

The power of persistence

How persistence—the ability to stay focused on goals despite obstacles and adversity—makes us who we are.

BY JEREMY MERCER



WHEN LUCHIA GHEBRESLASIE arrived at the Literacy Council of Montgomery County in Rockville, Maryland, to enroll in an English program, the teachers knew it was going to be an uphill battle. It had only been a few years since Ghebreslasie and her family had been sponsored to immigrate to the U.S. by a local church, and she was still adapting to the American lifestyle. What's more, she had six children at home, which meant there was precious little free time—or personal space—to study.

And then there was the matter of her education. It wasn't just that she barely spoke English; Ghebreslasie had never even been to school before. When she was growing up in Eritrea on the Horn of Africa, one of the poorest and most strife-ridden regions in the world, her family had decided the safest thing for a young girl was to stay at home.

"I helped clean, I helped cook," says Ghebreslasie. "By 8 years old, I was a very good cook."

So, when Ghebreslasie started at the Literacy Council in November 2008, she was given the most basic English course, known as *Skill Book 1*. It was supposed to take 12 months to complete, but after the first year she wasn't close to being done. After two years, there still wasn't much progress. And by the end of the third year, people were beginning to wonder if she would ever finish.

"I don't think anybody has ever taken so much time to get through *Skill Book 1*," says Catharine Ratiner, a teacher at the Literacy Council whom Ghebreslasie likes to call "Miss Kate." "I really expected her to get frustrated and give up, but she kept getting on that bus, she kept coming to see me, she kept working at her English."

This past April, after three and a half painstaking years, Ghebreslasie finally completed the course. The directors of the Literacy Council were so impressed with her that they gave her a special Persistence Award. And, to everybody's surprise, at the awards banquet, Ghebreslasie was confident enough to stand up and give a thank you speech in English.

"It is hard," she says. "But if you try hard, it will be all right."

Ghebreslasie's words echo an age-old wisdom. Chinese philosopher Lao Tzu wrote, "Perseverance is the foundation of all actions." Plutarch noted, "Many things which cannot be overcome when they are together, yield themselves up when taken little by little." And, more recently, Benjamin Franklin declared, "Energy and persistence conquer all things."

But Ghebreslasie's story also illustrates a far more contemporary phenomenon: the new science of persistence. Researchers have located the part of the brain responsible for persistence and believe it can be physically strengthened over time. This is precisely what happened with Ghebreslasie. The incredible resilience she showed while completing the first stage of the literacy program was merely the culmination of years of daily persistence required to survive in a poor East African country and then to adjust to the complexities of American life.

This is hopeful news for us all. Just as daily push-ups give us stronger biceps, with the right mindset we can gradually strengthen our persistence "muscle." This means that in the long run, we can all have a much better chance of overcoming obstacles and achieving our goals.

In a most fundamental way, persistence has been essential to humans since the dawn of our species. After all, early hominids endured perilous climates, uncertain food sources, tribal rivalries and hungry predators. Simply put, if you weren't persistent in your quest for nourishment and shelter, you died. But in an astonishing twist, some anthropologists now believe persistence played an even more vital role in our development. Without it, we may never have evolved into humans in the first place.

Daniel Lieberman, a professor of human evolutionary biology at Harvard University, has long been fascinated by the question of why people are good at running marathons. After all, humans are one of the few mammals capable of running long distances and the only ones who attempt such feats in the heat of the day. He has come to embrace a fascinating theory: Endurance running became a favored evolutionary trait 2 million years ago when early hominids engaged in "persistence hunting."



THE DIRECTORS OF THE LITERACY COUNCIL, WHERE LUCHIA GHEBRESLASIE LEARNED TO SPEAK ENGLISH, WERE SO IMPRESSED BY THE ERITREAN IMMIGRANT'S EFFORTS THAT THEY GAVE HER A PERSISTENCE AWARD.

This technique was used before the invention of tools like bows and arrows or stone-tipped spears and relied on the fact that most animals are only capable of short bursts of speed. Early hunters would jog after large animals for hours until their prey overheated, collapsed and could be killed with little risk of getting clawed or bitten. "Our ancestors were hunting big, prime-age animals with no projectile technology," says Lieberman. "That meant they would have had to get very close to those animals to kill them, which would have been really dangerous, not to mention difficult, without persistence hunting."

In a likely scenario, persistence hunting provided nearly all the meat for early hominids. And, of course, it was this regular supply of protein-rich meat that allowed our bodies, especially our energy-thirsty brains, to grow and evolve to the point that we could create tools and develop languages, the very things that make us quintessentially human. There is even the possibility, first raised in Louis Liebenberg's book *The Art of Tracking: The Origin of Science*, that this type of persistence laid the groundwork for

our most advanced intellectual pursuits.

