It has never been the habit of the scientists of this country or the policy of this Government to withhold from the world, scientific knowledge. — President Truman’s August 6, 1945 statement announcing the bombing of Hiroshima.

Before the nation had to contend with the weaponization of misinformation, disinformation, and malinformation, it grappled, wrestled, and fought battles over secrets—military secrets especially and atomic weapon secrets in particular. Alex Wellerstein’s book is the largely untold story of the tension between the free flow of scientific information (never absolutely free) and the equally imperfect notion of military secrecy at a time when science and the armed forces met in service to the nation.

Secrets—state secrets in particular—are simply put, another form of national treasure. Take it from the possessor and you have robbed them of a vital asset—one that erases military or more commonly today—economic advantage (the latter can lead to the former). Take the advantage away and perhaps in the near or even far term, the thief wins the battle if not the war. Now imagine if there is a real war and you harbor the secrets behind a game-changing, deployable, and devastating weapon. You would quite naturally do everything you can to protect those secrets to maintain your superiority. You would certainly try.

In messy, openly pluralistic democracies, secrets are living things. In their journey from conception to potential revelation, they create hurdles, obstacles, and problems for their keepers that are the consequence of their context—of where the secrets live—ostensibly environments of free flowing information. They can grow, change in nature, mature, and even die when they are revealed. Secrets are dark places where information goes to hide. They are holes, burrows, pits that bury information for the apparent good of the state. Some of the pits are shallow; some are like deep mines requiring skills and credentials to visit. All burden their keepers with consequences: those resulting from the uncovering of secrets and those associated with possessing and perpetually tending for the secrets. In democracies, secrets are like an exotic carnivorous pet: creatures requiring specialized care and periodic feeding that if not performed properly will get you injured—or worse. They don’t belong where they do, but they need to be kept alive because the consequences for not maintaining them are just too costly.

Secrets breed their own yin and yang. There are the keepers who grant secrets their anonymity and there are the thieves—those who seek to steal secrets and their unaligned partners, those who wish for various reasons to publicly reveal them. At the start of the atomic era there was no Internet, no digital databases and no laptop computers. There were paper files, reports, drawings, specifications, memos, letters, photographs, and the people that created them. Stealing secrets or revealing them in the latter half of the 20th century was largely a physical reality—not a virtual one. Keeping secrets was a matter of judging people—a somewhat distasteful practice that to this day seeks out those economically or otherwise compromised and therefore susceptible to leverage by the enemy. And, so we have the scene set—unenhanced and foreshortened to be sure—for Professor Wellerstein’s journey into the historical evolution of atomic secrets.
“Restricted data” is an extremely broad term used to control nuclear information and in fact is as revolutionary at it is evolutionary. It was a product of the Atomic Energy Act that gave rise to the Atomic Energy Commission (AEC), created in 1946. Designed to mitigate the myriad problems encountered when the free flow of information meets the needs for military secrecy, restricted data included all nuclear data used for the manufacture or utilization of atomic weapons, the production of fissionable material or the use of fissionable material in the production of power. By nature and not by regulation, no matter who created it or where they did so, such data was interpreted to be restricted—literally at the moment of its birth. The logic behind such a definition was manifold. First, it overcame what was considered weak security afforded by the existing Espionage Act which only considered transgressions against the government involving documents and not in a broader sense, the theft of information.

The new AEC, the keeper of atomic secrets and the issuer of security regulations, was the subject of much criticism because it was perceived to be the arbiter of what was free to be had by anyone (basic scientific information) and what should be kept secret. In a democracy, this is a task fraught with danger. However, the crafters of the Atomic Energy Act thought that there was a way out. If the AEC only could only remove secrecy status, the fear of a government agency classifying everything as a secret by force of its will was removed. With everything being “restricted data” from the moment of its creation, the AEC was given the only power left: It could declassify information. Like many policies before and after, these attempts at controlling information in a society that espouses its free flow gave rise to tensions years later. They found release as the information-world evolved and as the perception by the public of secrets changed.

Wellerstein’s history of course includes the people that so famously built, guarded and deployed the most fearsome weapons so far developed. What would nuclear history be without Groves, Oppenheimer, and President Truman (who as vice president was kept in the dark about the development of America’s secret weapon)? But there were many other less famous players who influenced the framework around nuclear weapons secrecy such as Vannevar Bush, the vice president of MIT, named by President Roosevelt to head the National Defense Research Committee, and a firm believer that science could produce viable applications for the American people, and who navigated Congressional hallways in the early years of bomb development never giving away too much information and averting oversight in his quest for government funding. Other influencers include James B. Conant, president of Harvard University who together with Bush laid the initial groundwork for secrecy around atomic bomb development in 1941. He initiated personnel clearance procedures by military security for anyone working in “Section S-1”—the code word for the former “Uranium Committee” set up to determine the feasibility of weaponizing the then nascent atomic technology. There are many more such as Ethel and Julius Rosenberg and their explosive and influential case of espionage—but these important figures do not dominate the narrative. Wellerstein is more curious about how the concept of secrecy was handled, organized, operationalized, and most importantly, how it evolved due to the actions of those that trafficked in this realm of grey definitions about security, fuzzy borders between free speech and censorship, and the trusting of scientists who, by definition, prefer open exchange rather than the suppression of information.

