

Books

Memory is composed “with a grace of its own”

On the surface, human memory might seem like a simple thing, a record of everything a person has seen or heard or read, no different to a video camera; but it is not objective. Instead, it is highly prone to lapses and distortion, its value as an objective record of events distorted by subjectivity. This contradiction lies at the heart of research in the field of learning and memory, which walks a fine line between the objective realm of experimental data and the subjective world of lived experience. Sisters Hilde and Ylva Østby, the former a writer and the latter a neuropsychologist, both work with memory, each on a different side of this divide—one shaping their subjective experience into art while the other expands our understanding of memory through scientific research. Together, their book *Adventures in Memory: The Science and Secrets of Remembering and Forgetting* explores the question of human memory, and takes the reader on a tour of the past 450 years of memory research.

The combination of the Østby's professional disciplines has undoubtedly shaped the format of the book; the authors engage imaginatively with the science and history of memory research, beginning by reconstructing Giulio Cesare Aranzio's thought process as he discovered and named the hippocampus. Throughout, the Østby's account of memory emphasises experience over data, recreating famous experiments and interviewing memory champions rather than merely giving a dry factual account of experimental results. Although much of the material might be familiar to anyone who has studied the brain, it is presented in an entertaining and often poetic manner that renders familiar material fresh and engaging through its creative presentation.

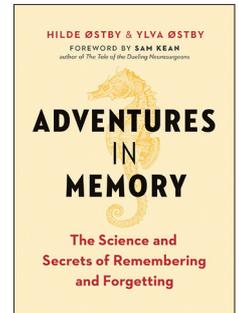
This subjective, imaginative approach taken by the authors parallels one of the major themes of the book: human memory is influenced by subjective experience and fundamentally linked to the imagination. People have been using mnemonic and visualisation techniques to aid their memory for at least 2000 years, and these techniques are still widely used today. Conversely, however, the imagination can also intrude upon the memory, leading to the creation of false memories. The issue of false memory is of particular importance in criminal cases but only in the past couple of decades police investigators have taken this issue on board. Just as they avoid contaminating a physical crime scene and destroying forensic evidence, police have now developed procedures to try to ensure that the memories of witnesses and suspects remain uncorrupted. To demonstrate the ease with which false memories can be created, the authors attempted to recreate a classic experiment and induce a false memory in their editor.

Although they failed—largely due to greater awareness of photo-manipulation since the original experiment and the fact that the editor knew the book would cover false memory—it still provides an insight into the processes behind this research and leads into a fascinating discussion of the factors affecting the ease with which false memories can be created and what the effect of these memories might be. The human memory is, to paraphrase author Henry James, composed “with a grace of its own”, and modern research suggests that our autobiographical memories are reconstructive, recovering what we can of the event in question and filling in gaps from what we know of the world. In a sense, all our memories are a hybrid of fact and fiction.

When we take this relationship between imagination and memory into consideration, it is almost surprising that memory research has only recently begun to explore the influence of imagination and creativity. This work forms the basis for the Østbys' argument that the fuzzy, reconstructive nature of memory has a purpose: it allows people to imagine future events and enables planning. The ability to construct possible future events from past ones confers an obvious evolutionary advantage, and functional MRI experiments have provided further evidence for a connection between imagination and memory. According to the Østbys', brain activity when reminiscing has a striking similarity to that when imagining the future, and other research has shown that using techniques intended to stimulate episodic memory also enhance creative imagination. Similarly, research on people with depression shows that both memories and thoughts of the future were very general and lacking in detail, suggesting a common mechanism.

In light of this, we might need to rethink our concept of memory. Misremembering and forgetting might not be failures of memory but a key to understanding how it functions by generalising many similar episodes into a single concept, reconstructing each memory with new details, and revising the memory in light of fresh evidence. If we consider misremembering and forgetting as failures, then we are holding our memory to a standard that it was possibly never meant to meet. Instead, these mistakes are necessary by-products of the mechanisms of imagination. Human memory combines objective experience with subjective impressions and experienced facts with imaginative embellishments in much the same way that the Østbys have constructed their adventure into the depths of human memory.

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