"Our evolutionary history as persistence hunters is also tied into our skills as scientists," says Lieberman. "A persistence hunt requires one to make hypotheses, to have a theory of mind about one's prey, and to collect and interpret lots of data about the natural world."

Considering this background, it is tempting to conclude persistence is hardwired into humans. And, in some senses, psychologists believe this may be the case. For much of the 20th century, the psychology community has been searching for a standard methodology to evaluate the human personality. The most widely accepted system has been the Five Factor Model, which assesses people based on five key traits: openness, conscientiousness, extraversion, agreeableness and neuroticism.

However, there has been a minor revolution as some psychologists argue that this is an insufficient measure. Several alternatives have been introduced, including the Seven Factor Model and the Temperament and Character Inventory. One of the defining traits in these new models? Persistence.

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CHRISTOPHER PETERSON, PSYCHOLOGIST

"There is a longstanding interest in specifying 'basic' dimensions of personality," says Christopher Peterson, a psychologist at the University of Michigan. "Persistence is important because it reflects the pursuit of valued outcomes."

Peterson is ideally placed to comment on persistence. He was part of the team of psychologists that provided the most compelling argument to date for the significance of the trait. The psychologists rolled the ideas of persistence and perseverance into the single term "grit" and defined it as "maintaining an interest in goals despite obstacles, adversity or failure." They then developed the "grit scale" (See the True Grit test on page 46) that measured this type of persistence by

having people respond to statements such as, "I often set a goal but later choose to pursue a different one" and "I have achieved a goal that took years of work."

Using this scale, thousands of students, workers and military cadets were tested for grit. The study concluded that "grittier" people generally had more years of education, got better marks and were more apt to complete specialized training programs. Most amazingly, the psychologists found no correlation between grit and IQ: a high-grit person with a medium IQ often outperformed a low-grit person with a high IQ. Persistence, they concluded, is just as crucial to success as such hallowed traits as intelligence.

These grit findings have inspired a wave of new research on the value of persistence. Most recently, an Oregon State University study that followed 430 children for 20 years showed that preschoolers who are able to pay attention and persist in their tasks are 50 percent more likely to graduate from college or university. What's especially astonishing

is that the early childhood development researchers determined persistence was a better indication of future academic success than early reading and math skills.

And Peterson says there could be even further benefits to persistence. Aside from driving our accomplishments, it might also underpin our well-being. "It is often observed that happiness cannot be pursued directly," says Peterson. "It is the by-product of other pursuits, and persistence sustains these pursuits."

There is, however, one gray lining to this otherwise silver cloud of persistence. Peterson conducted another study that measured character strengths such as modesty, curiosity, honesty and persistence in 54

countries. Levels of persistence were so negligible that he didn't have enough data to include the trait in his published paper. "By self-report measures, persistence is one of the least prevalent traits," says Peterson. "It makes sense. It is difficult to persist!"

Which raises a troubling question: If persistence is such a primal, defining trait, why is it so hard to persist?

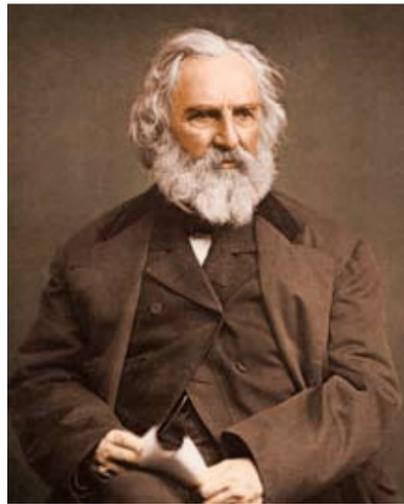
ON THE SURFACE, HENRY WADSWORTH Longfellow seems a curious spokesperson for persistence. After all, he didn't overcome any epic obstacles in his life. His poetry was acclaimed from an early age, and between his professorship at Harvard and his marriage into one of the wealthiest families in Massachusetts, his financial security was assured. What did he know of heroic struggle?

Nonetheless, high among Google search results for persistence, you will find these words from Longfellow: "Perseverance is a great element of success. If you only knock long enough and loud enough at the gate, you are sure to wake up somebody." Nor was this the only time he evoked the power of persistence. His most celebrated poem, *Evangeline*, is an homage to the persistence of a woman seeking her lost lover, while *Psalm of Life*, a poem from the 1830s, exalts those people who "still achieving, still pursuing, learn to labor and to wait."