Evolved is indeed the word. The thefts of secrets in the days of the atomic-fission era were dominated by one motivation: obtain the secret to a new technology so as to dilute the controlling nation’s power. That was very much different from the thermonuclear (H-bomb) period that followed where motivations were fueled by the notion of world destruction should a major power nuclear exchange occur. The peace movement and its nuclear disarmament cousin were behind the public revelation of the H-bomb secrets—a far cry from the Rosenbergs and their USSR handlers. Wellerstein tracks, discusses, and teaches us how the secrecy framework changed with the advent of Cold War politics and why people devoted time, effort and potential loss of reputation or more, to reveal the secrets of the H-bomb.

This book has the potential for a broader reception beyond academia. Secrets, spying, and the clandestine efforts to reveal them, is tempting fodder for a general audience. Wellerstein succeeds in describing how secrecy about the world’s deadliest weapons was debated, succeeded, partially failed, and continues to this day. These challenges provide enough tension to keep the narrative flowing. They are compounded by players (primarily scientists) who for the most part felt that exchange of data and information should be unrestricted. It is all a very rational, very well documented and a carefully presented scholarly effort. Its academic approach will not necessarily carry enough energy and excitement for general consumption, but for those with...
interest, it is a decidedly good read from start to finish—especially considering that it is about a subject long-neglected.

The narrative may be consistently reserved throughout but it hits its stride when covering the revelations concerning the H-bomb. By this time, (the 1970s and 1980s), secrecy-reveals were motivated not by great power competition (aka espionage although undoubtedly that was on-going), but by the civilian nuclear disarmament and peace movements. It was believed that if one could piece together the H-bomb mechanism from various declassified or other publicly available sources, then ordinary citizens could participate in the demise of the weapons. Some people felt that anti-weapons fervor was being dampened by the secrets themselves—by being uninformed, participation in the movement was stifled. Indeed, a few devoted much time and effort and came fairly close to revealing with some accuracy the physical details of the H-bomb. One of the most prominent and influential cases was that of Howard Moreland—a journalist who the author interviewed (Wellerstein interviewed a number of individuals for the book), and who pitched a story to the left-wing magazine The Progressive, that included several H-bomb diagrams illustrating how it worked. The magazine, seeking censorship from the US Department of Energy (DOE) to enhance its reputation, pressed hard for permission to publish the accompanying article. The DOE, baited by the magazine, was willing to bring a court case and thereby test the legality of the concept of restricted data. It would also bring discussion of a topic into the court room that the government wanted to keep secret. As the case progressed, the revelation of a hastily declassified publicly accessible document (Livermore Lab UCRL-4725) blew the case up for the government because of the bomb details it contained—and the obvious conclusion that H-bomb secrets were not so secret. Further damage was done by Charles Hansen’s “Hydrogen Bomb Collegiate Design Contest” of 1979. The erroneous results, made public, were enough for the government to drop the case and allow publication of Moreland’s diagrams. The concept of restricted data remained legally untested. These relatively recent stories resonate more intensely than those from the AEC era when restricted data was originated in an effort to maintain a technological lead over the Soviet Union. Peace movements and Moreland’s admitted dislike of the government holding secrets are more relatable than information classification schemes and the inauguration of personal background checks.

The book is supplemented with over 100 pages of notes, an extensive bibliography and a serviceable index. Where needed, Wellerstein has provided interesting black and white archival illustrations scattered throughout the nine chapters. A clever atomic symbol with a central keyhole design adorns the start of major sections within chapters. It never lets you forget what you are reading about.

This effort is a professionally crafted, well written history of an intangible. This is not a history of the bomb, or of atomic era espionage although the Rosenberg case and its consequences are given their due as are other acts of espionage. It is not even about the secrets themselves; therefore, the reader does not need a technical understanding of the weapons (Wellerstein does a very credible job providing technical information when needed). It is about thought...what thoughts can be exchanged and what cannot and how a democracy recognized that unlike an autocracy—it had to balance scientific communication, exchange and discussion with national survival. It was a secret story—now revealed.