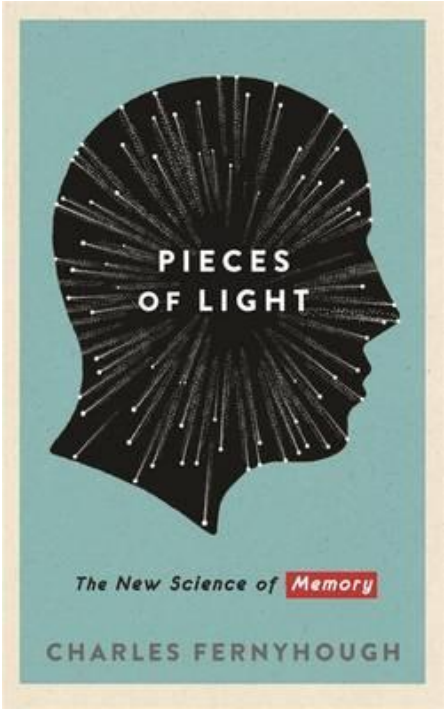

Pieces of Light: The New Science of Memory

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A new consensus is emerging among cognitive scientists: rather than possessing fixed, unchanging memories, we create new recollections each time we are called upon to remember. As psychologist Charles Fernyhough explains, remembering is an act of narrative imagination as much as it is the product of a neurological process. In *Pieces of Light*, he illuminates this compelling scientific breakthrough in a series of personal stories, each illustrating memory's complex synergy of cognitive and neurological functions.

Combining science and literature, the ordinary and the extraordinary, this fascinating tour through the new science of autobiographical memory helps us better understand the ways we remember—and the ways we forget.

Pieces of Light: The New Science of Memory Details

Date	:	Published 2012 by Profile Books
ISBN	:	9781846684487
Author	:	Charles Fernyhough
Format	:	Hardcover 344 pages
Genre	:	Science, Nonfiction, Psychology, Biology, Neuroscience, Autobiography, Memoir, Brain, Reference, Research, Social Science, Health, Audiobook

From Reader Review Pieces of Light: The New Science of Memory for online ebook

Joanne Harris says

Fascinating. Learned; plausible; well-researched; beautifully-written, yet accessible enough for a non-scientist to enjoy and understand. The writer uses his own memories as well as case studies to challenge and explain the nature of what we remember, and how the process of remembering affects (and sometimes changes) existing memories. Ought to be recommended reading for anyone who still believes in the infallibility of one's own memory, or that of eyewitness testimony. Thrillers are rarely this thrilling.

Julia says

Eh.
I was really interested to read this as a non-fiction book, I read some psychology in university but not much since and I thought it would be fascinating because of the way our memories define us.
The writer is a psychologist and a creative writer and the book therefore falls between both and for me, doesn't satisfy on either front. The explanations of the science and key concepts weren't constructed in a way that I really felt I was fully learning or understanding anything - maybe I'm not that bright but then this isn't intended as an academic text per se, and the tone of the personal anecdotes came across as smug or condescending to the point where I couldn't get invested in them to learn things "by accident" by engaging with the narrative. It was quite a slog to get to the last page.

David says

This intriguing book is mostly about the psychological aspects of memory. Charles Fernyhough makes it very clear that the mind does not *retrieve* stored memories, but instead it *reconstructs* them. It mentions the various components of the brain, but has little to do with the microscopic level of neurons, synapses, and the internal wiring of the brain. There is some discussion of brain scans, but mostly it deals with psychological studies of memory.

Much of the book is anecdotal, while other parts describe various psychology experiments. Fernybough describes how some very young children can recall events, and how these memories are later lost. He describes post-traumatic stress syndrome, and how it can affect memory. He describes, mostly anecdotally, how memories that are thought to be lost can later be retrieved by triggers of smell, language, and an odd assortment of other things. And, he relates how false memories can be constructed through the power of suggestion.

This is an easy-to-read book, but much of it is not science. It is a collection of fascinating anecdotes. The author admits as much; *"'I set out to write about some science, and I ended up by telling a lot of stories."* Maybe the subtitle should be changed, to better fit the subject of the book.

