

BOOK REVIEW

Permanent Present Tense: The Unforgettable Life of the Amnesic Patient, H.M.

By Suzanne Corkin

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Though much of the human brain is still a mystery, the study of human memory has made enormous strides. One can learn about the evolution of knowledge on human memory from reading primary literature and psychology textbooks. On the other hand, it is incredibly helpful to have this information presented in the context of what is arguably the most famous case study of memory. In the book *Permanent Present Tense: The Unforgettable Life of the Amnesic Patient, H.M.*, Suzanne Corkin created more than just a biography of the famous H.M. She combines a historical account on the field of psychological research and a scientific perspective on the study of human memory. The story of H.M. is known to nearly everyone who has cracked open a psychology or neuroscience textbook. This famous case has been pivotal to scientists since H.M.'s bilateral medial temporal resection in 1953. Although many scientists have studied H.M. and have published scientific papers about his memory and brain, few written works consider H.M. from a biographical standpoint. Suzanne Corkin was privileged to know Henry Gustave Molaison well-enough to provide a description of his personal life.

Corkin relates information on a wide range of knowledge that has been acquired thus far on human memory. To deal with the overwhelming amount of studies, theories, and conclusions, Corkin places the evidence on brain functions into the context of Henry's brain. She wisely chooses to address the brain by separating its functions into categories, such as short-versus long-term memory, perceptual memory, and motor skill learning. Corkin writes about how scientists questioned if short- and long-term memory processes were located in separate brain regions. She then provides readers with past and current theories on the matter, along with various studies that have been performed to explain the separation. Readers with a solid base in psychology will easily recognize the established theories and psychologists to which Corkin refers. She follows this basic set-up for each category of research that she addresses. Henry provides the true framework of her book; she usually begins each section with Henry's abilities or deficits in an area, and describes, often in great detail, the laboratory experiments performed on Henry. In following this pattern, Corkin tactfully makes the vast realm of brain functions and aspects of memory seem much more manageable.

Intertwined with these biological and psychological inquiries, Corkin raises other, not-so-easily-answered, metaphysical and philosophical questions. By placing the study of the human brain and memory in the context of

Henry's life, Corkin questions the concept of self-identity and what life could be like for one who lacks a long-term memory. Thus, Corkin has created a book with factual details of the human brain and a historical look at the study of memory encompassed in an inspirational story that evokes thoughts and emotions from its readers.

It is horrible to imagine what it might be like to go through life severely brain damaged. Some individuals have raised controversy regarding if Henry's misfortune should have been used as an excuse to turn him into a laboratory experiment (Banyard and Flanagan, 2011). Soon after surgery and well into old age, Henry frequently engaged in laboratory testing. The instant that he passed away, he was dehumanized as his brain was shipped off for additional tests and histological analysis. Scientists who worked with Henry for years may have cared for him, but they also maintained a high degree of clinical distance that showed in their very business-like treatment of Henry's post-mortem brain. Despite this, Corkin successfully wrote a scientific account of H.M.'s severe deficits while still reminding the reader that Henry deserved respect as a human being. Corkin always showed care and sensitivity towards Henry. She demonstrated her care by referring to Henry by his name rather than by his initials, and by including humorous and touching anecdotes from Henry's life. At times, readers may get caught up in details of scientific studies and brain anatomy, but they are continually bounced back to Henry's story with snapshots of his personal life. In this way, Corkin establishes Henry as more than just a case study. Additionally, readers are able to understand a basic overview of Henry's contribution to science in a story-like format.

From the in-depth analysis of Henry's brain that can now be done, the Brain Observatory at the University of California San Diego is working on "Project H.M." to create a 3-D representation of Henry's brain. The 3-D model will allow the world to view his brain and study very specific bits of information learned from individual slices or MRI scans. This information may prove to be very important to the advancement of memory research. Corkin, however, does not include much of this analytical aspect, instead building her book solely on the information acquired from Henry during his life. She merely includes a brief description of the process taken to analyze and preserve Henry's brain after death. A controlled neuroscience experiment on the human brain would ideally include both behavioral and histological analysis, which researchers were lucky enough to be able to carry out in Henry's case. Given that *Permanent Present Tense* focuses exclusively on behavioral studies carried out during Henry's life to

supplement the journey through human memory, experienced scientific readers may occasionally feel as though conclusions were preemptively drawn about brain structure and function. Corkin provides minimal MRI evidence, but even less histological analysis. Thus, until more of these data are accrued, neuroscientists may still question many of Corkin's claims. Although Corkin's behavioral focus may result in some incomplete or missing information that could have been clarified with the inclusion of post-mortem analysis, Corkin stays true to her goal of making Henry's contributions to memory known in a biographical format.

From the monumental contribution that Henry and his brain have made to the study of memory and neuroscience in general, it is disconcerting how his condition is often understated in many sources that mention H.M. It turns out that Henry had many more problems than just the anterograde amnesia that he is usually labeled with in textbooks. "Many more" may be an understatement, for by the end of the book it is nearly impossible to recall all of the various minute brain structures and functions that were either intact or compromised in Henry's brain. However, Corkin coherently summed up everything in a very well-written conclusion. For the more experienced reader interested in remembering the roles of specific structures, a table detailing which structures are responsible for which functions may have been a beneficial addition. Regardless, anyone with an interest in psychology or neuroscience will be enthralled by the ability of Corkin to tackle the field of human memory in a unique story centered on Henry Molaison. She brilliantly summarizes numerous aspects of the human brain and provides the most relevant citations enabling readers to reference the original studies and literature. She also continually uses everyday examples and analogies to make the information easily understandable for readers. As we travel through the evolution of knowledge on human memory, aspiring scientists can learn from *Permanent Present Tense* how scientists ask questions, how they carry out experiments, and how they draw conclusions. We are continually reminded of the importance of controlled studies. We see how the combined efforts of numerous scientists who are constantly questioning and attempting to reproduce each other's work, theories, and conclusions are necessary to establish an extremely thorough analysis of all relevant aspects. With the advances in imaging techniques and scientific analysis that came into play since Henry's devastating surgery, scientists were, and still are, able to broaden the field of knowledge on human memory. Henry Molaison has, and will continue to be, one of the most vital contributions to the field of neuroscience.

REFERENCES

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