

## Scientia Canadensis

**Accident Prone: A History of Technology, Psychology, and Misfits of the Machine Age. By John C. Burnham. (Chicago: University of Chicago Press, 2009. 336 p. ISBN: 9780226081175 \$40.00)**

Magda Fahrni

---

Science in Government  
Volume 35, numéro 1-2, 2012

URI : [id.erudit.org/iderudit/1013991ar](http://id.erudit.org/iderudit/1013991ar)

DOI : [10.7202/1013991ar](https://doi.org/10.7202/1013991ar)

[Aller au sommaire du numéro](#)

---

Éditeur(s)

CSTHA/AHSTC

ISSN 0829-2507 (imprimé)  
1918-7750 (numérique)

[Découvrir la revue](#)

---

Citer cet article

Fahrni, M. (2012). Accident Prone: A History of Technology, Psychology, and Misfits of the Machine Age. By John C. Burnham. (Chicago: University of Chicago Press, 2009. 336 p. ISBN: 9780226081175 \$40.00). *Scientia Canadensis*, 35(1-2), 167–170. doi:10.7202/1013991ar

---

Copyright © Canadian Science and Technology Historical Association / Association pour l'histoire de la science et de la technologie au Canada, 2012

Ce document est protégé par la loi sur le droit d'auteur. L'utilisation des services d'Érudit (y compris la reproduction) est assujettie à sa politique d'utilisation que vous pouvez consulter en ligne. [<https://apropos.erudit.org/fr/usagers/politique-dutilisation/>]

---



Cet article est diffusé et préservé par Érudit.

Érudit est un consortium interuniversitaire sans but lucratif composé de l'Université de Montréal, l'Université Laval et l'Université du Québec à Montréal. Il a pour mission la promotion et la valorisation de la recherche. [www.erudit.org](http://www.erudit.org)

It is of course a simply matter for a reviewer to identify lacunae in a book of this scope and brevity. But to play fair with the author let me name only a couple which seem especially troublesome. This is a book on the development of the US economy between 1790 and 1865 which a reader could complete and not learn that slavery existed. That doesn't work. Not only is the existence of slavery a significant explanatory variable when looking at the geographic distribution of patenting, slavery was in fact much more important to the industrial economy of the United States than has generally been recognized. One very important class of institutions is not mentioned in this book, insurance companies. Their role in the evolution of steam technology cannot be overestimated and they were significant in other sectors as well. Strangely, the manufacture of precision scientific, navigational and survey instruments is not covered. Readers of this journal, aware of how continental was the pool of North American technology, will question Thomson's insistence on the importance of the national boundary in defining the limits of an innovative system even at times when he presents information to the contrary. Nova Scotian Abraham Gesner for instance is mentioned but his nationality is ignored.

At the end of his book the author himself hints at fundamental changes to come in the post-bellum world and America's second industrial revolution. His study will help us in framing questions about how much of the elaborate network of individual and institutional relationships would be subsumed into, how much superseded by and how much would endure after the rise the corporations and new national organizations (engineering societies, standards bodies and the like) after the Civil War. This is a book we will be consulting and sending our students to for a long time. How it contributes to any important new synthesis will remain to be seen.

JAMES HULL

*University of British Columbia, Okanagan*

***Accident Prone: A History of Technology, Psychology, and Misfits of the Machine Age.* By John C. Burnham.** (Chicago: University of Chicago Press, 2009. 336 p. ISBN: 9780226081175 \$40.00).

John C. Burnham's *Accident Prone* is a biography of an intriguing idea—the “orphan idea” (p.144) of “accident proneness” which was born in the 1920s, reached the height of its popularity in the decade following the Second World War, and, at least among safety professionals, gradually lost ground to other ways of thinking about accidents from the 1960s onward. This history of “the interface between humans and technology”

(p.4) traces the evolution of the idea of accident proneness from its “simultaneous discovery” in England and in Germany in 1926 onward through the twentieth century. The author ranges widely through published sources: scientific journals, pedagogical literature, the trade press, engineering publications. Although this is not a systematically comparative history, he draws upon examples from various national contexts, particularly Great Britain, the United States, Germany, and France.

The idea of accident proneness was simple: essentially, as the Cleveland Railway Company explained in 1930, the belief “that accidents do not distribute themselves by chance but that they happen frequently to some men and infrequently to others” (p.76). Those individuals deemed accident-prone were what one industrial expert termed in 1943 “the misfits of a machine age” (p.110). As Burnham states at the outset of his book, he is interested in the “disjuncture” between the fact that “Technology unforgivingly demands uniformity from human beings who encounter it” and the fact that “People encountering technology [...] differ from one another” (p.1).

