

The Shock of the Old: Technology and Global History since 1900

by David Edgerton

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Hyperbole is one of the byproducts of technology. Writers soaked in the spirit of futurism proclaim new technologies are ‘paradigm shifting,’ imagining that the value of their chosen technology is self-evident and that it will be universally adopted by an enthusiastic population. History is often dubiously divided into eras defined by their ‘dominant’ technology—the twentieth century has been neatly chopped into periods of electrification, motorisation, and computerisation.

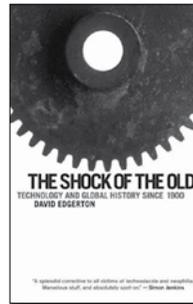
David Edgerton’s *The Shock of the Old: Technology and Global History since 1900* is a contrarian account of the relationship between technology and social and economic history. Dividing the book into what he sees as the common fallacies of popular accounts of technological history, Edgerton tackles the distinction between invention and innovation, the ‘techno-nationalism’ behind national science programs, the lag between the introduction of technology and its widespread adoption, a similar lag between adoption in the developed and developing world, and the underrated importance of production and maintenance technologies.

But Edgerton’s biggest target is accounts of history that overemphasise the historical importance of cutting-edge

technologies. He argues that technologies have a remarkably long shelf life: seemingly obsolete technologies remain in common use long after they have been superseded. This is hard to argue with. Anyone who has worked in a large organisation will be familiar with the stubborn longevity of enterprise computer systems.

Few fields demonstrate the gap between highly publicised cutting-edge technologies and the greater importance of legacy technologies better than warfare. As popular history would have it, chemistry and engineering, represented by the twin menaces of gas and the airplane, defined World War I, and motorisation and nuclear physics defined World War II.

Yet, as Edgerton demonstrates, such a view is deeply misleading. Of the millions killed in World War I, 80% died from injuries inflicted by ballistic weaponry. Far more important than gas, airplanes, and tanks was artillery, particularly as it was combined with new logistics and coordination techniques. In World War II, small arms and artillery were even more important again, relative to the leading technologies being introduced at the time. Edgerton recounts the development of the rifle over the last one hundred years, focusing on the popularity of the Lee-Enfield rifle in the first half of the century and the Kalashnikov assault rifle in the second. Rather than the ‘zeppelin and the bombing aeroplane,’ which H. G. Wells believed had brought battles to the home front, Edgerton writes that it was the cheap rifle that civilianised warfare in the twentieth century.



The Shock of the Old also emphasises the primacy of production and maintenance technologies in technological history. Production has hardly been neglected by historians—the Industrial Revolution consisted of developments in production technologies, and few casual observers of the modern economy are not aware of the supply chain innovations made by firms

like WalMart. But the primacy of maintenance in technology choice and diffusion is not as widely recognised. For instance, Edgerton cites a study estimating that the upfront cost of a personal computer represents just 10% of its total lifetime cost, once installation, repairs, upgrades, and training are factored in. Edgerton does not explore or provide a citation for this estimate—but most ‘total cost of ownership’ studies apply to computers used in business, not the home. Part of the explanation for this large cost is the complexity and longevity of the enterprise systems mentioned above.

Edgerton jumps haphazardly from the developed to the developing world, and from issues like technology transfer to the Soviet Union during the Cold War to animal husbandry and then to the Japanese bicycle industry. Such scope is necessary—part of his aim is to rebut the myopic focus that high-school-level histories have on the English Industrial Revolution—but by doing so, his arguments tend to lose their coherence. *The Shock of the Old* gives the unfortunate impression of being a thematic collection of trivia, rather than a revisionist account of technology and its social and economic role in history.

Similarly, some of his arguments come frustratingly close to the banal—the difference between the availability of consumer technologies in developing and developed countries is most obviously a consequence of wealth disparities.

Furthermore, while reviews have praised the novelty of Edgerton's arguments, *The Shock of the Old* does not represent an advance in the history of technology. The distinction between 'invention' and 'innovation' is a well-recognised one. Indeed, that distinction has become a pivotal point in modern debates about technological change in communications and software industries.

