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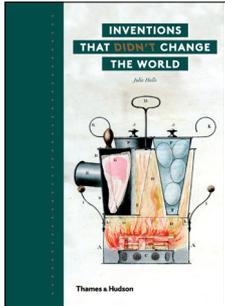
is “associated” with risk; but suddenly we find, in this edition: “Risk factor (Syn: determinant) A factor that is causally related to a change in risk of a relevant health process, outcome, or condition”. Although we all know that association need not imply causation, this new definition is presented with no signal or acknowledgment of the change. Given the importance, and complexity, of unravelling causal versus non-causal relations in much epidemiological work, this bold shift is bound to disturb many people. The

inevitable confusion will not be helped by a final sentence in the text which follows the definition of risk factor: “To prevent medicalization of life and iatrogenesis, the relevance and significance of the factor-outcome risk relationship must be cautiously assessed; so must uncertainties and ambiguities in risk-related concepts, as well as different legitimate meanings of risk across and within cultures.” This is not an easy sentence, but would seem more consistent with the traditional definition of a risk

factor than with the sixth edition’s radical departure.

Let us hope that the editors of the next edition will be encouraged: to accept the challenge of the subject’s breadth; to strive for correct, consistent, clear, and concise definitions; and maybe even to start by defining epidemiology once again, quite simply and appropriately, as “studies upon the population”.

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Inventions That Didn't Change the World
Julie Halls.
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In brief

Book *Ingenious inventions*

During the 19th century a handful of British inventions changed the world, notably railways, electric motors, and chloroform anaesthesia. Some inventions were less revolutionary but remain vital today, such as macadamisation in road-building and the safety bicycle. Yet others worked well for a while, like the Brougham horse-drawn carriage, before becoming redundant with advancing technology. Most inventions never left the drawing board, however. After being registered by their optimistic inventors, they were consigned to the vaults of the UK Government’s designs registry at Somerset House in London, and utterly forgotten. Now, Julie Halls has exhumed a selection of the coloured drawings and copperplate descriptions from the volumes where they were originally pasted, and created an irresistible illustrated book *Inventions That Didn't Change the World*.

“In the 19th century anyone who had an idea that might solve a problem or speed up a task could come up with a technical solution”, writes Halls, a National Archives specialist in these registered designs, who regards them with a combination of respect and mirth. “Inventors were ingenious, imaginative, sometimes misguided, but, in the unexpected world of Victorian inventions, ever

hopeful.” Some were professionally qualified, such as a surgeon offering a “Design for an improved pneumatic inhaler”; many more seem to have been industrious amateurs.

The inventors were responding to the introduction of the Designs Registration Act in 1839, and subsequent copyright legislation leading up to the Great Exhibition of 1851. Hitherto, the only way to protect an invention was to take out a patent. However, the patent system was extremely cumbersome and expensive. The idea behind the new act was to reserve the patent system for “important” inventions, rather than “snuffers, stirrups, lamps, cork-screws, and other articles of domestic use”, in the words of a parliamentary select committee on patents. The latter items were to be treated as a new “shape or configuration” of an already existing useful object, and protected by registration for 3 years for a fee of £10.

Halls’s book contains mainly designs for domestic articles and is divided into chapters on “House and Garden”, “Field and Factory”, “His and Hers”, “Out and About”, “Preventatives and Panaceas”, “Sport and Leisure”, and “Safety and Security”, each introduced by some informative social history. The medical devices in “Preventatives and Panaceas” range from “Artificial leeches” (1848) and a “Design for

a cholera-belt” (1882) supposed to protect against bowel complaints and miasma, to a “Design for double spectacles” (1846), offering an extra lens hinged to either side of the usual lenses, which claimed to be suitable for both close-up and distance viewing. The first of these devices is simply a lancet attached to one end of an india-rubber cylinder containing an adjustable piston. According to the inventor’s spec, “On releasing the instrument from the pressure of the fingers, the tendency of the elastic cylinder to expand and resume its original form produces a sucking action which continues until it is filled more or less with blood.” Artificial leeches had a potential market, Halls alarmingly notes in her introduction, because of a shortage of natural leeches due to overuse by doctors and patients treating everything from headaches to prostate problems with bloodletting.

Would any of the book’s devices have made the reputation and fortune of their designers, had they been constructed? One has grave doubts, with the possible exception (I hazard) of the “Combined walking stick and railway-carriage door-key”. Instead, these inventions provide entertaining glimpses of the lives, hopes, and fears of our 19th-century forebears.

Andrew Robinson

Andrew Robinson is the author of *The Last Man Who Knew Everything*, a biography of physician and polymath Thomas Young.