



## Science Doesn't Know Where You Are

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The following was extracted, with permission, from Hogan's book, *Your Eternal Self*, published in 2009 by Greater Reality Publications, pages 1 – 10.

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**Y**ou are not your body. The body changes constantly. The body you had at age 10 when you could run like a rabbit was a different body than you have at age 90 when you shuffle like a turtle, and the molecules in it have been replaced 80 times! Last year's body is different from this year's body. The body is just flesh and bone, made of the same atoms as a bowl of warm Irish stew. That's not you.

So, when you talk to me, you'll insist you're not talking to any part of my body, or even the tofu-like mush inside my skull. You're talking to *me*. You know implicitly that you and I are above and aside from the skin and the brain.

You aren't the body. You're the mind that is greater than the body, and that means you're greater than the brain. So if your mind is greater than the brain, where are you?

We'll start by correcting a common misconception. You likely have the belief that science has evidence your mind is in the three to five pounds of fat and protein compressed inside your skull. That's what you were taught in school.

But the fact is that neuroscience can't explain how people have a conscious experience, where the mind is, what memories are, or where memories are stored. That's pretty remarkable considering that the brain has been carefully mapped using CTs, MRIs, PETs, and EEGs to find out which parts of the brain are active when a person is performing activities. In spite of all

the brain mapping that's been done, they can't locate the mind and they can't find memories.

Many neuroscientists are also saying that even if someone could locate mind and memories in the brain, that still wouldn't explain who has the conscious thought. In other words, yes there's a thought, but who is thinking? Who requested the thought? Yes, the brain shows activity when there's a thought, but what caused the brain to show activity? How does a human being have a conscious experience?

That's known as the "problem of consciousness" or the "hard problem," and all neuroscientists acknowledge it. They can't find a mind or memories in the brain and they don't know how the brain creates the mind. Statements by a sampling of neuroscientists illustrating this problem follow. Here and elsewhere in this book, cited writers sometimes use "consciousness" to refer to the mind. I usually use "mind" because that is the common term we all use to refer to the inner part of us that thinks, feels, and decides to act.

Stephan Patt of the Institute of Pathology at Friedrich Schiller University in Germany summarized the research on the mind and the brain:

*Nevertheless all these experiments and descriptions of brain activation processes do not explain how neural activity is the cause for consciousness. Likewise, all attempts which have been undertaken to specify the neurological mechanisms of consciousness in terms of neurobiological, information processing and even social theories of consciousness have failed to prove this causal relationship.<sup>1</sup>*

Sir John Maddox, former editor-in-chief of the renowned journal *Nature*, summed up our knowledge of consciousness in the December 1999 issue of *Scientific American*:

*Nobody understands how decisions are made or how imagination is set free. What consciousness consists of, or how it should be defined, is equally puzzling. Despite the marvelous success of neuroscience in the past century, we seem as far from understanding cognitive processes as we were a century ago.*<sup>2</sup>

Stuart Hameroff, MD, a respected researcher in neuroscience in the Department of Anesthesiology, Arizona Health Sciences Center, wrote:

*Consciousness defines our existence and reality. But how does the brain generate thoughts and feelings? Most explanations portray the brain as a computer, with nerve cells ("neurons") and their synaptic connections acting as simple switches, or "bits" which interact in complex ways. In this view consciousness is said to "emerge" as a novel property of complex interactions among neurons, as hurricanes and candle flames emerge from complex interactions among gas and dust molecules. However this approach fails to explain why we have feelings and awareness, an "inner life." So we don't know how the brain produces consciousness.*<sup>3</sup>

David Presti, Ph.D., professor of neurobiology, University of California-Berkeley, wrote:

*Despite the awesome achievements of 20th-century neuroscience in increasing our knowledge about the workings of the human brain, little progress has been made in the scientific understanding of mental phenomena.*<sup>4</sup>

David J. Chalmers, Ph.D., director of the Centre for Consciousness at the Australian National University, wrote in *Scientific American*:

*Consciousness, the subjective experience of an inner self, could be a phenomenon forever beyond the reach of neuroscience. Even a detailed knowledge of the brain's workings and the neural correlates of consciousness may fail to explain how or why human beings have self-aware minds.*<sup>5</sup>

Other researchers report that efforts to find the locations of memories in the brain have

proven to be unsuccessful. Karl Lashley, a renowned psychologist and researcher in the field of learning and memory, failed during his entire career to find the location of memories in the brain. It prompted him to write, "Memory ought to be impossible, yet it happens."<sup>6</sup>