Kurt says

The main premise of this book is a good one: the current state of neuro/psychological research into the nature of memory suggests that it is reconstructive in nature: you don't really have many full scenes stored away in your head right now, more like many images and facts that you reconstruct into a meaningful narrative each time you remember, and various factors make those narratives more or less reliable when it comes to factual accuracy. Fernyhough explores this concept in many ways - trying to familiarize himself with locations he hasn't inhabited for years, looking at the phenomenon of siblings unable to determine the rightful owner of a memory, contemplating the ethical implications of helping his children remember their deceased grandfather in a particular light, engaging with a SenseCam that takes automatic photographs as a tool for helping build memories for the memory-impaired. I appreciate the way that Fernyhough summarizes a variety of scientific studies and includes examples from his own life. My problems with the book are that it didn't seem to cohere into a whole - each chapter was discrete, and it took some work reconstructing (appropriately enough) the central theme of the book - and that it was ponderously dull throughout. Fernyhough is fascinated by the idea of what people recall as our earliest memories, but they are singularly uninteresting in their details (light in a nursery window, a field spotted over a fence, pushing a toy along a carpet), and while I appreciate his integrity in pursuing accurate information without sensationalism or distortion, the result is a book about a specialized field of research, using examples that probably will not engage many readers, and I can't recommend this book for anyone with just a casual interest in the subject. I like the idea of a college professor encouraging students to read a relevant chapter or two to aid in classroom discussion, but I don't see this book catching on with a wider audience.

(I received a free copy from the Amazon Vine program.)

Lynn says

This is a fascinating book about thought and memory. What is your first memory? Can false memories be put into someone's head? What causes traumatic flash back memories? Why can five people experience the same event and have five different versions of the story? How much of what I remember is gleaned from stories people tell, rather than from my memory? If you find these questions fascinating you will like this book. It is well written, well researched, and easy to comprehend.

Charlotte says

I wish this book had been written last year! It would have been so useful for my dissertations. Fernyhough wants to debunk the popular conception of memory as a kind of filing cabinet (Harry Potter's penseive comes to mind) and instead show us how we create memories in the present moment, using data from the past that is stored in the brain. It's a completely readable book which patiently and sensitively discusses the human need to make memory 'conform to its master' in the present whilst remaining true to what actually happened. There is a kind of constant tension here.

He looks at how memory works on a neurological, science basis (which is fascinating for someone who knows so little about how the brain functions) and also uses fiction to illustrate how this pans out in the way

that we tell stories to ourselves and to each other.

One of the most interesting things that I learnt was the way that memory and imagination are directly linked. Our ability to create memories about the past mirrors our ability to imagine ourselves in the future and brain activity is remarkably similar for both processes.

He sometimes seems a bit sentimental and wishy-washy but that's because he's being really brave actually in occasionally using himself as a test-subject and investigating the way that he remembers personal things that matter to him. I have great respect for this as looking at the way you remember / create your own personal narrative could be a scary prospect requiring a lot of self-honesty and a genuinely analytical approach.

If you are a memory-geek like me, you will love this.

Dpdwyer says

A good account of the latest understandings about human memory and how we form images of our selves. Lots of ideas to ponder:

"The truth is that autobiographical memories are not possessions that you either have or do not have. They are mental constructions, created in the present moment, according to the demands of the present."

"...when you have a memory, you don't retrieve something that already exists, fully formed---you create something new. Memory is about the present as much as it is about the past."

"...two forces in human memory: the force of correspondence, which captures memory's need to stay true to the facts of what happened, and the force of coherence, which works to make memory consistent with our current goals and or images and beliefs about our own selves."

"To remember the past, you tell a story about it. And in recalling the memory, you tell the story again. it's not always the same story, as the person telling it does not always want the same things. Memory fits in with the demands of the present as much as it tries to remain faithful to the facts of what happened."

Rebecca Solnit: "A happy love is a single story, a disintegrating one is two or more competing, conflicting versions..."

"The phenomenon of reconsolidation shows that every time a memory trace is accessed, it becomes unstable for a brief time until it can be consolidated again. That opens the door to change. In Joseph LeDoux's words, 'your memory about something is only as good as your last memory about it.' Catching a memory means breaking it open."

Yaaresse says

The author starts the last chapter by writing "I set out to write about science and ended up telling a lot of

stories." (That quote may not be exact. I don't have the book in front of me.)

And that, folks, is the gist of the whole book. I felt like we never really got to the science or the psychology part of the book. There are a lot of anecdotes, mostly about the author, mostly about him going somewhere he hasn't been in years and observing himself trying to feel recognition. There are also a lot of stories about his daughter and his attempts to figure out how far back she can remember which just aren't that interesting nor informative. (And like all parents, he seems to think his child is far more interesting and entertaining than I did. Apparently he has a whole other book written about her.) The stories are repetitious, meandering and not that interesting. About halfway, I found myself checking to see how many pages were left in the chapter because I was flat-out bored and wanted to get to the "science" promised in the title.

By the way, the whole wandering through places one hasn't seen in 20-30 years and being surprised/disappointed that they don't "feel" familiar did amuse me at first. I lived in the same house for 18 years. If I went back there now, would it "feel" familiar? No, of course not. In the time since then, houses have been built, renovated and/or torn down, streets widened, trees grown or cut down, etc. No where does the author acknowledge that human environments are under constant change, so it is not even reasonable to expect something to feel the same as it did decades ago.

