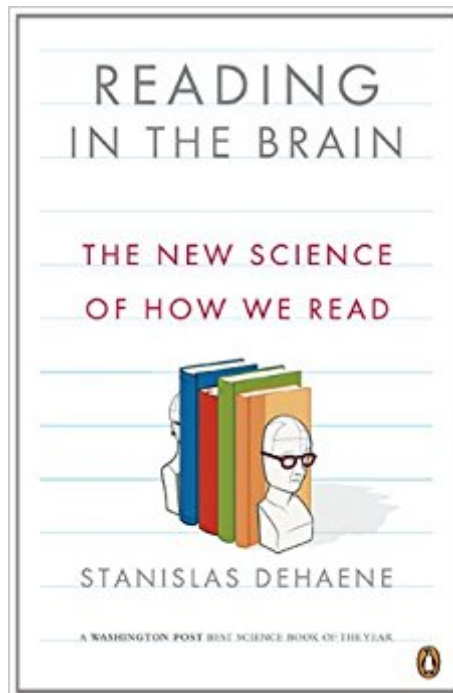




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Reading In The Brain: The New Science Of How We Read



Synopsis

"Brings together the cognitive, the cultural, and the neurological in an elegant, compelling narrative. A revelatory work." -Oliver Sacks, M.D. The act of reading is so easily taken for granted that we forget what an astounding feat it is. How can a few black marks on white paper evoke an entire universe of meanings? It's even more amazing when we consider that we read using a primate brain that evolved to serve an entirely different purpose. In this riveting investigation, Stanislas Dehaene explores every aspect of this human invention, from its origins to its neural underpinnings. A world authority on the subject, Dehaene reveals the hidden logic of spelling, describes pioneering research on how we process languages, and takes us into a new appreciation of the brain and its wondrous capacity to adapt.

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Customer Reviews

The transparent and automatic feat of reading comprehension disguises an intricate biological effort, ably analyzed in this fascinating study. Drawing on scads of brain-imaging studies, case histories of stroke victims and ingenious cognitive psychology experiments, cognitive neuroscientist Dehaene (The Number Sense) diagrams the neural machinery that translates marks on paper into language, sound and meaning. It's a complex and surprising circuitry, both specific, in that it is housed in parts of the cortex that perform specific processing tasks, and puzzlingly abstract. (The brain, Dehaene hypothesizes, registers words mainly as collections of pairs of letters.) The author proposes reading as an example of neuronal recycling—[the recruitment of previously evolved neural circuits to](#)

accomplish cultural innovations – and uses this idea to explore how ancient scribes shaped writing systems around the brain's potential and limitations. (He likewise attacks modern whole language reading pedagogy as an unnatural imposition on a brain attuned to learning by phonics.) This lively, lucid treatise proves once again that Dehaene is one of our most gifted expositors of science; he makes the workings of the mind less mysterious, but no less miraculous. Illus. (Nov. 16) Copyright © Reed Business Information, a division of Reed Elsevier Inc. All rights reserved. --This text refers to an out of print or unavailable edition of this title.

Stanislas Dehaene is the director of the Cognitive Neuroimaging Unit in Saclay, France, and the professor of experimental cognitive psychology at the Collège de France. He is the author of *Reading in the Brain*.

328 pages388 pages including references
Reading In The Brain: The New Science Of How We Read by Stanislas Dehaene, published in 2009 by Penguin Books, has several potential audiences that could glean truly interesting and potentially useful information from this book. One audience might be Lexile Historians. Dehaene provides copious amounts of details on how cultures have evolved from simply reading the landscape, to drawing images in caves, to the first alphabet written by the Greeks, and so on. How the spoken languages have evolved through various cultures, leading English to be one of the most challenging to speak and spell, seemingly only behind the Chinese, who memorize over 3,000 images to this day. Neurologists (or neurologists-in-training) could also benefit from information provided in this Dehaene's book. Descriptions of the areas of the brain utilized for reading and writing (spoiler: prefrontal cortex & occipito-temporal region) are provided, explaining how brain formation and development, sometimes at a later age, (check out the chapter on dyslexia!) influence the human ability to recognize letter sounds, followed by the letters themselves, the morphemes, and eventually entire words. We learn about the areas that are linked to facial recognition as well, and how that is linked to reading. In some stages, both hemispheres of the brain play a large role in reading skills, but eventually, one hemisphere takes on a larger responsibility as children are exposed to more and more. The "Letterbox" portion of the brain must be exposed enough to reading to be fully developed at the inception of adolescence in order for the child to be deemed an "expert" in reading. The brain's function with reading and simple recognition changes over time, and Dehaene provides thorough descriptions of those transformations. Finally, teachers of reading (parents and licensed educators alike) are final

