Pay Attention to the Man Behind the Initials: H. M. and His Legacy

A review of

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

by Suzanne Corkin


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Reviewed by

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Permanent Present Tense: The Unforgettable Life of the Amnesic Patient, H. M. intertwines the scientific story of what H. M. taught surgeons and memory scholars with the human story of Henry Gustave Molaison. Henry underwent experimental brain surgery in 1953 to treat his severe epilepsy, a surprising outcome of which was profound damage to Henry’s memory. For the next 55 years, over a hundred scientists studied Henry’s condition and published about H. M.

In the prologue of her book, author Suzanne Corkin states, “It became my mission to make sure that he is not remembered just by brief, anonymous descriptions in textbooks. . . . There was a man behind the initials, and a life behind the data” (p. xv). The book is not, however, primarily a biography. Corkin gives readers a guided tour of memory research unfolding over decades, drawing upon her 46 years of working with Henry and highlighting
the productive interplay between a case study, memory theories, and experiments with groups of people, healthy and brain damaged alike.

The book is targeted at both scientists and laypersons. For many memory researchers, this will be their first introduction to Henry (as opposed to Case H. M.). Corkin welcomes lay readers by carefully defining jargon in each chapter rather than assuming readers will remember scientific terms explained many pages earlier. Corkin also uses everyday experiences, from a trip to the supermarket to repacking a suitcase, in order to illustrate theoretical concepts. Regardless of a reader’s level of expertise about memory research, there is much to learn about Henry, as well as the rich data from H. M., in this book.

**Henry, the Man Behind the Initials**

Interested readers can follow up by listening to a podcast (Newhouse, 2007) of Henry being interviewed, along with Corkin and Brenda Milner, upon the 50th anniversary of the Scoville and Milner (1957) article that introduced H. M. to the field. Although that interview and isolated anecdotes in chapters and articles about H. M. give a glimpse of Henry, *Permanent Present Tense* provides a more comprehensive account of his life.

Telling Henry’s personal story is challenging for several reasons. First, amnesia, by definition, left Henry unable to recall most of his life. In this respect, H. M.’s case contrasts strongly with that of A. J., who reports nonstop recall of her personal memory (hyperthymestic syndrome; Parker, Cahill, & McGaugh, 2006) and has written an autobiography (Price & Davis, 2008), and that of Jill Bolte Taylor (2006), who could describe experiencing a stroke from both scientific and personal perspectives.

Second, the family members who knew Henry best have long since died, and Corkin could not rely on Henry even for stories about his early life. Although most textbooks either state or imply that H. M. had normal memory for preoperative events, Corkin argues that Henry had only two autobiographical memories, the first time he smoked a cigarette (age 10) and a plane ride over his hometown of Hartford, Connecticut (age 13). Henry’s other recollections were more general descriptions, consisting of facts and knowledge as opposed to the rich sensory details that typically characterize autobiographical memories (e.g., Rubin, 2005).

Given these challenges, Henry’s personal story had to be drawn from his case records and anecdotes from people who worked with him. Corkin also relied on the heritage she shared with Henry, namely, growing up near Hartford, Connecticut; in a twist reminiscent of a Hollywood tale, Corkin grew up across the street from H. M.’s surgeon, William Beecher Scoville.

As Corkin lifts the curtain of case H. M. to reveal Henry, one sees his sense of humor in anecdotes (e.g., Henry helping one researcher play a joke on another) and his quips, such
as when “a researcher asked Henry whether he had slept well. ‘I didn’t stay awake to find out,’ he replied” (p. 276). Yet Corkin avoids the trap of characterizing Henry as someone without flaws. Like most people, Henry had moments of frustration and acting out, and he did not always get along well with his caregivers. Some of Henry’s personal struggles are captured by his reflective response to a query about his comfort: “Well, mentally I’m uncomfortable to be so much trouble to everybody—not to remember. . . . And I keep debating with myself if I said anything that I shouldn’t have, or done something that I shouldn’t have done” (p. 106).

A particularly vivid anecdote suggests that Henry’s life was textured with emotions, including pain at being separated from loved ones followed by joy at being reunited with them. As Henry completed a three-week visit to the Massachusetts Institute of Technology, which also served as a respite for his mother, Henry spoke to his mother by phone. Corkin writes, “He was visibly moved, his voice nearly breaking as he told his mother it was good to hear her.” And when Henry arrived home and saw his mother, “The two of them embraced without speaking for a few moments, as Henry stroked her cheeks and shoulders” (p. 107). Similarly, Corkin shares that later in his life Henry

had written two notes to himself, which he kept in his wallet, one saying “Dad’s gone,”
and the other “Mom’s in nursing home—is in good health” . . . the notes protected him
from the anxiety of not knowing where his parents were. (p. 205)

Overall, Corkin paints Henry’s humanity so vividly that readers who lack clinical distance will find it challenging to read of his death and then immediately plunge into a description of the frenetically executed plan to image, harvest, and slice H. M.’s brain for maximal scientific gain.

**H. M.’s Legacy in Medicine, Psychology, and Neuroscience**

Weaving Henry’s story together with the state of knowledge at a given point in history makes clear why Scoville performed Henry’s surgery as he did and how the lessons learned from H. M.’s case led surgeons away from replicating the procedure. Likewise, this organization highlights that the scientific literature, like a person’s life, unfolds over time with new data leading to revised theories that, in turn, make novel predictions that must be tested.

In most instances, the book covers the memory literature and H. M.’s place within it very well. Chapter 4, for example, clearly explains how H. M.’s ability to remember
information for no more than 30 seconds, unless he constantly rehearsed it, contributed to
the field moving from a single-store view to a multiple-store view of memory.

