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Desperately Seeking a New Dr. Strangelove—The Pentagon's Brain: An Uncensored History of DARPA, America's Top Secret Military Research Agency

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REVIEW ESSAY

DESPERATELY SEEKING A NEW DR. STRANGELOVE

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The Pentagon's Brain: An Uncensored History of DARPA, America's Top Secret Military Research Agency, by Annie Jacobsen. New York: Little, Brown, 2015. 552 pages. $30.

As with many histories written by journalists, *The Pentagon's Brain* promises more than it delivers. The hype begins with the subtitle's promise of "an uncensored history"—as if there is any real means by which the Defense Advanced Research Projects Agency (DARPA), an overt government agency that makes no effort to hide its existence, could censor a report that is based on interviews and open sources. The fact that the Internet and the Global Positioning System originally were created with funding provided by ARPA (DARPA's original name—the "Defense" was added later to identify to whom the agency belonged)—is common and repeated knowledge, and something in which DARPA takes pride.

The author's claim (p. 5) that it is "one of the most secretive and, until this book, the least investigated" military science agencies is true only in that DARPA has received media attention only infrequently. Nothing particularly nefarious goes on in the agency itself, which (as the book admits) consists of about 120 program managers with academic backgrounds who fund classified research projects conducted by universities, think tanks, and defense industries. DARPA itself does no research, and the ideas for the research it does fund usually are prompted and sponsored by other defense agencies. DARPA is, in fact, boring—which

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is probably why there have been few nongovernment books about its history. It is just hard to find a new Dr. Strangelove at DARPA.

The research DARPA does fund is indeed interesting and certainly worthy of examination. However, the book approaches this examination as if conducting an exposé and tries to suggest that some of these projects—whose particulars are classified, but whose general subject matter is apparent—constitute threats to humanity. It does this by linking the development of hydrogen weapons—with which DARPA had no involvement—with the agency's current focus on artificial intelligence, to which the author refers as developing "killer robots." The initial link is the fact that Herbert F. York, one of the scientists involved in developing the hydrogen bomb, became the first full director of ARPA/DARPA in 1958. Like many atomic scientists, York later regretted his involvement in nuclear weapons development and was a strong proponent of arms control; in contrast, York's autobiography makes his time at ARPA seem quite fun. However, the author of this book spends much of the opening chapters discussing pre-1958 nuclear tests and the threat the resulting radiation represented. It takes some time for her to sort out which projects ARPA/DARPA actually initiated and which were under the control of other agencies of the Defense Department.

Jacobsen does identify the start of ARPA/DARPA efforts with the 1958 *ARPA Study No. 1,* which gathered together a group of defense scientists "'to identify problems not now receiving adequate attention' [York's words] in the national security domain" (p. 65). For reasons unexplained, the group gave itself the mysterious title of "Project 137." Thus, ARPA/DARPA began with a logical effort to determine whether scientific developments of the time constituted threats to American security. In the era of Sputnik, such developments were certainly apparent.

However, ARPA/DARPA did not always back the right horse. One of York's first hires was Nicholas C. Christofilos, an elevator-repair technician and erstwhile self-taught scientist who claimed that high-energy electrons trapped in the earth's magnetic field above the atmosphere could act as an antiballistic missile defense. Christofilos's reputation rested on the fact that in 1948 he sent a letter to the University of California Radiation Laboratory in Berkeley describing the idea of a nuclear particle–accelerating synchrocyclotron, something that had been invented only a few years previously. The letter apparently contained no engineering details, and was put aside. But in 1950 he sent a letter describing a different type of accelerator, similar to one that would only be built several years later. With a little self-promotion, Christofilos became viewed as a "strange kind of genius," one whose ideas should not be ignored. To generate the high-energy electrons, a small nuclear warhead was launched from the test ship USS *Norton Sound* in the South Atlantic, but the "Christofilos effect" did not occur. The author tries to

portray this as "the world's first test of an electromagnetic pulse bomb (EMP)" (p. 71), but the EMP effect was already known, though not fully understood, and there is no evidence that EMP was examined during that particular test.