Says Christoph Irmscher, the author of *Longfellow Redux* and *Public Poet, Private Man: Longfellow at 200*: "Longfellow's wasn't the persistence of a freedom fighter or fighting against many people antagonizing you, but a persistence people could relate to in their own lives," says "It's a quiet persistence, going on every day, doing what you have to do."

Ultimately, this is why Longfellow's vision continues to resonate with us today. The 19th century, with widespread industrialization and the rise of government social programs, was the beginning of a period of relative comfort for masses of people in Europe and North America.

With this progress, persistence was transformed from something paramount for survival into something necessary for success. It was no longer about avoiding starvation or staving off invaders; instead, it became a



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form of emotional tenacity required to overcome more mundane problems.

Of course, that's not to say epic persistence wasn't still possible. In Longfellow's era, one need only look to the battle for abolition and politicians like William Wilberforce, who fought 46 years to abolish slavery in Britain, or activists like Harriet Tubman, who walked thousands of miles on missions for the Underground Railroad. But for most people, life was a question of Longfellow's quiet persistence, the sort the poet himself displayed when he raised his children by himself after the death of his wife.

Hidden in this transition is the great paradox of modern persistence: The less vital an objective, the harder it is to persist in the pursuit of it. In fact, if you look at Abraham Maslow's hierarchy of human needs, which starts with basics such as food and shelter and peaks with abstract notions such as creativity or self-actualization, the higher a need sits on the hierarchy, the more psychologically difficult the quest to satisfy it becomes.

This is because abstract goals, such as

earning a university degree or losing weight, aren't a matter of life and death and the rewards are so far in the future that immediate sacrifices don't seem worth it. This is one reason Peterson uncovered such low rates of persistence. People rated themselves poorly because they measured themselves against the abstract goals of modern Western society. In a way, our hominid ancestors had it easy. It's pretty simple to persist in a hunt when your stomach is empty.

Which then leads us to the core of persistence: How do we learn to persist when it comes to the abstract demands of modern life? As with so many things, it turns out that persistence starts at home. A team of researchers at Brigham Young University has been carrying out a study of childhood success and happiness called the Flourishing Family Project. Over a six-year period, the researchers conducted intensive yearly interviews with 500 families in Seattle to track their behavior and attitudes. This past June, they released their findings on persistence in a report titled "Keep On Keeping On, Even When It's Hard." Their conclusion? Children raised in families with a loving but authoritative father were more likely to persist when things became difficult at school, often because it is the fathers who are involved in areas such as sports where persistence can be learned.

"We don't think of persistence as a genetic predisposition, but something that a really effective, intentional parent can teach," says Randal Day, one of the authors of the study. "Different family processes such as discipline, warmth and support contribute to children having that type of grit where they meet their goals even though it is raining outside or the chemistry class is hard or people are being nasty."

For the moment, the study is relatively limited because it involves two-parent families from similar ethnic and socioeconomic backgrounds. However, Day emphasizes that the key finding is universal: Persistence is a trait that can be cultivated at a young age. And, in a sense, Ghebreslasie's story is proof of this. Even if she wasn't in school, she was expected to contribute to the household from the moment she could walk. Those years in Eritrea taught her a simple lesson: The only way to survive in life is to keep on working.

Of course, not everybody comes from a home environment where persistence was fostered. But no worries. Researchers also say that, like riding a bicycle, healthy persistence can be learned at any age.

When students at the University of Maastricht were asked to solve mazes, read texts and squeeze handgrips, they thought it was merely a test of their physical and cognitive skills. However, there was a secret twist to the experiment. Before the final handgrip task, half the people read a neutral article while the other half read an article about Gerard van Velde, a gold-medal-winning speed skater. Van Velde was quoted as saying, "I kept telling myself, 'Don't give up, don't quit' and 'Strangely enough, you can do more than you think.'" Researchers found that a subset of the students who read the inspiring article performed better on the handgrip test, enduring more pain to keep the trigger depressed longer.

These results shouldn't surprise any athlete who has ever been roused by a coach's halftime speech. But it was some of the first scientific evidence to show that people can be unconsciously triggered to become more persistent. In a further experiment, subjects made to feel optimistic by arranging sentences involving words like "hope" and "confidence" showed greater persistence in a weight-lifting exercise.

Another study revealed that students asked to name the specific time and place they would complete an Internet questionnaire were more likely to persist and fill out the form a second time when the website crashed because the extra details had made them more attached to the task.

"There is a lot of research out there now, a lot of hardcore science, showing we can improve people's perseverance," says Hugo Alberts of the University of Maastricht, one of the lead psychologists in these experiments. "The big goal behind this is helping people become their best possible selves."