Similarly, Chapter 7 usefully contrasts H. M.’s case with the recent case of N. B.: H.
M.’s resection was of bilateral medial temporal-lobe structures, including most of the
hippocampi and amygdalae but sparing perirhinal and parahippocampal cortex (p. 301;
epilepsy drugs took a toll on his cerebellum, p. 80). N. B.’s resection was of left anterior
temporal lobe structures, including much of the perirhinal cortex but sparing the
hippocampus (Bowles et al., 2007). Behaviorally H. M. showed preserved familiarity (e.g.,
normal performance on a two-alternative forced-choice picture recognition, even after six
months) and impaired recollection (e.g., recalling what was served for breakfast this
morning). By contrast, N. B. shows impaired familiarity with preserved recollection.
Together the cases show a theoretically important double dissociation between memory
based on familiarity and memory based on recollection.

There are, however, areas of memory research that are incompletely reviewed.
Chapter 10, for example, highlights that in contrast to his impoverished memory for
preoperative personal experiences, H. M. could answer questions about preoperative public
events. Notably absent from the discussion of the personal–public memory contrast is an
attempt to understand Henry’s autobiographical memory deficit within a prominent theory of
autobiographical memory, that of Conway and Pleydell-Pearce (2000).

Those theorists suggested that access to event-specific knowledge, such as sensory-
perceptual details, is impaired in retrograde amnesia even when people can maintain general
event knowledge (e.g., train trips to see family) and lifetime period knowledge (e.g., middle
school). Such a view may explain why Henry consistently confused two preoperative
vacations: he had access to general event knowledge but not to event-specific information
that would help distinguish the two trips.

Overall Permanent Present Tense effectively demonstrates how H. M.’s data fit into a
wide array of memory research (e.g., classical conditioning, route learning, episodic and
semantic memory), and it does not stop there. Although known primarily for his
hippocampal lesions and memory deficits, H. M. demonstrated impaired pain perception as
well. In addition, he was insensitive to how hungry or full he was, only refusing food when
he had eaten almost two complete meals—and even then he rated his hunger on a scale from
0 (famished) to 100 (too full to eat another bite) as only 75 (pp. 211–212)! Corkin attributes
these latter deficits, and his seeming lack of a sex drive, to amygdalae lesions. With such
wide-ranging data discussed, the book highlights how much can be gained from a thoroughly
documented case study.
Henry’s Hope

Corkin reports that Henry “frequently articulated his hope that what we learned about him would help others. That possibility was a source of satisfaction for him” (p. 207; see also Newhouse, 2007). Imagine how satisfied Henry would be to understand that his case (a) spared other epileptic patients from bilateral lesions to their medial temporal lobes, (b) was a catalyst for understanding the complexity of memory (e.g., the short-term/long-term and declarative/nondeclarative distinctions), and (c) drew many neuroscientists and experimental psychologists into their fields. The latter aspect is only briefly mentioned; this part of H. M.’s legacy continues to grow and could likely fill a book on its own.

Returning to Corkin’s concern about the description of H. M. in textbooks, such passages are not only brief, but they are also often misleading. For example, many texts report that H. M. could not remember experiences that occurred after his surgery. Corkin highlights data that counter such claims, including that in 2002 H. M. demonstrated that he had learned facts about events that happened after his 1953 surgery (e.g., John Glenn went to the moon, Lee Harvey Oswald assassinated the president; O’Kane, Kensinger, & Corkin, 2004). Similarly, H. M. learned the address and floor plan of a house he moved into five years after his surgery. Permanent Present Tense can help professors and students, and textbook authors, better understand the facts about H. M.’s condition and what those facts suggest about how memory works.

Perhaps most important, the abundance of data associated with Henry’s case, including new measurements of exactly how his brain was damaged, raises further questions to pursue. For example, what constraints can Henry’s emotional experiences and the precise measurements of his brain damage contribute to discussions about emotion (e.g., Hamann, 2012)? Did Henry’s brain rewire itself to support memory for facts about celebrities who became famous after 1953 and for the layout of a house he moved into five years after his surgery?

In contrast to learning the layout of that house, which Henry lived in for 16 years, he failed to learn the layout of the house that he moved into 10 months postsurgery and lived in for four years. Is Henry’s failure to learn the layout of the earlier house better explained by the relatively short time he had to learn its layout, four years compared with 16 years, or by the timing of living there, 10 months postsurgery compared with five years postsurgery? What we have learned from H. M., and what we will continue to learn from questions inspired by him, surely exceeds Henry’s hopes.
Conclusion

Within one book, Corkin successfully practices dual dissemination (Sommer, 2006) by writing for both scientists and lay readers. For the former, Corkin summarizes the plethora of data about Case H. M. and introduces the man Henry. For the latter, Corkin “gives psychology away” (Miller, 1969), answering the important call for scientists to explain what we do, how we do it, and why it matters (e.g., Mooney & Kirshenbaum, 2009).

Although the intertwining of the scientific story about case H. M. with the personal story of Henry Gustave Moliason works well in many ways, not all readers will enjoy the history of neurosurgery and epilepsy research that led to Scoville’s operation on Henry’s brain. Likewise, some readers may view the forays into Alzheimer’s and Parkinson’s disease research as tangents. Experimental psychologists will wince when the null hypothesis is predicted. All readers, however, will be struck by the impact of case H. M. on medicine, psychology, and neuroscience, and they will be fascinated by Henry, the man behind the initials.

References