Evidence, or rather the lack of it, is what makes the book weak. Despite an extensive bibliography, Jacobsen bases her work primarily on over seventy interviews she conducted with former ARPA/DARPA members—as well as others having no direct connection to DARPA. Many of the subjects were in their seventies, eighties, or nineties—and ready to tell a good story. This biases her toward human-interest tales that often characterize people as heroes or villains. In a section on social-science research the RAND Corporation conducted in Vietnam in 1963, funded by ARPA, she finds her second "militarists not listening to the qualms of scientists" story (hydrogen weapons being the first). The RAND study averred that the Strategic Hamlet Program then being pursued inevitably would fail. In Jacobsen's version, higher Pentagon officials pressured Harold Brown, the then ARPA director and future Secretary of Defense, to suppress the study and rebuke RAND's leadership. But this interpretation is that of the scientists involved, who were dismayed that while they briefed Brown on their findings "[he] turned his heavy chair around and looked out the window[,] leaving us to talk to the back of his chair." Jacobsen does note (p. 141) that "perhaps Brown was simply contemplating the severity of the situation," but the urge to turn this into a good-versus-bad confrontation is too much for her to resist. This tendency continues through an extensive discussion of other Vietnam projects, such as "Jason," the failed attempt to create an "electronic fence" of sensors to detect North Vietnamese infiltration through the jungles. She finds quite a number of Vietnam veterans to interview about such improbable schemes and inevitable failures; however, she does interview them with considerable respect for their service and bravery.

There is an additional problem with Jacobsen's reliance on interviews. Some of the statements made by those involved are not drawn from direct interviews but culled from autobiographies, oral histories, and other articles. However, it is difficult to determine which actually were conducted by the author and which were not, leaving the reader to wonder about the context of these statements. For example, the book contains many remarks by Herbert York, who died in 2009. It is likely that many of them come from his autobiography or other previous sources, but the author does not identify them in that fashion.

If one were to conclude that *The Pentagon's Brain* is less a history and more a collection of human-interest stories strung together, he or she would be right. Some of the stories are indeed interesting; others are quite absurd. In addition to that of Christofilos, some other DARPA hires seem inexplicable. DARPA contracted retired admiral John M. Poindexter (*after* the Iran-Contra scandal) to serve as director of its Information Awareness Office, supervising a data-mining

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effort called the Total Information Awareness project that critics saw as threatening civil liberties, and actually let him testify about it in front of the Senate. The testimony turned into a shouting match with Senate staffers; it was neither a wise nor a happy day for DARPA.

But a string of human-interest stories does not make a history. In fact, several of the human-interest stories seem to have no obvious connection to DARPA, particularly a lengthy section about a catastrophic brain injury suffered by Allen M. Dulles (son of CIA director Allen W. Dulles) in the Korean War that resulted in permanent short-term memory loss. Although the author spends considerable time interviewing Dulles and his family, the only possible linkage provided—much later in the book (p. 421)—is DARPA's funding of research "around trying to restore mind and memories of brain-wounded warriors." No such research ever was conducted on Dulles himself.

The book concludes with a portrayal of current DARPA funding for drones, robots, artificial intelligence, and autonomous vehicles that is intended to cause alarm. As Jacobsen juxtaposes, "This book begins with scientists testing a weapon that at least some of them thought was an 'evil thing' [hydrogen bomb]. . . . This book ends with scientists inside the Pentagon working to create autonomous weapons systems, and scientists outside the Pentagon working to spread the idea that these weapons systems are inherently evil things, that artificially intelligent hunter-killer robots can and will outsmart their human creators, and against which there will be no defense" (p. 452). This is indeed a serious debate to examine, but Jacobsen interviews only three opposed scientists and relies on a single report. She does not develop the debate fully, and it certainly transcends a discussion of DARPA.

Perhaps the disconnections in the book simply point to the fact that its initial premise is wrong. A brain decides how to direct action, then other organs carry out the tasks. The Office of the Secretary of Defense—carrying out the will of the president and the funding of Congress—decides and directs the action; DARPA fills out the paperwork and moves the money. DARPA is not the Pentagon's brain; that resides elsewhere. As for this book, an actual history of DARPA also lies elsewhere.