

The Shock of The Old
By David Edgerton
Profile Books, 270 pages

Reviewed by
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Sujit Saraf's novel, *The Peacock Throne*, was published recently by Sceptre.

On rural roads in northern India, a strange vehicle serves as taxicab. It has a chassis assembled from tractors, jeeps and bullock-carts, a scavenged gear-box and rear-axle, and a diesel engine from a water pump. It is painted in wild colours, bedecked with lights, rickety, cheap, dangerous and enormously popular. Over the years, it has collected a cult of its own – websites rave and tourists take photographs. When not in use, the taxi engine can irrigate fields of sugarcane and wheat. The name of this vehicle describes it very well – Jugad, meaning “makeshift arrangement” in Hindi.

You will find no mention of the Jugad in any history of twentieth-century technology, but it fits neatly into David Edgerton's new account of that history. He says that “innovation-centric” accounts, while exaggerating the importance of milestones like aviation, the bomb, the pill and the internet, exclude vast swaths of technology that were truly significant in the twentieth century. As an example, the killing power of the atomic bomb is a measure of its significance in securing victory, yet alternative “older” technology – raids by B-29 bombers – could have killed a comparable number at lower cost. A similar argument can be made for the German V-2 rocket in World War II, in which the supposedly mechanized German Army relied on distinctly old technology for transport – 1.2 million horses. So how does one strip away propaganda and identify truly significant technologies? By studying “technology-in-use”, Edgerton answers - by looking at the *things* used widely in the twentieth century, and their effectiveness against available alternatives.

This use-based history discovers many stars which merit barely a line in the innovation-centric accounts – cement, shipping and DDT, the sewing machine, the refrigerator and the ricksha, slaughter-houses in Uruguay and sheets of corrugated iron. In this history, technologies appear and fade away, are re-born, imitated and adapted, and sometimes go “low-tech”, as in the case of ship-breaking at Alang Beach in Gujarat. Nations that innovate do not necessarily benefit from technology, and those that do are not necessarily innovative. Along the way, the author debunks many fallacies: that change takes place at an ever accelerating pace, that the new is increasingly better, that societies suffer from a “cultural lag” in adopting new technologies, that there is a one-way technology transfer from the rich to the poor world, that technology dissolves national borders and empowers the weak (how often have we heard this claimed for the internet?) and that scientists and engineers are forever engaged in inventing new things, rather than maintaining and

operating the “old” technology that already works. Living in Silicon Valley, I am frequently assaulted by the next big idea in technology, each “historic” for a few weeks, and this use-based account is a refreshing antidote to such technological arrogance.

However, such democratization of history suffers from its desire for inclusion and fairness, much like Howard Zinn’s *People’s History Of The United States*, which is “disrespectful of governments and respectful of people’s movements of resistance”. Zinn makes no apologies for this bias because “the mountain of history books under which we all stand leans so heavily in the other direction ... that we need some counterforce to avoid being crushed into submission”. He goes on to apologize for neglecting the histories of Latinos, Latinas, gays and lesbians, as if a “people’s history” were the sum of the history of every person in a society.

So we may ask: how far must we descend down this use-based slope? Should we include the hundreds of improvised devices used by housewives in poor countries? What about the adapted bellows used by blacksmiths? You only have to see how mechanics in India locate the hole in a punctured tyre to discover another “creole technology”. But are these instances of twentieth-century technology, or ineffective devices that are no better than available alternatives, but are used anyway by large numbers of (usually poor) technically incompetent people? In truth, these are mere makeshift arrangements - they are “jugads”. Thankfully, Edgerton does not mention the Jugad itself as an example of creole technology, but in stripping his history of an innovation-centric bias, he has introduced the bias of numbers: a use-based account will likely be dominated by things used in countries with large populations. To be fair, that is what he claims to do, saying his new history shifts emphasis from “the new to the old, the big to the small, the spectacular to the mundane, the masculine to the feminine, the rich to the poor”. That it does, becoming in its final form a history of people and society rather than technology. However one defines that word – his definition is consistent with his account – this use-based history of technology is far more complex, varied, non-linear, and illuminating than the history of the bomb and the internet.