

illiterate"—that is, having been turned off reading, especially literary reading, as a teenager and coming back to it only as an adult. At one point, frustrated with her inability to find books she liked and to stick with them, "I remembered a bag in the closet with stuff my ex-boyfriend had left behind, including a paperback copy of *Our Mutual Friend*, his favorite novel. A few days later I emerged from that exquisite book and cursed myself for wasting so much of my life doing things other than what God in all his wisdom clearly meant for me to do for the rest of my life: read Dickens." For Schine this discovery "was a defining moment," and "it could never have happened if I had not been blessedly illiterate."

That is to say, she came upon a world of wonderful books when she was ready for them—when she could receive what they have to offer. "I got to read *Huckleberry Finn* for the first time when I was 35 years old. I read *My Antonia* for the first time *last month*. That is a kind of grace. If . . . I had read *Huckleberry Finn* at 14, would I have reread it at 35? Maybe, but it wouldn't have been the same transcendent experience as discovering it as an adult."

So the books are waiting. Of this you may be confident: they'll be ready when the whim strikes you.

All in your head ☞ What's odd, when you think about it, is that people can be seized by the whim to read in the first place. It's not exactly a natural thing to do. As Steven Pinker once noted, "Language is a human instinct, but written language is not. . . . When children are thrown together without a usable language, they invent one of their own." But as for writing, "A group of children is no more likely to invent an alphabet than to invent the internal combustion engine. Children are wired for sound, but print is an optional accessory that must be painstakingly bolted on." Yet once the ability to make sense of printed words gets

itself so bolted, reading can become a deeply pleasurable activity. And it is not easy to say why.

This is a large question with many subsets. Some years ago the English critic A. D. Nuttall wrote a thoughtful book called *Why Does Tragedy Give Pleasure?* in which he explored a puzzle that people have been worrying about at least since Aristotle. One would not think that it could possibly be agreeable to watch Oedipus staggering eyeless across the stage, nor Hamlet dying from Laertes's poisoned rapier, nor Hedda Gabler rushing from her sitting room with a loaded pistol in her hand—and perhaps “agreeable” isn't really the word—nor “pleasurable”—and yet these are experiences that many intelligent and decent and even quite kind people seek out, over and over again. Curious; and yet what is perhaps more curious is that many of the same people who will go to the theater to see such horrific events will also absorb themselves in books that tell such stories and find themselves so moved that their tears drop onto the pages.

When you flip the coin of genre to the other side, the question becomes still more insistent: few of us have asked why people would want to go to the theater to see a comedy played out—laughter is always needful, and in short supply—but why might someone seek that laughter through the curious means of scanning black marks on bound pieces of paper? Is it not passing strange that a person gazing at such marks can be incapacitated by laughter? Yet most of us have had that happen to us, and almost all of us have seen it happen to others. Few things could be more mundane.

Cognitive scientists have made much progress in recent years in their attempts to understand how reading works—how it happens in the brain. A number of recent books have described this research, most notable among them Maryanne Wolf's *Proust and the Squid* and Stanislas Dehaene's *Reading in the Brain*, and their account goes something like this:

“The tale of reading,” Dehaene writes, “begins when the retina receives photons reflected off the written page. But the retina is not a homogeneous sensor. Only its central part, called the fovea, is dense in high-resolution cells sensitive to incoming light, while the rest of the retina has a coarser resolution. The fovea, which occupies about 15 degrees of the visual field, is the only part of the retina that is genuinely useful for reading.” This limited field of high-resolution sensing means that our eyes have to travel across a page in a series of zig-zag movements called saccades, which, once we have become experienced readers, allow us to identify words even when we just discern some of the letters in them, and sentences even when we can only truly see a couple of words at a time. We are, however, usually aware in a general way of a dozen or so letters ahead of the one we're focused on at any given time, and about 10 percent of the time our eyes are darting back over words we've already read to make sure we got them right. This rather complicated optical dance—or rather, the limited sensorial equipment that mandates the dance—places a pretty firm limit on our maximum reading speed. Fluent readers achieve about five hundred words a minute, and that's not far from the best we can do, given the limited focal abilities our retinas possess.

Our brains, however, can process words much faster than our eyes can* and are extremely skilled at filtering out noise and

*As Dehaene points out in a passage that I find simultaneously exciting and creepy, if we could be freed from the limitations of our eyes' sensing abilities we could achieve genuine speed-reading. “If a full sentence is presented, word by word, at the precise point where gaze is focalized, thus avoiding the need for eye movements, a good reader can read at staggering speed—a mean of eleven hundred words per minute, and up to sixteen hundred words per minute for the best readers, which is about one word every forty milliseconds and three to four times faster than normal reading! With this method, called rapid sequential visual presentation, or RSVP, identification and

discerning signals. Consider, for instance, with what apparent effortlessness we can identify a word—any old word, for instance, “reading”—whether it is presented to us in lowercase or uppercase, even though most of the letters in “READING” look quite different in the two cases. Nor do we have any trouble recognizing the same word when it is laboriously printed by young Jason or written in an elegant Palmer hand by Aunt Bess.