Although the experiments involved unconscious manipulation, Alberts says people can take conscious measures to improve their persistence. One simple step is to use so-called "implementation intention." Instead of saying you will exercise, tell yourself you will do 50 push-ups once the 6 o'clock news begins. This way, the goal

becomes more concrete, and the connection to real-world events creates a spur to action.

Another trick is to envision things you are thankful for in life. Alberts says practicing gratitude has been proven to increase hope and satisfaction, and goals feel more attainable when you're in a positive state of mind. Another recommendation is to make sure you truly want to achieve the goal and are not doing it to please family or earn money. According to Alberts, intrinsic motivation is a far greater boon to persistence than extrinsic motivation.

Beyond these approaches, a tenet of persistence training is to believe in yourself. People who think a goal can't be accomplished are more likely to abandon pursuit of it. A textbook example is George

Dantzig. When he was a student at the University of California, Berkeley, he arrived late to math class. The professor had been lecturing about classic statistics problems that had never been solved, but Dantzig assumed the problems on the board were the homework assignment. Thinking it was just a particularly difficult assignment, he persisted for weeks and made history by eventually solving the problems.

A case like Dantzig's is incredibly rare, but the principle of avoiding false limits applies to everybody. In the case of Luchia Ghebreslasie, it was easier to persist because the teachers at the Literacy Council of Montgomery County didn't let her know that other students completed *Skill Book 1* much, much faster, and they never

You've got to have guts

Why bacteria are among the most persistent creatures on Earth.

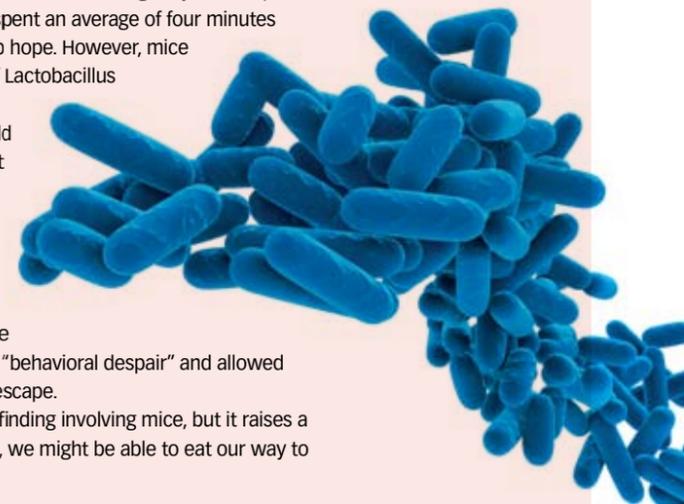
AMID ALL THE NEW SCIENTIFIC WORK BEING DONE ON PERSISTENCE, ONE OF THE most intriguing findings has come from an unexpected source: bacteria.

Bacteria and parasites can alter the behavior of their host animals. Most famous is the case of mice that carry the *Toxoplasma gondii* parasite. Because *Toxoplasma gondii* only reproduces inside a cat's intestines, the parasite causes mice to lose their natural fear of cats, thus increasing the chances that the mouse—and the parasite—will end up in a cat's stomach.

Of particular interest to persistence researchers is a study of *Lactobacillus rhamnosus*, a bacteria commonly found in yogurt, carried out by John Cryan at the University College Cork in Ireland and John Bienenstock at McMaster University in Canada. They ran an experiment in which mice were dropped into a bowl of water to see how long they would spend trying to escape. A control group spent an average of four minutes swimming around before giving up hope. However, mice who had been fed a steady diet of *Lactobacillus rhamnosus* were still trying to escape after six minutes and would have kept swimming if they hadn't been fished out of the water.

The preliminary theory is that *Lactobacillus rhamnosus* calms panic as a way to maintain a more stable host environment. This reduced panic prevented mice from falling into what is known as "behavioral despair" and allowed them to persist in their efforts to escape.

Of course, this is only an initial finding involving mice, but it raises a tantalizing possibility. In the future, we might be able to eat our way to increased persistence. | J.M.



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Through persistent study, George Dantzig was able to solve mathematical problems once considered insoluble

made her feel inadequate because of her slow progress. "I thought I was just another student," says Ghebreslasie. "Miss Kate was very nice. She always tell me, 'Keep trying, don't worry.'"

At the heart of these persistence exercises is the hope that there might be longer-term benefits for all of us. As Alberts says, "The idea is to create positive spirals of persistence. Achieving a goal makes you feel better about yourself and feeling better about yourself makes it easier to overcome the next obstacle."

