

This Is Your Brain at 100%: Movies and old-fashioned marketing help to perpetuate a brain myth held by many.

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“The average person uses 10% of their [brain](#) capacity. Imagine what she could do with 100%.” So says a poster for *Lucy*, the 2014 action thriller starring Scarlett Johansson. I must admit that sounds intriguing. It also sounds very familiar. That’s because Hollywood loves to revive the 10% myth every few years (e.g., *Phenomenon*, 1996; *Limitless*, 2011) and I can see why. If the acting, writing, and directing all come together the result can be box office gold. Since *Lucy*’s theatrical release last year, the movie has pulled in \$126 million in the U.S. and over \$300 million internationally. This isn’t even counting the DVD sales. Not bad for a movie with a \$40 million production budget and an idea so flawed I’m compelled to write about it.

First thing's first. Movies are supposed to be fun. For some, it is a temporary escape from everyday life. For others, it is an excuse refill the year-long bottomless bucket of popcorn they were tricked into buying a few weeks ago for \$26.75. Either way, if you are the person who points out every inconsistency in editing I don’t want to sit next to you. *Note to that person: I am aware that Sonny Corleone died in hail of gunfire yet his car windshield was miraculously unblemished seconds later. This trivia does not affect my judgment of the greatest movie ever made.*

So I always try hard not to criticize the script supervisor for minor continuity mistakes, but I do feel the need to address large medical blunders when I see them. When someone says you are only using 10% of your brain what does that mean? And how do we know that we only currently use 10%? We would have to know what 100% capacity looks like before we can say we presently use 10%. Right? Here is the science behind it all.

Have you ever met anyone who is missing 90% of their brain? Probably not. If you have you could ask them what congressional district they represent. Whammy.

You’ve never heard of anyone with that much brain missing because pretty much all areas of the brain are active. They wouldn’t be able to function with just that tidbit of grey matter. Even the regions of cortex in blind people that normally process vision are co-opted for other functions. Everyone makes use of the entire brain.

Neuroscientists say that the brain uses about 20% of the body’s energy and it would not make much sense to dedicate so many resources to such a small percentage of the brain. Along those lines, biologists say that we would not have evolved such big brains (about 1400 cubic centimeters) if we were only using just a little bit.

Who was the first to float this idea anyway? One possibility is William James, one of the great experimental psychologists from the early 20th century. He basically argued that we only operate on a fraction of our full mental potential and we can raise [IQ](#) by tapping into this unused portion.

Another possibility comes from the world of [marketing](#). Apparently, the 10% idea goes back at least as far as a 1929 [self-help](#) ad that states, “There is no limit to what the human brain can accomplish. Scientists and psychologists tell us we use only about ten per cent of our brain power.”

My favorite origin theory points to Wilder Graves Penfield, a Montreal Neurosurgeon once named the “greatest living Canadian,” who spent a great deal of time in the 1940s and 50s poking around the brains of fully awake, conscious people. There are no pain receptors in the brain so once you apply local anesthetic and cut into the skull you can prod all you want with an electric probe. Penfield documented, correctly I might add, that only 10% of his probes resulted in observable events. A blink, a twitch, humming, left big toe wiggling, etc. Somehow this got twisted and shortened to “90% of the brain is not being used”. The truth is, of course, that 90% of the time the brain is just doing something that is not a detectable event like retrieving a [memory](#) or pondering the future.

It should surprise no one that Hollywood keeps revisiting the 10% brain concept. Would it not be supercool to somehow unlock reserves of psychic power to win over friends and dominate enemies? Certainly. But that's a myth as giant as bigfoot. In real life, at least for now, we'll just have to figure out a way to use the brains we've got. Have a good time at the movies. If you need me I'll be busy writing a script about a man who strings together a series of around-the-world first-class vacations while only using up 10% of his checking account. Sci-fi at its best.