The almost frictionless processing of this information takes place mostly in a particular region of the brain: Dehaene says we can find it “on the edge of the left occipito-temporal fissure,” and I’ll have to take his word for that. The really astonishing thing, though, is that this very location is where you can find readers’ brains doing the heavy lifting of decoding written words, whether those words are written in English, Hebrew, or Chinese—that is, whether you’re reading from left to right or right to left, whether your language is alphabetic or (partially) ideographic. None of those distinctions matters to the text-processing brain. Nor does it matter how you learn to read, whether through phonics or a whole-language approach or any other method. Japanese readers have to navigate three completely different systems of notation, Kanji and two varieties of Kana, katakana and hiragana, which can show up within one text, for instance in a newspaper—and they use the same general region of the brain in each case. As Dehaene says, it really looks “as though there were a cerebral organ for reading,” though there is not: there has not been sufficient evolutionary time for one to develop, since humans have been reading

comprehension remain satisfactory, thus suggesting that the duration of those central steps does not impose a strong constraint on normal reading. Perhaps this computerized presentation mode represents the future of reading in a world where screens progressively replace paper.”

for just a few thousand years and evolutionary change moves at a much slower rate. How there can be such uniformity of brain function without biological evolution directly supporting it is something that Dehaene explains in detail and with great clarity; but we need not get into that here.

Both Dehaene and Wolf are particularly interested in how the smoothness and ease of reading can be disrupted, by accident or disease, and in how some people are never able to achieve fluent reading. This emphasis makes sense for two reasons. First, dysfunction is often the biological researcher’s best guide to proper function: if you can pinpoint what causes a mechanism to go wrong, you usually learn a good deal about what has to be in place for it to go right. As Dehaene explains, some of the most important early research into the cognitive contexts of reading came when a nineteenth-century Frenchman, known in the literature as Monsieur C, woke up one morning and found himself unable to read. He could still speak perfectly well, could write fluently, and could even recognize written numbers—but he could not read at all. When it was discovered that he had had a stroke, and that the stroke had left disabling lesions in a particular part of his brain, the scientists observing Monsieur C were able to conclude that the ability to read was associated with a different part of the brain than the ability to write, speak, and discern numbers.

Second, the kind of research Dehaene and Wolf do is most practically beneficial to people, especially children, who have reading difficulties. Wolf is actually a professor of child development, and both she and Dehaene have much to say about dyslexia and related disorders. Both of them hope that their work can aid those who seek to treat dyslexia, and also that it will have an effect on teachers’ ways of teaching reading to young children. Dehaene even allows himself a few moments of (justifiable)

at the way that "childhood reading experts" continue to debate about the best strategies for teaching reading to children in complete ignorance of a large and growing body of work on how the human brain processes written language.

All of this is, to me anyway, abidingly fascinating, and yet, as I explore these books, there's a part of me that's always saying "But you're not really talking about *reading*"—about whatever it is that makes me cackle and snort when I have a P. G. Wodehouse novel in my hands, even when I'm in bed and desperately trying to stifle the laughter lest I wake my wife up, which I always end up doing anyway, with the result that for some years now I have been forbidden to bring a Wodehouse book to bed. Or whatever it is about the last scenes of *King Lear* that grieved the young Samuel Johnson so terribly that he simply had to set the play aside for decades. ("I might relate," he wrote in his magisterial edition of Shakespeare, "that I was many years ago so shocked by Cordelia's death, that I know not whether I ever endured to read again the last scenes of the play till I undertook to revise them as an editor.") Or, for that matter, that terrible moment when Tolstoy's *Anna Karenina*, on a long railway journey, becomes so involved in the exciting life of a character in a novel that, wanting such excitement for herself, she becomes helpless to resist the temptations of adultery (to which she was already vulnerable). Surely those experiences are what reading is all about.

Such a response is largely unfair to Wolf and Dehaene. Of course they are talking about reading—just a different aspect of reading than I am habitually interested in. Their concern might be summed up in this passage from Dehaene: "A written text is not a high-fidelity recording. Its goal is not to reproduce speech as we pronounce it, but rather to code it at a level abstract enough to allow the reader to quickly retrieve its meaning." At the purely

cognitive level, this is what reading is: coding and decoding. It is a communications system, deeply similar to what a computer does when it decodes the zeroes and ones of a program, or what happens when, as our cells reproduce, strands of DNA are read and copied. Reading in this sense is accessible by some variety of information theory; and reading in this sense is a titanically important object of study. But reading in this sense is not the subject of this book.

