In a final section on 'The traumatized brain', Jill Matus attempts to historicize the emergence in the nineteenth century of the notion of psychic shock through a study of a range of both fictional and non-fictional texts. Her contention is that the literary work should be viewed not only as "an index of cultural reactions to scientific concepts, but also as an agent in developing discourses of the mind and body" (p. 165). Mark Micale gives a more straightforward account of the (largely unrecognized) existence of psychological trauma among many of those who fought in the American Civil War. The fact that Silas Weir Mitchell, the most prominent American neurologist of the epoch, was also a successful novelist provides a somewhat tenuous link to the main themes of the volume.

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Daniel Lord Smail, *On deep history and the brain*, Berkeley and London, University of California Press, 2008, pp. xiv, 271, £12.95, 21.95 (hardback 978-0-520-25289-9), £9.95, $15.95 (paperback 978-0-520-25812-9).

These days an entrepreneur seeking his or her fortune in academia would be wise to attach the prefix "neuro" to the most conservative sounding academic speciality. Some recent successful examples include the new Oxford Centre for Neuroethics, where neuroethicists study whether the neurosciences ought to manipulate moral judgements, and the neuroeconomists at Duke University, who investigate whether emotional states influence consumer choices. Neurolawyers at Vanderbilt University Law School have begun analysing the cerebral structure of criminal thought and intent, while neurophilosophy has been around since the 1980s. And now we have the newest "neurospecies" in Daniel Lord Smail's essay *On deep history and the brain*—a book that not only promises a "grand historical narrative that links the Paleolithic to the Postlithic" but does so by inaugurating neurohistory.

Ordinarily, readers might take umbrage when a book attempts to answer questions such as: how did the cultural evolution of the clitoris allow women to experience sexual pleasure (p. 128)? Why is gossip more addictive for women than for men (p. 178)? And why did the Inuit, master furriers that they were, become short in stature (p. 194)? Yet, Smail's desires to end the chronology of sacred history, to account for Neolithic peoples, to include Africa in the story of human history, to use science to challenge biblical literalism, to give a voice to the speechless past of prehistory, and to engage multiple audiences with his interdisciplinary argument, will likely win him many enthusiasts and disciples. Even if the thrust of Smail's argument is scarily reminiscent of the "neurotyrannies" found in Philip K Dick novels, it is nevertheless quite certain that most reviewers will laud his achievement in extending the recent insights of the neurosciences to history. Though I cannot count myself among their laudatory numbers, those reviewers are right that this neurohistory has an argument worth contemplating.

Premodern history, Smail suggests, is not only fascinating in its own right but has played a role in everything that came afterwards. Patterns of biological evolution, changes in the global environment, the spread of disease, and other naturally occurring calamities must have played a role in the emergence of premodern societies. Of those emergences, however, there is little more than the geological record and slight archaeological evidence. Without documents, one might think that a deep history—a history that bridges the Palaeolithic and Postlithic divide—would be impossible. Recent developments, Smail asserts, in neurobiology, neurophysiology and genetics not only suggest otherwise but also have implications for study of the more recent past.

The assumption at the heart of Smail's argument is that certain ideas "can 'possess' the brain" (p. 97). In a broader sense, culture is a "biological phenomenon" that can literally

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influence the shape of neural networks (p. 154). Some ideas, like gender, can become so fixed within neural networks that they can be mistaken as genetic. Other ideas and their cultural expressions (such as marriage, virginity, celibacy, or revulsion at incest) appear more as traditions or institutions. Whether adaptive or maladaptive, as these ideas or traditions affect the neural pathways, they can consequently replicate themselves and even "infect" other people. These structures, however, are not biologically or culturally fixed. Indeed, like other animals, humans seem naturally inclined, and even wilfully relish, testing their biological states and the limits of their cultural norms.

Although natural selection mitigates some of the more harmful effects of these habits, the intentional testing of these limits has broad social effects. One is that individual tinkering (whether due to genius or deviance) can unintentionally cause significant fluctuations in the long-term shape of human culture. Palaeolithic man may have had a genetically adaptive predisposition for acquiring identity markers like jewellery, but the Postlithic consequences of that predisposition—e.g. commodity culture—have far transcended the original adaptation's biological advantage. Another effect, even bigger, is that civilizations, rather than putting an end to biology, enable it. Ultimately, the narrative of the brain—the neurohistorical perspective—reveals that although the testing of human limits may be of ancient genetic origin, its effects have been with us ever since in the transcendence of the cultural over the biological.

In a satirical light, one might see Smail's argument actually unfolding before our eyes. The idea of the "neuro" certainly seems to have had a discernable cultural impact. For all its slick packaging, rhetorically appropriate relativism, historiographically informed analysis, and self-assured paraphrasing of Darwin's *Origin of species*, one could nevertheless dismiss this book on the grounds that its argument has something of the simplicity of the origin tales in Rudyard Kipling's *Just so stories* with none of the charm. But, in this case, satire is too apathetic. There is much more at stake here than whether history can be done in the absence of documents or with the tools of science. Smail is most certainly correct in his claims that culture matters and that discourses construct received truths. Yet, he can provide scant evidence for why and how culture becomes "wired" (a metaphor Smail deploys frequently but never explains) into our brains. Furthermore, the limits of some of the scientific support he musters are self-evident—Do women *really* gossip more than men? Do we *really* understand why horses snort? Is not some of this science still conjecture, hypothesis, or correlation? Another point against this metanarrative is one that Karl Popper might have offered. Its explanatory power seems capable of explaining practically everything; whatever happens always confirms the theory. Finally, by asserting this new metanarrative, Smail has unwittingly drafted yet another chapter in what Michael Foucault termed the manifesto of biopower. One would have thought that the logic of his own argument would have made Smail more cautious.

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Lorraine Daston and **Peter Galison,** *Objectivity*, New York, Zone Books, 2007, pp. 501, 32 colour plates, 108 black and white illus., £25.95, $38.95 (hardback 978-1-890951-78-8).

In *Objectivity*, Daston and Galison challenge the received view that it is possible to observe nature without contaminating it with preconceived notions, prejudices and above all over-interpretation. This ahistorical view embraces the possibility of knowing the world as it "really is" without the involvement of a knower subject. Daston and Galison's key weapon to contest this position is no more and no less than history. They argue that the ahistorical outlook only emerged in the

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