In the late nineteenth and early twentieth centuries, different strategies were adopted in order to address the alarming number of accidents resulting from industrial technology such as workplace machinery, automobiles, and means of mass transportation: first, attempts to better control the machinery (what Burnham calls “engineering safety”); then, attempts to educate the human beings who used the machinery. Along the way, specialists and employers in mass transit, safety leagues concerned with traffic accidents, industrial psychologists, physical educators, and pediatricians became aware of the phenomenon that they called “repeaters.” These were individuals who “had more accidents than was their quota” (p.179), who displayed a “disposition,” “susceptibility,” or “affinity” for accidents. Burnham traces the birth of the idea of accident proneness to the year 1926 when, in both England and Germany, the notion (in German, *Unfallneigung*, or inclination to accident) first appeared in the scientific literature. Thereafter, through the interwar and post-Second World War years, in industrial workplaces and in settings such as mass transit systems, experts worked to identify accident-prone individuals and to isolate them so that they would not cause harm to themselves or to others, by dismissing them from their functions or by retraining and relocating them. Interestingly, although psychologists had been among the first to suggest the existence of this phenomenon, psychiatrists refused to medicalize it as a “standard disease syndrome” (p.122). Accident proneness was thus never truly medicalized, remaining on the margins of medical thinking.

In the last decades of the twentieth century, the idea of accident proneness lost purchase among scientists and safety experts, ceding to analyses framed in terms of “risk groups” and epidemiological thinking. Rather than considering that particular individuals were especially susceptible to accidents, those who thought in epidemiological terms or, more broadly, in terms of ‘risk,’ considered that social factors made certain groups of people—infants and toddlers, boys and men, the elderly, the new-on-the-job—particularly vulnerable to accidents. Moreover, the idea of the accident-prone individual—the person who was more likely to fall victim to an accident, despite safety education—fit uneasily with the universalist goals of safety campaigns in workplaces and on the roads. Ultimately, engineers, technical experts, and safety professionals began to focus less on educating individuals, “accident-prone” or not, and more on adopting foolproof engineered solutions, applicable to all and designed to eliminate the possibility of human error—in other words, technological fixes to problems caused by technology. Nonetheless, the idea of the accident-prone individual persisted, to some degree, in folk wisdom and popular culture.

This is a truly wonderful subject for a book: the applied history of an idea that had, as the author points out, a precise birthdate and a clearly identifiable age of maturity, although “no death date” (p.4). In tracing the evolution of this idea in scholarly circles, but also in concrete settings such as workplaces and urban streets, the author has written a book that bridges the history of science, the history of work, and the history of ideas. Readers of this book will learn a great deal. Nevertheless, while *Accident Prone* undeniably stimulates reflection, it sometimes leaves the reader wanting to be more solidly anchored in time and, especially, space. The author’s decision to range widely and freely across national boundaries (his focus is “Europeanized people” (p.92), a truly huge category), and to rely largely upon published rather than archival sources, makes for a book that seems at times too general and impressionistic. Such an impression is reinforced by the author’s frequent use of the term *Zeitgeist*, or what he occasionally refers to as “public readiness” for a new idea (pp. 67, 86)—a slippery notion, for a historian, that avoids questions of agency, intention, and causality. The focus on ideas also leads Burnham to underestimate, in my view, the importance of material factors such as cost-saving in the application, evolution, and ultimate decline of the idea of accident proneness.

Moreover, it is only in his discussion of the post-Second World War era that the author chooses to link his discussion of accidents to the literature on risk. Yet the sociography of risk (notably the well-known work of Ulrich Beck and of Anthony Giddens), alongside the historical studies of

Arwen Mohun, might have helped to explain how accidents were conceptualized within a risk framework from the very beginning of the period studied here, smack in the middle of turn-of-the-twentieth-century industrial modernity, long before the era that Beck has called the “risk society.”

Finally, there is no real word from accident victims in this history. No doubt it would have been difficult to get at their stories. Yet some attention to union archives, workers’ compensation records and autobiographies might have given us a sense of how the victims (and agents) of twentieth-century accidents understood their own ‘bad luck.’

MAGDA FAHRNI

*Université du Québec à Montréal*

***Canada and Ballistic Missile Defence, 1954-2009: Déjà Vu All Over Again.* By James G. Fergusson.** (Vancouver: UBC Press, 2011. 352 p. ISBN 978-0-7748-17516 \$34.95).

It has been nearly 30 years since Ronald Reagan made his Strategic Defense Initiative speech in March 1983. I recall watching the live broadcast in amazement. The Pentagon, also amazed, was totally blindsided by the announcement and reacted instinctively against it: the money would come from their budget for real weapons.

Of course Reagan was not the first proponent of ballistic missile defence (BMD), and he is certainly not the last. The history and politics of BMD in the United States is an epic, with great and small battles raging over the decades, and littering the world with political and military fallout. But James Fergusson’s book is not really about the USA. Rather, he has examined the Canadian content of BMD, a small, but inside Canada, significant set of stories.

I was truly happy that a book on the topic had finally come to light. It covers the history and politics with some skill. It helps place Canadian political and military actions, often divergent, in context. For this I am grateful.

I would have been even more grateful if the document footnotes could have been used to retrace the records. Unless the collected files have been made available to the public, as I do with my nuclear weapons files, it would be nearly impossible to follow the author’s research. It would also have been better as an academic study rather than an extreme pro-BMD partisan attack.