I found that when I encountered Wolf's and especially Dehaene's accounts of these physiological processes, I was nearly disabled as a reader. I kept thinking about the movements of my eyes, and it's not possible to be so self-conscious and still make sense of a text. I had to go over some passages multiple times, making very deliberate efforts not to think about what I was doing. (The experience reminded me of times when, while descending stairs rapidly, I suddenly become aware of my legs' movements, my body's balance—and immediately have to slow down to a senior citizen's pace.) Perhaps you, gentle reader, are having similar issues as you read this section? Such disruptions serve as a reminder of what a strange and wonderful thing the everyday experience of reading really is.

In a justly famous passage in Dickens's *David Copperfield*, young David is trying to adjust to his dreary life with the rigid, humorless, and probably malicious Murdstone family. "As to any recreation with other children of my age, I had very little of that; for the gloomy theology of the Murdstones made all children out to be a swarm of little vipers (though there was a child once set in the midst of the Disciples), and held that they contaminated one another. The natural result of this treatment . . . was to make me sullen, dull, and dogged." Natural indeed. "I believe I should have been almost stupefied," David continues, "but for one circumstance."

It was this. My father had left a small collection of books in a little room upstairs, to which I had access (for it adjoined my own) and which nobody else in our house ever troubled. From that blessed little room, Roderick Random, Peregrine Pickle, Humphrey Clinker, Tom Jones, the Vicar of Wakefield, Don Quixote, Gil Blas, and Robinson Crusoe, came out, a glorious host, to keep me company. They kept alive my fancy, and my hope of something beyond that place and time,—they, and the Arabian Nights, and the Tales of the Genii,—and did me no harm; for whatever harm was in some of them was not there for me; I knew nothing of it. . . . It is curious to me how I could ever have consoled myself under my small troubles (which were great troubles to me), by impersonating my favourite characters in them—as I did—and by putting Mr. and Miss Murdstone into all the bad ones—which I did too. I have been Tom Jones (a child's Tom Jones, a harmless creature) for a week together. I have sustained my own idea of Roderick Random for a month at a stretch, I verily believe.*

"This was my only and my constant comfort," David concludes. "When I think of it, the picture always rises in my mind, of a summer evening, the boys at play in the churchyard, and I sitting on my bed, reading as if for life."

*The characters David refers to are the protagonists of popular novels of adventure, largely from the eighteenth century. The first three names are the eponymous heroes of books by Tobias Smollett; then come Henry Fielding's *Tom Jones* and Oliver Goldsmith's *Vicar of Wakefield*, followed by Cervantes's *Don Quixote* (the one pre-1700 book on the list); *Gil Blas* is a French novel by Alain-René Lesage that was influenced by Cervantes and in turn deeply influenced Smollett; and everyone knows Defoe's *Robinson Crusoe*. Although many of these books are now considered classics, in their day they were thought of as something close to "penny dreadfuls": light and frivolous reading, often denounced from pulpits as being injurious to good morals.

Reading as if for life—how does this happen? At this point I cannot stress too much that I do not raise the spirit of David Copperfield as a means of denouncing the research of Wolf and Dehaene, as a means of celebrating the angelic Humanities at the expense of that beast Science. Such a move would be cheap, silly, and wrong. Rather, I simply want to emphasize that, having better understood the near-miracle of our ability to decode marks on paper, we are left with a truth equally remarkable: that some of us greatly *desire* to do so, and that some of us find abiding consolation in what we encounter when our eyes scan words on the page in those strange jerky saccades. That images striking the retina can be transferred to the edge of the left occipito-temporal fissure, and there can be decoded, is extraordinary; that what is decoded there can bring tears to the eyes, or cause laughter to rise up from the diaphragm, or bring to a deeply unhappy boy cut off from his beloved mother a few hours, or many hours, of joy . . . I don't have words to express how deeply strange this is. I encouraged you in my previous section to "read at whim!"—but why would anyone ever be struck by that particular whim? This is a mystery.

Aspirations ☞ Some readers may be puzzled to find that this book didn't end several pages ago. *Read at whim*, I told you—What more is there to say?

Perhaps there's a little more that could be said. "Whim" may not cover *all* the bases. But before I go any further I want to insist that it remains the foundation. It should be normal for us to read what we want to read, to read what we truly enjoy reading. However, even if we follow that model, there will be times when we ask, along with the old song, "Is that all there is?" We may well wonder if there are other books—or other kinds of books than the ones we typically prefer—that might give us pleasure or edification or both.