In the spring of 2015, a group of human rights activists released a report alleging that the American Psychological Association (APA) had aided the Central Intelligence Agency (CIA) in developing torture policies that would withstand legal scrutiny.[1] The most explosive disclosure revealed that government psychologists and defense contractors had been involved in establishing the APA’s guidelines for ethical participation in interrogation programs. Although the ensuing outrage was decidedly of its moment—deeply mired in post-hoc assessments of President George W. Bush’s global war on terror—this was not the first time that American scientific institutions confronted their role in military operations.

Sarah Bridger’s *Scientists at War* provides an inside look at the moral and ethical quandaries that shook the US scientific community in the second half of the twentieth century. From the Manhattan Project veterans who later urged disarmament, to Vietnam-era botanists who parsed the definition of chemical weapons, to 1980s conservative physicists who drew the line at President Ronald Reagan’s fantastical Strategic Defense Initiative (popularly known as Star Wars), American scientists continually asked themselves what constituted appropriate participation in weapons development. In Bridger’s account, the Vietnam War proves the pivotal moment at which scientists realized the limits of their ability to control the uses to which their research was put. Younger, more radical activists demanding systemic change clashed with older defense hands hoping to influence the system from within. Fifteen years later, the potentially destabilizing effects of a far-fetched missile defense system convinced the factions to set aside their generational differences in a mass research boycott of Star Wars. This did not stop the Department of Defense from investing billions of dollars in the (ongoing) project, but it did heal longstanding ethical and political divisions within American physics.

Ethical issues concerning weapons research loomed so large in postwar US science because of the outsized role of military agencies in funding university research and development during that time. American scientists and engineers made unprecedented contributions to the military arsenal during World War II, developing two kinds of atomic bombs, radar, and the proximity fuse. Military brass interpreted this phenomenon to mean that they needed a direct line to academic scientists in case of another conflict. Manhattan Project veterans like Lee DuBridge and Leo Szilard, meanwhile, claimed that their special knowledge of the atomic bomb granted them a new role in establishing weapons policy. The question, at least in the early postwar years, was whether scientists should be “on tap” or “on top.”

Historians of science have been arguing over how much influence scientists actually had over Cold War weapons policy since at least the 1960s (and vice versa), but the military’s overwhelming financial support for scientific research during this time is undisputed. In 1967, for instance, Bridger explains that agencies associated with the US Department of Defense sponsored “more than a third” of all research conducted on the main campus of the Massachusetts Institute of Technology (MIT), and “98 percent” of the work conducted at MIT’s Lincoln Laboratory, in Lexington, Massachusetts (pp. 157, 158). The absolute level of defense dollars funneled into MIT was exceptional, but the proportion was not. From the end of World War II through 1970, when the political winds had sufficiently changed, military contracts were
scientists who objected to the defoliants actually objected to the war. At this point, however, in keeping with their role as trusted technical advisors, older scientists "chose to attack as immoral the technology of the war rather than attack the war directly" (p. 107).

Younger scientists were more outspoken in their opposition to the war itself. They faced different ethical dilemmas, particularly the age-old question of whether an objector might serve as a moderating influence from inside. But what constituted "inside"? Could a researcher who objected to the war in Vietnam work on civilian projects in a laboratory that also held defense contracts? For that matter, could he draw a salary from a university, like MIT, that was so deeply invested in the military-industrial complex? As the technologies actually deployed in warfare became more mundane—less nuclear physics, more raw tonnage—scientists also had to face the question of their own irrelevance. As President Lyndon B. Johnson put it in a memo to National Security Advisor Walt Rostow, "I basically do not regard bombing as a matter of science" (p. 227).

Campus protests movements in the late 1960s and early 1970s succeeded in creating spaces that were free of, or at least less dependent on, defense contracts. This is not the same thing, however, as saying that they eliminated scientists’ and engineers’ roles in developing weapons. A number of recent works, including most importantly Joy Rohde’s Armed with Expertise: The Militarization of American Social Research during the Cold War (2013), have traced the continuities between the work conducted on campus institutions and in the “new” independent laboratories that took their place. Bridger touches on the same themes, but also points out that less prestigious universities than MIT, Harvard, or Stanford had fewer scruples about taking this kind of work. Using the example of Northeastern University, Bridger shows how “existing second-tier research universities” became “powerhouses of defense research” in the 1970s and 1980s (p. 242). Meanwhile, a combination of age discrimination driven by cost-cutting and candidate self-selection created a younger, more conservative, and more compliant employee pool in defense laboratories. By the mid-1970s, few defense researchers engaged in much soul-searching, having made their ethical choices before they picked up their employee identification badges. A decade later, only 15 percent of the six thousand researchers who signed the pledge to boycott Star Wars cited a moral opposition to weapons research. The two out of five signatories who primarily objected to Star Wars as an ill-conceived technical project presumably had no problem...
with more plausible high-tech weaponry (p. 262).

Bridger adopts a narrative technique that highlights the voices of scientists in their own words. The approach produces some wonderfully evocative moments, such as when she quotes Kistiakowsky reassuring a colleague that his resignation from defense advising “doesn’t mean that I have grown long hair and have become a ‘peacenik’” (p. 143). At the same time, the approach has the effect of limiting Bridger’s analysis primarily to the issues that troubled the scientists themselves. Weapons scientists were hardly the only Americans, or even the only category of scientist, trying to make sense of their moral and ethical relationships to the state in the Cold War period. Readers catch occasional glimpses of these larger discussions, for instance when Bridger makes note of the echo of “genocide” in the term “ecocide” or when she references the New Left’s criticisms of “the system.” For the most part, however, this larger national context remains implicit, leaving to future scholars the task of integrating scientists’ ethical choices into a larger history of Cold War ethics in the United States. A similar silence surrounds changing international attitudes about scientific responsibility—a not insubstantial issue in an era that saw, among other things, a reassessment of scientists’ role in Nazi war crimes.

But Bridger does not claim to have written either a history of Cold War ethics or a history of scientific responsibility. Scientists at War is a book that delivers exactly what it promises: a deep exploration of American scientists’ understanding of their role in Cold War weapons research. Bridger’s faithfulness to her actors’ terms has produced a thoughtful, sympathetic, and at times, even moving, account of an ethically complicated time. It is essential reading for anyone struggling to understand how experts get caught up in ethical quagmires, and what happens when they finally manage to extract themselves.

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