Similarly pivotal is the crucial distinction between the development and diffusion of technologies—or as Edgerton describes it, the difference between a history that focuses on when a technology was invented and one that focuses on when and where it was used. On this point, *The Shock of the Old* is clearly not novel. Technological diffusion is the central issue of the major texts of the genre. How and why the Industrial Revolution began in England is just as much a question of diffusion as it is of invention—European manufacturers in the late eighteenth century were as easily able to obtain English technology as the early English adoptees. Edgerton gives these questions a broader geographic context than Western Europe, but the issues he raises are much the same as those raised by the more seminal works of technological and economic history, and he does little to resolve them.

Diffusion is, for example, one of the core problems for our understanding of economic

development in classical Rome. Roman innovators were able to make some important advances in agriculture, water management, and seafaring, but the limited adoption of their technologies remains striking. For instance, the Roman water mill was tantalisingly close to providing an epoch-shifting economic breakthrough, but it remained limited in use and scope. We can only speculate what such a breakthrough might have meant for civilisation.

Edgerton's book is an engaging and accessible exploration of the core myths of technological history, but is, unfortunately, less groundbreaking than its title implies. *The Shock of the Old* is interesting, but not innovative.

Reviewed by Chris Berg

*Divided Nation?
Indigenous Affairs and the
Imagined Public*

**by Murray Goot and Tim
Rowse**

Melbourne University Press,
Melbourne, 2007

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It is often lamented that indigenous policy is not an election issue in Australia. But while indigenous policy may not decide marginal seats, public opinion polling on indigenous affairs has played a significant role in policymaking.

The Howard Government's dramatic intervention in the Northern Territory's remote communities, in the aftermath of the *Little Children Are Sacred* report into child sexual abuse, is a case in point. With a federal election expected before the end of 2007, there was much talk in media and policy circles about the intervention's effect on opinion polls. How the public perceived the policymakers' motivations probably received as much airplay as how the public perceived the policy's merits.

But what is public opinion on indigenous policy, and how important is it in deciding policy? This is the question that academics Murray Goot of the Australian National University and Tim Rowse of Macquarie University set out to answer in their recent book, *Divided Nation? Indigenous Affairs and the Imagined Public*.

The authors consider four significant events in the past forty years of indigenous policy: the 1967 referendum, the 1980s land rights debate, the 'Mabo' decision in 1992, and the end of the 'decade of reconciliation'

The history we are taught in school, held to be common knowledge, is almost always wrong, and nowhere is this more true than with the history of technology. Growing up in the United States, I was taught that everything was invented in America: that Howe invented the sewing machine, Fulton the steamboat, Morse the telegraph, and Edison invented the incandescent light bulb everything else. Of course, none of that is true, and my favorite books are everything-you-know-is-wrong books which correct our assumptions of how modern life came to be. The basic idea, that old technology hangs around a while after new technology is available, could be summed up in this sentence. Everything else is just repeated historical examples to illustrate the same point over and over and over again. David Edgerton. *The Shock of the Old: Technology and Global History Since 1900*. xviii + 270 Pp., Figs., Bibl., Index. Oxford: Oxford University Press, 2007. \$26. [REVIEW] Thomas P. Hughes - 2007 - *Isis* 98 (3):642-643. Pompeii (M.) Beard Pompeii. *The Life of a Roman Town*. Pp. History of Technology John Hubble Weiss, *The Making of Technological Man: The Social Origins of French Engineering Education*. Cambridge, Mass, and London: MIT Press, 1982. Pp. xviii + 377. ISBN 0-262-23112-3. £21. [REVIEW] Marie Hall - 1984 - *British Journal for the History of Science* 17 (3):329-330. *A Short History of Technology* T. K. Derry and Trevor I. Williams: *A Short History of Technology From Earliest Times to A.D. 1900*.