

BOOK REVIEW

## Adrian Johns, *The Science of Reading: Information, Media, and Mind in Modern America*

Chicago: University of Chicago Press, 2023. Pp. 504. ISBN 978-0-226-82148-1. \$32.50 (cloth).

Lisa Gitelman

New York University

That the world we live in is shaped by science seems indisputable, even if the histories of that shaping remain difficult to delineate. As Adrian Johns's compelling new book argues, 'We live today in a world shaped by the science of reading' (p. 416). Johns makes the case that there is such a thing as the science of reading, and that tracing its development is worthwhile in some measure because it has made a difference. The history of the science of reading has been neglected until now not because the subject of reading is unimportant – it is anything but – but rather because of the ways in which all scholarly inquiries morph across time, subject to institutional vicissitudes, competing research programmes, disciplinary shifts and the interests and attentions of a broader public.

The science of reading began in the late nineteenth century, entwined with the beginnings of the modern research university and amid the contexts of newly industrial print production. James McKeen Cattell helped establish the science in America – after training with Hermann von Helmholtz and Wilhelm Wundt in Germany – and went on to a lengthy career editing *Science* magazine and presiding over a scientific news agency. For Cattell and his colleagues, questions about reading were psychophysical in nature, and reading begged for anthropometric measurement. Specialized laboratory instruments were developed to detect and record eye movements and gauge reaction times. For Edmund Burke Huey, author of the field's foundational book, reading was a matter of mental hygiene, one with obvious social implications. New tools like eye movement cameras and tachistoscopes would soon be deployed to measure, record and eventually optimize reading. America needed better, more readable fonts, for one thing, and elementary education needed a complete overhaul. 'The experience of modernity' itself, Johns writes, had turned the science of reading into an urgent matter (p. 93).

In the twentieth century, psychophysics was superseded by new disciplinary and institutional formations. Some scholars, like Charles Hubbard Judd at the University of Chicago's School of Education, stuck with laboratory science. (Chicago even started a 'lab school'.) Others took up questions about reading as a social-scientific inquiry, looking into reading as a shared social practice to be understood demographically, for instance, researched by librarians, among others, and cultivated as a civic virtue. (The University of Chicago started its Graduate Library School.) Disparate lines of inquiry like these would eventually lead to a new, resilient concept: communication (p. 116; and Chicago started 'the world's first graduate degree-granting body in the prospective field of communications' – p. 205).

Elsewhere, the laboratory science of reading proliferated. In the hands of Samuel Renshaw at Ohio State University, for instance, it became ‘psychological optics’. Renshaw tackled questions of pattern recognition and eventually turned the tachistoscope into a wartime training device for fighter pilots and other military personnel. The social science of reading flourished as well. Horace Mann Bond of Fisk and later Langston University, for one, drew on the science of reading to critique intelligence testing, and his research into racially segregated education became central to Thurgood Marshall’s brief on behalf of the NAACP in *Brown v. Board of Education*. Early childhood education remained a core concern. At Yale, Omar Khayyam Moore developed experimental interactive technologies with an eye toward progressive education reform. Whereas Renshaw and other advocates of psychological optics had used technology to optimize readers, with implications for cockpit design, for instance, Moore’s ‘talking typewriter’ in a sense had a model of the human learner built into its design, with implications for personal computers (p. 308). With so many competing lines of inquiry, the science of reading played a part in the emergence of many new interdisciplines, some short-lived (for example, cybernetics), and others more persistent (for example, psycholinguistics).

As an applied science, the science of reading gave us elementary books concerned with the adventures of Dick and Jane. Gizmos of innumerable kinds were proffered to educators, harbingers of today’s field of educational technology, or ed tech. Public-opinion research has long had a deep investment in the science of reading, while eye tracking remains important to market research and interaction design, and pattern recognition lies at the root of today’s machine learning. Public policy, however, is where reading research meets scepticism and scepticism breeds moral panic. Publications like Rudolf Flesch’s 1955 *Why Johnny Can’t Read* contributed to what Johns terms the ‘forever wars’ about early education that continue to play out today, most recently perhaps in headlines about the failure of whole-world methods of reading instruction. At the same time, the shape-shifting contestation of scholarly inquiry over time has helped to inspire public scepticism about scientific expertise itself. Reading wars, Johns shows, were thus a leading edge of the science wars, since they helped to create a public chronically ‘liable to hearken to the sirens of scientific skepticism’ (p. 373).

The vast scope of *The Science of Reading* will make this a satisfying book for readers in numerous fields and periods. Johns is an exacting researcher and an engaging writer. Like his first book, *The Nature of the Book: Print and Knowledge in the Making* (Chicago, 1998), this one takes the history of science toward the history of knowledge more generally. To read is to know. If *The Nature of the Book* explores the emergent authority of modern science in relation to the authority of letterpress printing, the current book explores the authority of science in relation to the question of reading, how the question has been asked and where its asking has taken us.