

Title: Bad Medicine: Misconceptions and Misuses Revealed, from Distance  
Healing to Vitamin O  
Author: Christopher Wanjek  
ISBN: 0-471-43499-X

# 1

⌘ ⌘ ⌘ ⌘ ⌘

## 10 Percent Misconception, 90 Percent Misdirection: The Brain at Work

Often it is said that we use only 10 percent of our brain. Is the brain really a vast, untapped resource of incomprehensible powers? Absolutely. I've heard countless vapid cell-phone conversations on street corners that attest to this. I remember one young lady giddy over a "brown baby pigeon" that was hopping about her feet while she was talking to her friend. The bird was a sparrow.

Remarkably, she was using nearly 100 percent of her brain in describing the "baby pigeon." Optic nerves were relaying the image of a tiny brown bird to the visual cortex way in the back of her brain via the thalamus, sort of the brain's relay station. Cochlear nerves in her ears were transmitting the electrical impulses of the sound of her friend's inane chatter through the brain stem and thalamus to the auditory cortex, where it was ultimately interpreted as language in her brain's Wernicke's area. Memory is spread widely through the brain, from the hippocampus and amygdala to the cerebral cortex, so it is not clear where the young lady was accessing the incorrect information that small brown birds in the city are baby pigeons and not sparrows. Most certainly, though, her brain stem was relaying motor function from her cerebellum and cerebral cortex to the muscles, enabling her to hold the cell

phone, turn her head, unconsciously check out a cute guy, and more or less to stand and breathe. Her brain's hypothalamus was regulating her body temperature. All and all, it was a busy time for her brain.

Our budding ornithologist might not have been using a full 100 percent of her brain on the cell phone all at once. After all, no one exercise utilizes 100 percent of one's muscle system. But she was using far more than 10 percent. More importantly, by the time she woke up in the morning after dreams of baby pigeons and cute guys, she would have used all of her brain. All of the brain's regions and many of its neurons would have gotten a workout.

Now, how you use your brain is your own business. You can read *War and Peace* or you can watch dating shows on television. While many argue that the latter is a waste of the brain's potential, no one can justifiably say that 90 percent of the brain lies dormant, like some untapped oil well, waiting to gush forth with unrealized brilliance.

The "10 percent" brain myth goes back at least a hundred years, perhaps more if one considers the teachings of transcendental meditation and the concept of maximizing the mind's power. Albert Einstein, whom no one accused of having a lazy brain, may have helped keep the myth alive when he told a reporter, wryly and perhaps sarcastically, that his brilliance came from using more than 10 percent of his brain. But this tale cannot be confirmed. Barry Beyerstein, a neurologist at Simon Fraser University in British Columbia, tried to isolate the origin of this myth in "Whence Cometh the Myth that We Only Use Ten Percent of Our Brain?," a chapter in the book *Mind Myths: Exploring Popular Assumptions About the Mind and Brain*. Beyerstein finds reference to a "silent cortex" in brain studies from the 1930s, as well as seeds of misconception from the 1800s.

The nineteenth century was a time of remarkable advancements in our understanding of the physical and biological world. The French physiologist Pierre Flourens's groundbreaking work on the brains of rabbits and pigeons in the 1820s and 1830s mapped out regions in the brain responsible for basic movements, memory, and mood. Basically, he removed parts of their brains and took

notes on what the animals could no longer do. A few decades later, Pierre Paul Broca, a French physician, isolated the region in the human brain responsible for controlling speech. He performed autopsies on stroke victims who had lost the ability to form words (but could still comprehend language). In the 1870s, Gustav Fritsch and Eduard Hitzig, two German physiologists, improved upon Flourens's work by zapping certain regions in a dog's brain with electricity and seeing which muscles moved.

The electrical zapping continued with greater precision in the 1930s. Researchers found that in all their brain volunteers, from animals to humans, there were certain regions in the brain that did not respond to stimuli. These regions were labeled the "silent cortex," and humans had a lot of them. The name was not meant to imply that the regions were inactive; merely, the electrical stimuli didn't provoke anything obvious, such as twitching. Further research has shown that the "silent cortex" is responsible for the very traits that make us human: language and abstract thought.

How can we be certain that we don't use only 10 percent of the brain? As Beyerstein succinctly says, "The armamentarium of modern neuroscience decisively repudiates this notion." CAT, PET and MRI scans, along with a battery of other tests, show that there are no inactive regions of the brain, even during sleep. Neuroscientists regularly hook up patients to these devices and ask them to do math problems, listen to music, paint, or do whatever they please. Certain regions of the brain fire up with activity depending on what task is performed. The scans catch all this activity; the entire brain has been mapped in this way.

Further debunking the myth is the fact that the brain, like any other body part, must be used to remain healthy. If your leg remains in a cast for a month, it wilts. A 90-percent brain inactivity rate would result in 90 percent of the brain rapidly deteriorating. Unused neurons (brain cells) would shrivel and die. Clearly, this doesn't happen in healthy individuals. In Alzheimer's disease, there is a diffuse 10 percent to 20 percent loss of neurons. This has a devastating effect on memory and consciousness. A person would be comatose if 90 percent of the brain—any 90 percent—were inactive.