Nikki says

This is rather more anecdotal than I'd hoped, often exploring memories through Fernyhough's relationship with his own memories: memories of his father, teaching his children about his father, comparing his memories of a place to re-experiencing the place later on, etc, etc. Some of this is fascinating — especially his interviews with his grandmother, recording all the stories she had to tell. It's a very personal thing, not scientific, but it's interesting all the same; I sometimes get the same urge with my grandmother, just to capture the weird things she says sometimes that she trots out like proverbs and yet no one has ever heard before!

There are some discussions of more scientific stuff, and most of it seemed perfectly solid from what I know from other authors; it's just, under the sea of anecdotal data, I don't feel like I learned much. There's nothing wrong with the writing style or the content, but it's more H is for Hawk than scientific.

Peter Mcloughlin says

Not bad but not great. It is a got a little too much fluff and not enough meat. Some interesting tidbits like three quarters of people have suffered a traumatic incident in their lives but only 8% get PTSD. Those that do tend to have a smaller hippocampus so memory may be involved in PTSD. There is a lot of stuff on how memories are constructed and changed each time we remember an episode and how unreliable memory can be. But a lot of fluff with these bits. I wish he would put more science in and less story.

Holly says

This was perfectly fine. Quite interesting explorations, though not so different from reading Joseph LeDoux or Daniel Schacter. Fernyhough is a good writer who also seems like a wonderful teacher and father.

Something about the book didn't excite me too much, though. I can't really put my finger on why, except to say that it's quite anecdotal, and I often grew bored during the anecdotes of his own childhood, and his parents' lives, and his children, and his grandmother .... Though I enjoy memoir and first-person fiction I didn't wish to read personal anecdotes by a brain researcher. Maybe his style was missing something, here. I'm not sure. When he uses examples from novelists - Proust, Hilary Mantel, A.S. Byatt, Penelope Lively, W.G. Sebald - I was happier.

I'd been expecting at least a chapter on "highly superior autobiographical memory" and was disappointed that there was none. (The term is hyperthymesia, which I know from my own reading - not from Fernyhough naming it). I'm interested because I possess some of it myself, though not any sort of extreme case - (not Marilu Henner-like, and not like Jill Price). I have my own theories on why I can recall so much - it simply involves going back over everything that happens to me, thinking about past events a lot - re-hearing and re-seeing memories and conversations, as well as always being conscious of where i am in the present, what the date is, the context of the the event, putting things in order, in sequence, and lots of reflection, etc. He does mention Jill Price, but only in the context of a short discussion of people with disordered memory who are cursed with remembering everything.

I learned that some researchers now prefer to say *déjà vécu* ("already lived") rather than *dévà vu* ("already seen").

And: protein synthesis that underlies long-term potentiation (the physical changes in synapses that lead to persistent memory traces), and the factors such as sleep that may play a role. A crucial aspect of this process, reconsolidation,.... The phenomenon of reconsolidation shows that every time a memory trace is accessed, it becomes unstable for a brief time until it can be consolidated again.

On PTSD:
An event that will scar one persons for life will be shrugged off and forgotten by another. Conversely, PTSD diagnoses are occasionally made in response to events such as minor car accidents and overhearing sexual jokes at work, which many would judge unpleasant but hardly the stuff of trauma..... What is undeniable is that PTSD is at root a disorder of memory.

I liked this bit:
Novelist Penelope Lively described how, with advancing age, she had become more conscious of memory's ability to let us access the past on demand. "In old age, you realize that while you're divided from your youth by decades, you can close your eyes and summon it at will... The idea that memory is linear is nonsense. What we have in our heads is a collection of frames."

Still looking forward to reading Fernyhough's newest book: *The Voices Within: The History and Science of How We Talk to Ourselves*

Gizem Kendik says

Selamlar Charles Fernyhough,

?stemiyorum senin anal?, bac?l?, karde?li an?lar?n? okumak, istemiyorum ya. Bi daha bilim ve edebiyat kar???m? hiçbir ?eye elimi sürmem.

Müsade varsa ?uraya bir özet b?rak?yorum.

Belle?in statik, geçmi?ten gelen yadigar, an?lar?n zihin kütüphanesinde zihinsel DVD'ler olarak depoland??? veya fotokopi makinesi olarak görüldü?ü dönemi geçtik.

Bellek an?y? bakmak için ça??rmaz, her ihtiyaç duydu?unda onu yeniden kurgular/üretir. Bir an?n?z varsa, tastamam biçimlenmi? haliyle mevcut bir ?eyi zaten geri almazs?n?z; yeni bir ?ey yarat?rs?n?z. An? geçmi?le oldu?u kadar bugünle de ilgilidir. Hat?rlama ?imdiki zamanda gerçekle?ir. Otobiyografik bellekten gelen veriler, büyük ölçüde depolanarak in?a edilmi? olsa da ?imdiki an?n taleplerine göre yeniden düzenlenir. Bu yeniden düzenleme sürecinde geçmi?le ilgili an?lar?m?z? olaydan sonra edindi?iniz duygu ve inançlarla yönlendirirsiniz. Belle?in bu yeniden kurgulayan do?as? onu güvenilmez k?lar. Nihai sonuç göz al?c? ve ikna edici olabilir ama kaypakt?r.