benefactors of information in this book. Chapters 4-7 are primary areas of interest for this particular audience, where we learn a bit more about the evolution of writing and reading across cultures, with highlights on several languages and their simplicities or complexities in teaching reading and writing. As an educator, I found the most valuable information in a chapter entitled “Learning to Read.” Dehaene highlights the “Three Steps for Reading,” which are “logographic”-recognizing images, phoneme recognition, and grapheme recognition. It’s important to understand how a child’s brain develops-in that order-in order for them to learn to recognize letters accurately and eventually begin to form words and be able to sound out new ones. Children who are exposed to more speaking and reading at younger ages are more likely to avoid dyslexia, and overall struggles with reading comprehension and verbal processing. We must take our time in teaching children to decipher phonemes & graphemes if we expect them to eventually become fast(er) readers & writers; we cannot rush the process. The most interesting chapter to me was the chapter on Dyslexia-an area which I am very inexperienced with as an educator. Many people with dyslexia also have speech issues, which could be one of the first noticeable red flags for children. The author stresses that no set amount or type of factors play into a diagnosis of dyslexia, but it is predictable based on the parents and genetics, though other factors can play a part. It is also treatable with intensive interventions over the course of several weeks, bringing participants in a study up a few levels of readiness versus where they were prior to the interventions.

Cons of the book: This particular reader (me) found some of the content to be bone dry and difficult to get through, primarily due to the heaviness of the material and general lack of interest in the topic.

Pros: Plenty of development facts are published in this book, which could truly be a large help in understanding child brain development, and how the brain works when it comes to reading and writing. There is likely something in this book for any of the three audiences previously mentioned, and likely others as well.

Fun facts learned:-The eyes move constantly while reading because the fovea, a small part of the cornea, helps to interpret & process.-Our gaze can advance 7-9 letters ahead.-It can take 50 milliseconds to process a word.-Most good readers can read 400-500 words per minute.-Font type influences speed at which we can read.-What we see depends on what we think we’re seeing.-Words take longer to read if they have more graphemes, not necessarily phonemes.-The right hemisphere is linked to facial recognition; the left is linked with reading & writing.-Reading improves verbal memory.-The Literate Mind: spelling mastery, richness of vocabulary, nuances of meaning, pleasures of literature.-Italian is the easiest language to learn

(as a child, at least.) Bottom line: This entire book may not be for everyone, but there are portions that anyone could benefit from. It is worth a read, even if you don't read the whole book.

I first came across Dehaene's name in George Lakoff's "Where Mathematics Come From" -- and picked up his earlier number sense book. This book is in my opinion much more substantial -- he has been a researcher in this area for a long time, it seems, and he is very literate in the subject -- he provides a deep consideration of the neural correlates of reading, provides a coherent statement of what he calls neural recycling to explain how the brain adapts for reading across cultures, provides an in-depth exploration of dyslexia, and has a very profound vision of the place of neuroscience in education. He writes extremely well -- which is particularly impressive given that his original language is French. Moreover, he has a breadth of knowledge of language that goes beyond well English -- even Pinker seems to be a professor of English. He makes reference to Tomassello which impressed me no end since I wouldn't expect that breadth of literacy from a neuroscientist. It provided me with everything I could have wished for, except for the field to be further along. I would not just recommend this book, but the author. I think before his career reaches its twilight, he will have contributed greatly both to neuroscience and its communication to the educated layperson.

Be aware that the book asks you to go to readinginthebrain.com for full-color figures. However, this website is no longer working. The link takes you to a generic site -- one of those you are often taken too when you misspell a word in an address. UPDATE : see following comment for a link to a site that works. On a Kindle, the figures and the writing about the figures are too small to be useful.

If you are an elementary school teacher, you **MUST** read this book. If you are a parent who wants to understand learning to read, you need this book. If you are a college professor training teachers you ought to require this book as essential reading for all your students.

Required reading for all parents and teachers. I wish I had had this book 25 years ago when my school district permitted teachers to use whole language reading in my children's classrooms.

I know that Mary Wolf uses this text in her course at Tufts because I bought it on the recommendation of one of her students. It teaches the physiology and neuroscience of reading. I bought it because I am on a school board and wanted to learn about the value of preschools and

the mechanics of what goes on in the brains of youngsters. The book is fascinating and easy to read even for non psychologists like me - i'm an engineer. It turns out that our brains had to unlearn some things in order to recognize certain letters. The book explains dyslexia in a way that makes sense. It also was really interesting to learn how we all use the same parts of the brain when we learn to read. It is well worth the price and the effort.

I've read many books on neuroscience, intelligence and language. This is just an amazing book that explains how reading works at all levels from the retina to the visual cortex to where and how words are stored for vision and hearing.

Its presentation of the latest research about the connections between the printed word and reading, both "translating" the written symbols & understanding the information they convey is, in a word not only revolutionary, but outstanding! I highly recommend it for teachers of reading as well as (neuro-)psychologists. Jeanne (neuropsychologist) and consultant to a special educator).

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