The “10 percent” brain myth is silly even from an evolutionary standpoint. The brain is a hungry organ, requiring energy (in the form of oxygen and glucose) all day and all night. This organ, comprising only 5 percent of the body’s total weight, consumes 20 percent of the oxygen and glucose. Evolution would have never favored a big, useless “high-maintenance” brain if only 10 percent of it were vital for survival. Darwin aside, just use common sense. Never do we hear a doctor say, “Fortunately the bullet wound destroyed the 90 percent of the brain he doesn’t use. He’s good to go; call me in the morning.”

True, there are bizarre brain stories: people impaled by lead pipes and, still functioning, suddenly taking up an interest in yodeling; or people who have up to half their brain removed to control seizures. The brain never truly recovers its full capacity in these situations, but it can learn to adapt—particularly if the patient is young. The brain can reroute its wiring, or neural pathways, to maintain most of its function. Children whose parts of their brain have been damaged or removed can grow up, if treated, to lead productive and seemingly normal lives. Adults with brain damage have far greater difficulty attaining full function. This is because their streets have already been paved, unlike a child who is growing and learning. It is easier to pave a new street around a damaged area than it is to rip up an old street and start anew.

Yoga masters—and often those who are paralyzed from the neck down—learn how to better control their autonomic nervous system, that part of the nervous system responsible for things we do automatically without “thinking,” such as breathing and regulating blood flow. For example, you are walking down a dark street and suddenly a mugger jumps in front of you with a knife. Your heart starts pounding. The rise in heart rate is a result of the sympathetic autonomic nervous system, the fight-or-flight response. Conversely, the parasympathetic autonomic nervous system will lower your heart rate and metabolism rate, allowing your body to conserve energy during times of rest. When you control your autonomic nervous system with your brain, you are not using any new brain parts. You are simply more conscious about using sections of the brain you have used all your life. Yoga masters have been known to lower their pulse rate well into the 30s, compared to a

resting pulse rate of 70 or so for most other people. Paralyzed individuals can learn how to regulate their bowels, and, in the case of men, even achieve penile erection by controlling autonomic nerves with their brain. But none of this is the unused 90 percent that psychics and other frauds talk about.

The “10 percent” figure popped up somewhere in the twentieth century. At first, the language was nonspecific, with lines such as “Scientists say we don’t use most of our brain’s power.” In 1944 an ad for the Pelman Institute, which offered self-improvement courses, appearing on the inside front cover of a wartime Penguin edition of Stella Gibbons’s novel *Cold Comfort Farm*, was perhaps one of the first to nail down a number:

What’s holding you back? Just one fact—one scientific fact. That is all. Because, as Science says, you are using only one-tenth of your real brain-power!

This is where the psychics and believers in extrasensory perception (ESP) pick up the ball. The mantra of those people who harness the Force as adeptly as Luke Skywalker is that your “other 90 percent” of the brain has the power to sense and move what the mundane 10 percent cannot. Uri “Sorry, I can’t bend this spoon in a controlled laboratory setting” Geller is a magician who claims to use his brain to move objects without touching them and to read other people’s minds. He’s quite successful. With his clever brain, Geller mysteriously convinces fools to reach into their wallets and fork over big bucks to buy his books and to watch him perform. He’s a consummate mind reader, knowing what his audience will fall for. In the introduction to his 1996 book, *Mind Power*, he writes:

[M]ost of us only use about 10 per cent of our brains, if that. . . . I believe that we once had full power over our minds. We had to, in order to survive, but as our world has become more sophisticated and complex we have forgotten many of the abilities we once had.

Makes sense to me: the proliferation of books, quantum mechanics, superconductivity, semiconductors, laser surgery, X-ray telescopes that can probe black-hole event horizons . . . all these

things are making us stupid! Me hunt, me eat. That's the kind of stimuli we need. I will build shelter and a fire with my ability to mind-bend this spoon. Why is it that Geller can use his mind power to bend a spoon and not a lever in a Coke machine to get a free drink? Beats me. I must be part of the 10-percent-and-under crowd.

One cannot even speak of 10 percent in a diffuse sense, that our brains are only 10 percent full of knowledge. There's no limit to the mind's ability to store knowledge. This would be like saying we use only 10 percent of our ears because we never listen to 90 percent of the world languages, or 10 percent of our taste buds because we never eat 90 percent of the foods that others eat.

Metaphorically, this great brain tithing is a reflection of our deep-seated human inferiority complex: ancient civilizations could not have accomplished what they did on their own, we say; there must have been aliens guiding them or they must have moved massive stones with their minds. If Einstein could determine that mass distorts space in such a way to produce gravity, we say, he must have had access to a different part of the brain than I do. However, we cannot ignore the core message of the Uri Gellers and the fraudulent psychics—that humans often fail to attain their fullest potential. We can, as a species, rise above the ignorance of bigotry or fraud or malice, not by tapping into unused mystic portions of our brains but by reveling in the pursuit of knowledge.

Well, maybe tomorrow. There's a rerun of *Married with Children* on the tube.