H-Net Reviews
in the Humanities & Social Sciences

James L. Nolan. *Atomic Doctors: Conscience and Complicity at the Dawn of the Nuclear Age.* Cambridge: Harvard University Press, 2020. 304 pp. $29.95, cloth, ISBN 978-0-674-24863-2.

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Published on H-NewMexico (January, 2021)

Commissioned by Tomas Jaehn (Special Collections/Center for Southwest Research)

Doctors' Knowledge Acquisition at the Dawn of the Nuclear Age

James L. Nolan's *Atomic Doctors: Conscience and Complicity at the Dawn of the Nuclear Age* focuses on the role of his grandfather James F. Nolan (1915–83) as a research physician in the unfolding drama of developing a nuclear bomb. Starting with the Manhattan Project, the author, trained as a sociologist, considers the ethical and medical issues Dr. Nolan, along with Drs. S. Warren and L. Hempelmann, faced. Under the constant pressure of aligning with the US government's official (trivialized) narrative and the military's need for secrecy, they sought to continue their research into radiation, radiation effects, and related subjects while maintaining their allegiance to the Hippocratic ideal of *first, do no harm*. As a recurrent theme the author describes how in the aftermath of White Sands, Hiroshima, and Nagasaki, generals and government officials downplayed or ignored the bomb's radiation effects. Instead, fear of potential legal consequences (including those against the US government), along with the common secrecy and untruthfulness surrounding nuclear warfare, influenced the narrative.

The reader follows Dr. Nolan through different episodes of his private and professional life. The author's research was complemented by his grandfather's photographs, military papers, travel itineraries, written accounts of his experience, and correspondences, which are still in the family's possession and are introduced as the contents of a "secret box" (p. 3). After Dr. Nolan contributed his medical services to building and testing the Trinity bomb in New Mexico, he escorted the uranium core of the atomic bomb *Little Boy* to the US airbase on Tinian Island in the Pacific from which the fateful Enola Gay flight originated.

After the war, Dr. Nolan was one of the first American physicians to visit Japan and investigate the bomb sites in Hiroshima and Nagasaki. He also worked on subsequent atomic tests and went to the Bikini and Enewetak Atolls in the Marshall Islands. From 1946 on, he continued his prewar specialization in radiation therapy looking for treatments of gynecologic cancers and in 1972 he was appointed director of the Southern California Cancer Center in Los Angeles, a position he held for ten years. Although he had a long and successful career as a medical researcher and doctor, his military past caught up with him several times. The author describes in the last chapter how in 1983, one year after his retirement, Dr. Nolan joined about one hundred others to attend the fortieth anniversary of the Manhattan Project in Los Alamos, an event that challenged the scientist's tortured

conscience about having participated in the development of the bomb and his medical complicity.

While Dr. Nolan's medical trials and tribulations are tightly aligned with his biography, two chapters deviate from this pattern. Under the title "Managing Radiation and the Radiation Narrative," the author puts into an ethical context the results of the Omega Site accidents in Los Alamos, the tracer experiments on humans with plutonium injections, and the findings of the Joint Commission for the Investigation of the Effects of the Atomic Bomb in Japan. He discusses the bombings on Hiroshima and Nagasaki as experiments to study the destructive forces of the explosion. The author describes how officials managed the radiation and focuses on the doctors' complicity.

In the chapter "Dr. Nolan and the Quandary of Technique," he points out participants' fraught handling of the dynamics of technology. He establishes the term "technological determinism" and opens the academic discourse with theorists such as Thomas Hughes, Joseph Masco, and others to enfold the "self-generating process" in technology. Through Hughes's writings he identifies the Manhattan Project as the prototype of a large-scale military-industrial complex that established an enormous system, which moved forward within its own dynamic as a forceful "technological momentum."[1] The forceful impact of the early nuclear technology is summarized by the anthropologist Joseph Masco: "America in the twenty-first century remains a society built around, and to a large extent, through the bomb."[2]

With the author's interdisciplinary approach to the nuclear medical issue in the development of the atomic bomb, the reader is confronted with relevant reflections concerning whether the deterministic understanding of (military nuclear) technology diminishes or even invalidates the ethically responsible handling of this technology. These technological reflections would have enriched the book even more had the author placed them in one of the first chapters. With this theory in mind, the reader would have had a larger perspective on Dr. Nolan's passage through the early atomic age and the author's multiple meanings of "delivering little boy." Instead, the reader is intermittently overwhelmed with the very detailed descriptions of historical correlations, even though the author specifies well-researched and important historical competing aspects. The author reiterates, for example, the questionable necessity of completing the Manhattan Project, President Truman's political use of the bomb against Stalin, and necessity of dropping of the bombs on Hiroshima and Nagasaki despite the acknowledged predictions that Japan was about to surrender anyway.

The author, however, is less forthcoming in developing Dr. Nolan's situation during this dawn of the nuclear age. Mentioning that the Polish physicist Joseph Rotblat decided to leave Los Alamos in 1944 makes it even more glaring that he does not discuss why Dr. Nolan did not step away earlier from military nuclear technology despite radiation's benefits in medical issues. Why did he accept the orders and continually endanger himself through emitted radiation on site—contrary to better knowledge?

In the introduction to the book, the "secret box" (mentioned in the beginning of this text) is used as a metaphor for the secrecy that determined Dr. Nolan's professional and personal life. The reader does not know how important the personal artifacts will become for the author and his research. Rather, they function "invisibly" for the historical illustration of the Manhattan Project's narrative, as we know it already from relevant literature, and help the author to stay largely away from a genealogical family history. Instead he clarifies important historical facts and opens an interdisciplinary academic discourse about the role of nuclear technology in American society. This approach makes the meticulously researched publication, perfectly placed seventy-five years after the Trinity test, a very readable book, despite its tragic subject. It gives a truthful insight into the

complexity of a physician's conscience and complicity at the dawn of the nuclear age.

Notes

[1]. Thomas P. Hughes, *American Genesis: A Century of Invention and Technological Enthusiasm, 1870–1970* (Chicago: University of Chicago Press, 1989).

[2]. Joseph Masco, *The Nuclear Borderlands: The Manhattan Project in Post–Cold War New Mexico* (Princeton, NJ: Princeton University Press, 2006), 25.