. Sometimes he'd offer a word or a joke, but mostly he listened. At first it seemed he was being shy, but after a while it became apparent that he was curious to hear the stories. The person of whom they spoke — this sometimes frightening, sometimes inspiring man named Jure Robic — remained a stranger to him.

Robic finishes his ride as the winter sun is going down. As we drive back toward Koroska Bela, a lens of white fog descends on the roadway. We pass ghostlike farms, factories and church spires while Robic talks about his plans for the coming year. He talks about his wife, whose job has supported them, and he talks about their son, who is starting to walk. He talks about how he will try to win a record third consecutive RAAM in June, and how he hopes race officials won't react to the recent fatalities by adding mandatory rest stops. ("Then it will not be a true race," he says.) In a few months, he'll do his signature 48-hour training, in which he rides for 24 hours straight, stays awake all night, and then does a 12-hour workout.

But this year is going to be different in one respect. Robic is going to start working with a local sports psychologist who has previously helped several Slovene Olympians. It seems that Robic, the uncoachable one, is looking for guidance.

"I want to solve the demon," he says. "I do not want to be so crazy during the races. Every man has black and white inside of him, and the black should stay inside."

He presses the accelerator, weaving through drivers made timid by the fog. "This will be good for me," he adds, his voice growing louder. "I am older now, but I have the feeling that I am stronger than ever before. Now I am reaching where there is nothing that is too hard for my body because my mind is hard. Nothing!"

Robic attempts to convey the intensity of his feeling, but can only gesture dramatically with his hands, which unfortunately are needed to control the steering wheel. The car veers toward a ditch.

Acting quickly, Robic regrips the wheel. After a shaky second or two, he regains control of the car. We barrel onward through the mist. His sidelong smile is pure confidence.