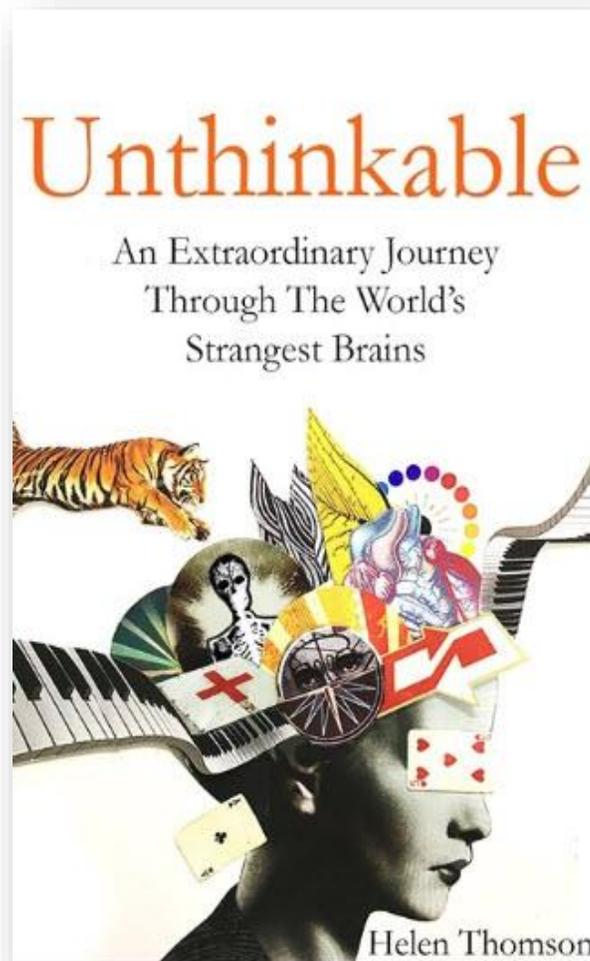


Helen Thomson's *Unthinkable: An Extraordinary Journey Through the World's Strangest Brains*

Review by Richard Restak, Ph.D.



*Editor's Note: Unthinkable's author, a British neuroscientist, tracked down nine people with rare brain disorders to tell their stories. From the man who thinks he's a tiger to the doctor who feels the pain of others just by looking at them to a woman who hears music that's not there, their experiences illustrate how the brain can shape our lives in unexpected and, in some cases, brilliant and alarming ways.*

Several years ago, science writer Helen Thomson, consultant to *New Scientist* and contributor to the *Washington Post* and *Nature*, decided to travel around the world to interview people with "the most extraordinary brains." In the process, as described in *Unthinkable: An Extraordinary Journey Through the World's Strangest Brains* (Ecco/Harper Collins 2018), Thomson discovered that "by putting their lives side-by-side, I was able to create a picture of how the brain functions in us all. Through their stories, I uncovered the mysterious manner in which the brain can shape our lives in unexpected—and, some cases, brilliant and alarming ways." Thomson wasn't just learning about the most extraordinary brains in the world, but in the process was "uncovering the secrets of my own."

During her journey Thomson encounters Bob, who can remember days from 40 years ago with as much clarity and detail as yesterday; Sharon, who has lost her navigational abilities and on occasion becomes lost in her own home; Tommy who, after a ruptured aneurysm that damaged his left temporal lobe, underwent a total personality change; Sylvia, an otherwise normal retired school teacher who experiences near constant musical hallucinations; and Louise, who is afflicted with a permanent sense of detachment from herself and everyone around her. Beyond skillfully portraying each of these and other fascinating individuals, Thomson places them in historical and scientific context: when neuroscientists first encountered similar patients, along with past and current explanations of what has gone amiss in their brains.

Her stories often go into fascinating detail. In Abu Dhabi Thomson meets Matar, a man now in his 40s who was diagnosed in his teens with schizophrenia after he called the police in response to hallucinations of a bomb attack on his village. As an adult, Matar began to experience himself turning into a tiger. During one of these episodes he locked himself in his room for fear that he might wander outside and eat someone. Such feelings could arise at any time. On one occasion, while having his hair cut he felt himself turning into a tiger and tried to bite the barber.

Matar's affliction, lycanthropy (the delusion of transforming into an animal), is extremely rare. By one estimate, only 13 cases have been reported over a span of 162 years. When Thomson introduced herself to Matar in the company of his psychiatrist, she becomes understandably alarmed. "My gut clenches," she says, at Matar's comment: "You feel like a lion to me, I want to attack you before you attack me." It turns out that Matar's off-putting comment is the result of his failure to have taken his medications that morning.

Because Matar's brain imaging studies are normal and lycanthropy is so rare, Thomson seeks explanations in more common disorders "in which people feel like their limbs are unwanted, are present when they are not, or have grown smaller or larger." She deftly describes phantom limb (the retained sense that an amputated limb is still there) and its likely cause: those areas of the brain that formerly processed sensations from the missing limb are taken over by neurons that process information from other parts of the body. This neuronal reassignment leads to the mistaken sensation when rubbing the face, for instance, that it's the absent limb that is being touched.

Throughout this captivating book, Thomson suggests exercises that aim to give the reader some feeling for what her subjects are experiencing. To make phantom limb more understandable, for example, she suggests using an inflated rubber glove and two small brushes. When the rubber glove, shaped in the form of one hand, is set on a table beside a person's real opposite hand, a feeling that the rubber hand is one's own occurs a few seconds after a confederate begins simultaneously brushing both the rubber and the real hand.

Another exercise uses a table-tennis ball (split in half with each half taped to cover one eye) and a pair of headphones (as a source of white noise) to induce sensory deprivation. This is followed, after varying periods of time, by visual and/or auditory hallucinations. Thomson carried out the experiment on herself and, sure enough, half an hour later, she experienced a visual hallucination of a man reaching out to her. After a few seconds the man disappeared. Her hallucination "differed from a dream or from a random image plucked from my imagination. It was an intriguing demonstration of what can occur when our senses are impaired." Neuroscientists who study

hallucination speculate that under-activity of its sensory centers prods the brain to create hallucinations to fill in the gaps.

In most of the patients encountered by Thomson, brain imaging studies are normal. An exception is Graham, a 57-year-old who is convinced, against all arguments, that he is dead. This rare disorder, Cotard's syndrome, was first described by 19th century French neuropsychiatrist Jules Cotard.

When Graham undergoes a positron emission tomography (PET) scan, which measures metabolic activity, such activity is so reduced over large areas of Graham's brain that it looks like the scan of someone who is asleep or in a coma. Especially affected was the dorsolateral prefrontal cortex—an area associated with self-evaluation and the formation of beliefs. Most likely this is the basis for Graham's refusal to be convinced, despite all evidence to the contrary, that he is not dead. "How can you rationalize with someone if the part of their brain responsible for rationalizing has become irrational," asks Graham's neurologist. In response Thomson suggests "when the brain is faced with conflicting information, it tries very hard to make sense of the new scenario and generally lands upon the simplest narrative to explain an abnormal experience."

*Unthinkable* is highly recommended. If you're a neuroscientist, you are almost certain to learn something interesting unrelated to your field of specialization. If you are a general reader, you will find the book a cornucopia of fascinating, often bizarre and unforgettable characters. And if you ponder what you have read after finishing *Unthinkable*, you may well agree with Thomson that "the strangest, most unique brains are often those that teach us the most about our own."

## **Bio**

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