Kitaptaki 12 bölüm, neden çocuklu?umuzu ço?unlukla hat?rlayam?yoruz, neden en eski an?lar?m?z zengin duyumsal ayr?nt?larla dolu, neden an?lar?m?z an?msay?? patlamas? denilen ve 11-25 ya?lar? aras?na denk gelen zamanda zirve yap?yor, alan an?s? ile gözlemci an?s? aras?ndaki farklar neler, neden an?lar? onlar? yerle?tirdi?imiz ba?lamla, o anda kodlad???m?z enformasyonla hat?rlamak daha kolay, bellek ne i?e yar?yor, olmu? olan?n kayd?n? tutmaktan ziyade gelecek olan? öngörmek için mi, bellek ne ?ekilde kaypak, travmatik an?lar di?er an?lardan farkl? m? çal???yor gibi sorular?n yan?tlar?n?n biraz ara?t?rma referanslar? ama ço?unlukla yazar?n abuk subuk ana abac? karde? an?lar?na referans verdi?i cevaplar?yla dolu.

Charlene says

This was just ok for me. I would have been much happier to spend my time reading the same topic by a different author.

Kathleen Jones says

This has been my bedside reading for the past couple of weeks. I've always been interested in the way Memory and Imagination work together to create. How the imagination takes all the snippets of things we've stored in our brains over the years and weaves them into something completely new. What I didn't realise, until I read Charles Fernyhough's book, Pieces of Light, was just how dependent the memory was on imagination in order to enable us to remember.

It seems that our memories of past events aren't stored in one place, like a video film, just waiting to be re-run, but in bits and pieces of information in different parts of the brain; smell in one place, sound in another, visual and emotional cues in others. When we try to remember something that happened to us in the past, our imagination comes into play to reconstruct the memory as a narrative, which explains why people remember things so differently, and memories alter through time - a minor detail when the event took place might acquire real significance later.

In amnesia victims, where the part of the brain that controls imagination is damaged, memory is severely disrupted and ‘forward thinking’ - the ability to speculate about the future - is impossible.

The way we encode our lives in the memory is also interesting - apparently we are all natural story-tellers. ‘Narrative,’ Fernyhough states, ‘is a key organisational force in autobiographical memory.’ We remember events as stories, pieces of narrative. The author comments in the book, ‘I set out to write about some science, and I ended up by telling a lot of stories’. It’s the story our brain remembers while the event itself fades. Our lives become a series of narratives. We seem to have a need to ‘create a coherent narrative about where one has come from’. But apparently it sacrifices accuracy in order to produce ‘meaning’ - the emotional value of the event is more important than the small detail.

Charles Fernyhough also looks at how, by giving fictional characters rich memory banks, we can make them more authentic for the reader. He uses Hilary Mantel’s Wolf Hall as an example of this, and discusses the work of W.G. Sebald and how he used memory to give a sense of reality - the texture of memoir - to his novels. Reading them, you are never sure whether this is reminiscence or fiction. There is ‘a kind of active remembering in which the world and self-hood are continually constructed and reconstructed - from present-day events and from not-quite-intelligible fragments of the past’.

There are some lovely interviews with Charles Fernyhough’s mother Martha, attempting to recall her life in conversations with the author, reconstructing it and discovering new perspectives as she gazes back at it across eight decades.

I liked the quote from a critic, discussing Proust (you can't really talk about memory without mentioning him): “Like our eyes, our memories must see double; these two images then converge in our minds into a single heightened reality”. Fernyhough goes on to elaborate: ‘Our two eyes, stereoscopically aligned, allow us to see space; memory allows us to ‘see’ time. Memories are about what happened then, but they are also about who we are now’.

Tortla says

I need to own this book so I can flip through it when I want to remember the coolest facts about memory as narrated by the man who is my new hero. (Ironically, I can't retain this much awesome information in my head, so I require a non-library copy to remain in my possession for reference.)

Yup, Mr. Fernyhough, you're my new hero. You're British, and you write thoughtfully and in depth about memory (which is like my favorite subject ever), and you interviewed your ninety-three-year-old grandmother about her memories (which was like my favorite hobby during the seven months I lived down the street from my own 92-year-old grandmother, though I never recorded the discussions for transcription like you did). You referenced A.S. Byatt and Bruno Bettelheim, and your life and the lives of others, and scientific facts...You made me feel thoughtful and hopeful and a little nostalgic. And you named your daughter Athena.