Brian Boycott, a biologist specializing in the study of memory, summarized the inability to find memory in any specific location in the brain: "Memory seems to be both everywhere and nowhere in particular in the brain."<sup>7</sup>

Wilder Penfield, founder of the Montreal Neurological Institute, was able to stimulate the brain to produce segments of memories,<sup>8</sup> and neurosurgeons at the Toronto Western Hospital have stimulated the brain to recall a scene from decades before in the patient's memory.<sup>9</sup> However, where the memories are stored, how the mind can intend to recall a memory, and how memories are archived are not known.

Science simply doesn't know how the mind is produced or where it's located, even though the brain has been carefully studied and mapped. That has led science to begin looking elsewhere for the mind.

### **Many Scientists Are Suggesting Your Mind Is Not in Your Brain**

Because scientists can't find the mind in the brain, many are beginning to suggest that the mind isn't in the brain at all.

Dr. Sam Parnia, a physician from Southampton General Hospital in England, has been studying near-death experiences among his patients. The results were published in the February 2001 issue of the journal *Resuscitation* and presented to a gathering of scientists at the California Institute of Technology in June 2001. Following is a segment of an interview he gave to the Reuters news service:

"The brain function these [near-death] patients were found to have while unconscious is commonly believed to be incapable of sustaining lucid thought processes or al-

lowing lasting memories to form," Parnia said— pointing to the fact that nobody fully grasps how the brain generates thoughts.

"The brain itself is made up of cells, like all the body's organs, and is not really capable of producing the subjective phenomenon of thought that people have," he said.<sup>10</sup>

Simon Berkovich, professor of engineering and applied science in the Department of Computer Science at George Washington University wrote,

*The brain is merely a transmitter and receiver of information, but not the main place for storage or processing of information (i.e., memories).*<sup>11</sup>

Stanislav Grof, MD, Ph.D., Freudian psychoanalyst, professor of psychiatry at Johns Hopkins University School of Medicine, and chief of psychiatric research at the Maryland Psychiatric Research Center, concluded after his lifelong study of the mind and the brain,

*My first idea was that [consciousness] has to be hardwired in the brain. I spent quite a bit of time trying to figure out how something like that is possible. Today, I came to the conclusion that it is not coming from the brain. In that sense, it supports what Aldous Huxley believed after he had some powerful psychedelic experiences and was trying to link them to the brain. He came to the conclusion that maybe the brain acts as a kind of reducing valve that actually protects us from too much cosmic input.... I don't think you can locate the source of consciousness. I am quite sure it is not in the brain—not inside of the skull.... It actually, according to my experience, would lie beyond time and space, so it is not localizable. You actually come to the source of consciousness when you dissolve any categories that imply separation, individuality, time, space and so on. You just experience it as a presence.*<sup>12</sup>

The same conclusion was reached independently by other brain specialists. Sir John Eccles, internationally recognized brain researcher whose work has had a major influence on brain research, concluded:

*... that the mind is a separate entity from the brain, and that mental processes cannot be reduced to neurochemical brain processes, but on the contrary direct them. And ... a mind may conceivably exist without a brain.*<sup>13</sup>

Sir Cyril Burt, educational psychologist known for his studies on the effects of heredity on intelligence, wrote in his book, *The Gifted Child*,

*The brain is not an organ that generates consciousness, but rather an instrument evolved to transmit and limit the processes of consciousness and of conscious attention so as to restrict them to those aspects of the material environment which at any moment are crucial for the terrestrial success of the individual. In that case such phenomena as telepathy and clairvoyance "would be merely instances in which some of the limitations were removed."*<sup>14</sup>

Another brain specialist, Wilder Penfield, was a ground-breaking neuroscientist and physician. While performing surgery on patients, he noticed that stimulating a part of the brain cortex could cause the patient to recall a memory. However, while recalling the memory, the person's conscious awareness was still active, aside from the memory, and no stimulation of any part of the brain could cause any of the actions we associate with the mind: beliefs, problem solving, decisions, or any of the other activities that happen when a person is "thinking." The mind activities went on even when he was stimulating the brain cortex, and were completely unaffected by any stimulation he applied to the brain.