And this is where the science of persistence becomes truly wondrous: We may have actual physical proof of this increased capacity for persistence. The idea that our behavior can change our brain took popular root with the work of Eleanor Maguire, a professor of cognitive neuroscience at University College London. In a landmark

paper, Maguire showed that taxi drivers who constantly exercise their spatial relations by navigating the complex streets of London without the help of a GPS system gradually build denser gray matter in the prefrontal cortex. Could the same thing happen with persistence?

The answer comes from C. Robert Cloninger, a psychiatrist and geneticist at Washington University who's been studying persistence for two decades. In the 1990s, he created the Temperament and Character Inventory that ensconced persistence as a major character trait. Later, he helped identify the neural circuits involved in persistence.

In this experiment, subjects were placed in an fMRI scanner while persisting through tiresome computer tasks; those who showed the greatest persistence also had the greatest activity in a distinct area of their orbitofrontal cortexes. Cloninger even

trained mice to become more persistent. The secret? Intermittent rewards instead of regular rewards after completing mazes.

Cloninger is on the cutting edge of persistence training, and he helped create the Anthropedia Foundation to merge neurological insights with classic coaching techniques. "I definitely find that people can exercise their capacity for persistence and other personality traits," says Cloninger. "That is how we can creatively shape the development and transformation of our personalities."

Cloninger explains that the activation of the anterior cingulate opens the bridge between the emotional brain, limbic regions like amygdala, and the prefrontal cortex. "We find that interactions between prefrontal cortex, amygdala and anterior cingulate and persistence circuitry are very prominent. So, yes, the prefrontal cortex should change following changes in persistence training."

Which, in lay terms, means we can all build a big persistence muscle in our brains.

OVER THE PAST FEW YEARS, NOBODY has embraced the new wave of persistence research as enthusiastically as teachers and educators dealing with marginalized students. The New England Literacy Resource Center commissioned a Learner Persistence Project to identify methods of improving persistence among students. Chicago State University, which caters to students from disadvantaged backgrounds, created a Persistence Award to encourage those who make an extraordinary effort to remain in school. And the Texas Association of Literacy and Adult Education has inaugurated a series of \$500 persistence awards to honor Spanish-speaking students who persevere in their efforts to learn English. All of this is based on a simple

theory: If a person can learn to persist, they can learn anything.

That's just what's happened with Luchia Ghebreslasie. Her English still isn't very good. She often needs to have questions repeated and her sentences can end up jumbled. But, undaunted by the three and a half years it took to finish *Skill Book 1*, she has now thrown herself into *Skill Book 2*. Next, she wants to improve her English enough so she can pass the U.S. citizenship exam. And then, even in this tough economy, she's going to go out and find a job.

"I don't know when," Ghebreslasie says. "It will be hard, very hard, but I will keep trying." ■

For JEREMY MERCER and his family, persistence is next to godliness; his kids may end up filthy, but they'll have a great shot at happiness and success.

True GRIT

Psychologists at the University of Pennsylvania, University of Michigan and West Point developed the Grit Scale to test their hypothesis that persistence was as important to success as intelligence. To measure your own grit, answer the following questions as truthfully as possible.

	VERY MUCH LIKE ME	MOSTLY LIKE ME	SOMEWHAT LIKE ME	NOT MUCH LIKE ME	NOT LIKE ME AT ALL
1 I have overcome setbacks to conquer an important challenge.	A	B	C	D	E
2 New ideas and projects sometimes distract me from previous ones.	A	B	C	D	E
3 My interests change from year to year.	A	B	C	D	E
4 Setbacks don't discourage me.	A	B	C	D	E
5 I have been obsessed with a certain idea or project for a short time but later lost interest.	A	B	C	D	E
6 I am a hard worker.	A	B	C	D	E
7 I often set a goal but later choose to pursue a different one.	A	B	C	D	E
8 I have difficulty maintaining my focus on projects that take more than a few months to complete.	A	B	C	D	E
9 I finish whatever I begin.	A	B	C	D	E
10 I have achieved a goal that took years of work.	A	B	C	D	E
11 I become interested in new pursuits every few months.	A	B	C	D	E
12 I am diligent.	A	B	C	D	E

SCORING

For questions 1, 4, 6, 9, 10 and 12, assign the following points:

a = 5 b = 4 c = 3 d = 2 e = 1

For questions 2, 3, 5, 7, 8 and 11, assign the following points:

a = 1 b = 2 c = 3 d = 4 e = 5

Add up all the points and divide by 12.

The maximum score on this scale is 5 (extremely gritty) and the lowest is 1 (not at all gritty).