Penfield could stimulate small segments of memories, but he couldn't locate the mind inside the brain. He summed up the conclusions he formed on the basis of these experiments:

*... none of the actions that we attribute to the mind has been initiated by electrode stimulation or epileptic discharge. If there were a mechanism in the brain that could do what the mind does, one might expect that the mechanism would be-*

*tray its presence in a convincing manner by some better evidence of epileptic or electrode activation.*

The mind, he wrote, "makes its impact on the brain" but isn't in the brain.<sup>15</sup>

Neuroscientists can't tell us how we have a conscious experience or where the mind is. Some scientists have come to the conclusion that perhaps the mind isn't in the brain at all.

That's why we know we're not speaking to the body when we speak to one another, and why we know the mind is greater than and aside from the body. The remainder of this chapter contains evidence demonstrating that the scientists coming to that conclusion are correct: your mind is not inside your brain.

### **The Brain Doesn't Have the Capacity to Hold the Mind or Memories**

Pim van Lommel is a cardiologist and author of an article in the medical journal, *The Lancet* (December 2001). His conclusions were summarized by Tim Touber:

*Van Lommel contends that the brain does not produce consciousness or store memories. He points out that American computer science expert Simon Berkovich and Dutch brain researcher Herms Romijn, working independently of one another, came to the same conclusion: that it is impossible for the brain to store everything you think and experience in your life. This would require a processing speed of 1024 bits per second. Simply watching an hour of television would already be too much for our brains. "If you want to store that amount of information—along with the associative thoughts produced—your brain would be pretty much full," Van Lommel says. "Anatomically and functionally, it is simply impossible for the brain to have this level of speed."<sup>16</sup>*

While small segments or individual scenes of memories can be re-experienced when the brain is stimulated,<sup>17</sup> where those memories are

stored is not known, and it seems apparent that the brain doesn't have the capacity to hold them.

Not only does the brain not have the capacity to hold the memories, but many brain cells die and are replaced every second of our lives. For the memories to remain over 50 or 60 years, the brain cells would have to remain the same ones that were there when the memories were created, but that doesn't happen since they're replaced by new brain cells regularly. Dean Radin, senior scientist at the Institute of Noetic Sciences, professor at Sonoma State University, and distinguished consulting faculty member at Saybrook Graduate School and Research Center, explains this further indication that memories couldn't remain stored in the brain:

*Consider a profound mystery in biology that is not accounted for by classical assumptions: The average neuron consists of about 80 percent water and about 100,000 molecules. The brain contains about 10 billion cells, hence about 10<sup>15</sup> molecules. Each nerve cell in the brain receives an average of 10,000 connections from other brain cells, and the molecules within each cell are renewed about 10,000 times in a lifetime. We lose about 1,000 cells a day, so the total brain cell population is decimated by about 10 million cells, losing in the process some 100 billion cross-linkages.<sup>18</sup>*

Some sources today estimate that from 50,000<sup>19</sup> to 100,000<sup>20</sup> brain cells die each day. In spite of the loss of brain cells and the fact that the molecules within each brain cell are renewed about 10,000 times in a lifetime, memories from our childhood of many places we've visited can be recalled in great detail. People in old age report flashbacks of memories having remarkable clarity that they haven't recalled for decades.

Dean Radin quotes Paul A. Weiss, of Vienna's Institute of Experimental Biology, a pioneer in biology research, who also pointed out that memories remain intact in spite of the loss of brain cells and replacement of molecules in brain cells:

*And yet, despite that ceaseless change of detail in that vast population of elements, our basic patterns of behavior, our memories, our sense of integral existence as an individual, have retained their unitary continuity of pattern.*<sup>21</sup>

That fact is another indication that memories are not stored in brain cells.

### **Missing Large Parts of the Brain Doesn't Affect Memory**

People missing half their brain after surgery function almost perfectly normally, suggesting that the mind must be functioning outside of the brain. The procedure, called a hemispherectomy, removes half of the brain from the patient's head. The operation has been performed hundreds of times for disorders that can't be controlled using any other treatments. Remarkably, even when half of the brain has been removed, the patients retain their personalities and memories.<sup>22</sup> In fact, a study of children who had half their brains removed found they often were able to perform better in their school work.<sup>23</sup>

A number of instances have been recorded in which an adult was found to have virtually no brain, but had functioned from childhood through adulthood as a perfectly normal person; a brain wasn't necessary for normal daily func-

tioning or storing and recalling memories. This account is from a July 19, 2007, story on Reuters:

*A man with an unusually tiny brain managed to live an entirely normal life despite his condition caused by a fluid buildup in his skull, French researchers reported on Thursday.*

*Scans of the 44-year-old man's brain showed that a huge fluid-filled chamber called a ventricle took up most of the room in his skull, leaving little more than a thin sheet of actual brain tissue.*

*"He was a married father of two children, and worked as a civil servant," Dr. Lionel Feuillet and colleagues at the Universite de la Mediterranee in Marseille wrote in a letter to the Lancet medical journal.... "What I find amazing to this day is how the brain can deal with something which you think should not be compatible with life," commented Dr. Max Muenke, a pediatric brain defect specialist at the National Human Genome Research Institute.*<sup>24</sup>

That provides evidence for the suggestion that the mind isn't in the brain. Mind and memory function perfectly well when half the brain is removed or the brain doesn't develop fully.

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Notes:

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- <sup>1</sup> Patt, S., "Brain Localization of Consciousness? Neurological Considerations," retrieved from Internet October 21, 2007.
- <sup>2</sup> Schroeder, G.L., *The Hidden Face of God*, Simon and Schuster, 2001, p. 158.
- <sup>3</sup> Hameroff, S., Overview: Could Life And Consciousness Be Related To The Fundamental Quantum Nature Of The Universe? *Quantum Consciousness*, retrieved from <http://www.quantumconsciousness.org/overview.html>, December 15, 2007.
- <sup>4</sup> Presti, D., review of Wedard F. Kelly, et al., *Irreducible Mind: Toward a Psychology for the 21<sup>st</sup> Century*. retrieved from <http://www.romanlittlefield.com/Catalog/...>, October 5, 2007.
- <sup>5</sup> Chalmers, D.J., "The Puzzle Of Conscious Experience," *Scientific American*, special issue, "Mysteries of the mind." retrieved from <http://www.healthstones.com...>, October 5, 2007.
- <sup>6</sup> Sheldrake, R., "Nature As Alive: Morphic Resonance And Collective Memory," *Primal Spirit*. retrieved from Internet October 7, 2007.
- <sup>7</sup> \_\_\_\_\_.
- <sup>8</sup> Carter, C., Rebuttal to Keith Augustine's attack on "Does Consciousness Depend On The Brain?" retrieved from <http://www.survivalafterdeath.org/articles/carter/augusting.htm>, May 30, 2007.
- <sup>9</sup> Hamani, C., M.P. Andrews, M. Cohn, et. al., "Memory enhancement induced by hypothalamic/fornix deep brain stimulation," *Annals of Neurology*, 63, 2008.
- <sup>10</sup> Tippit, S., *Study suggests life after death: brains of dead heart attack patients still function*. retrieved December 8, 2007 from <http://neardeath.home.comcast.net/news/020629.html>.
- <sup>11</sup> Berkovich, S. (n.d.) "A Scientific Model Why Memory Aka Consciousness Cannot Reside Solely In The Brain," retrieved October 25, 2007, from <http://www.nderf.org/Berkovich.htm>.
- <sup>12</sup> Grof, Stanislav, in *Life After Death: The Testimony of Science*, documentary by Tom Harpur, Wellspring Media, 1998.
- <sup>13</sup> Carter.
- <sup>14</sup> Burt, C. *The Gifted Child*, Wiley, 1975.
- <sup>15</sup> Carter.
- <sup>16</sup> Touber, "Life Goes On," *Ode*, 29, 2007.
- <sup>17</sup> Hamani and Carter
- <sup>18</sup> Radin, D., *The Conscious Universe: The Scientific Truth of Psychic Phenomena*, Harper Collins Publishers, 1997, p. 259.
- <sup>19</sup> Mars, B., "Improve Your Brain Power – With a Healthy Diet," BNET Research Center.
- <sup>20</sup> Restak, R., cited in *Gadflies*, Cy Wenberg, Trafford Publishing, 2006, p. 596.
- <sup>21</sup> Weiss, P.A., "The Living System: Determinism Stratified," in *Beyond Reductionism*, eds. A. Koestler and J.R. Smythies, Hutchinson, 1969.
- <sup>22</sup> Choi, C. "Strange But True: When Half a Brain Is Better Than a Whole One," *Scientific American* website, May 24, 2007.
- <sup>23</sup> \_\_\_\_\_.
- <sup>24</sup> "Tiny-Brained Man's Lifestyle Wows Doctors," Reuters/MSNBC, July 19, 2007.