

Editorial Note on Military Science Innovations

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EDITORIAL

Government military establishments have had a significant impact on technical advancement in most industrial economies for millennia. Nonetheless, while military activity (waging wars, acquiring weapons, and training personnel) has had a long-term impact on technological change, the channels through which military activity influences innovation have changed significantly, much like the structure and scale of national military establishments and the industrial societies in which they operate. The vast literature on the military's role in technological progress is mostly devoted to the second half of the twentieth century, a period marked by significant "peacetime" military R&D and procurement expenditures by governments of both industrial and centrally planned economies. This chapter concentrates the majority of its attention to the post-1945 period, with a particular focus on US military R&D initiatives within that time frame. There is very little comparative research on the influence (or lack thereof) of various factors.

During World War II and the Cold War that followed, scientists' involvement in the weapons development process changed dramatically. Even during peacetime, military research and development (R&D) became a large-scale institutionalised enterprise for the first time in history. The following 'qualitative' arms race in nuclear, conventional, biological, and chemical weapons highlighted the question of whether 'destabilising' weapons advances actually reduced, rather than increased, national and international security. As a result of these worries, a new sort of study was born: military technology assessment studies, which looked at the impact of new weapons systems and dual-use technologies on national and international security. Negative consequences, such as undermining current arms control agreements, prompted questions about whether and how the weapons development process could be impacted. The essay examines a number of analytical methodologies for better understanding the dynamics of the weapons development process.

Corporate desires for patents, profits, and market share drive scientific research—and the speed with which it is pursued. Studies of the Green Revolution in agricultural research link science to imperialist efforts to replace indigenous practises in developing nations with 'advanced technologies' that is more in line with global food market demands. Feminist scholars are just as interested in the kinds of knowledge that science creates—and, perhaps even more so, the potential knowledge that aren't sought or valued. Other types of inquiry and learning done by women (Parisian salons, home economics, midwifery, and cooking) were branded as unscientific and so dubious in the nineteenth century, when social and natural science offered logic and evidence to legitimate patriarchal hierarchies. Other feminists question the scientific method's hegemony, arguing that it is incapable of seeing its own inherent situatedness and partiality; others argue that women's position in a gender-segregated society provides unique epistemic resources that enable fuller and richer understandings of nature and culture.

These critical works all share an interest in exposing another side of science: its historical complicity with programmes that are regarded to be antithetical to equality, human rights, participatory democracy, community, and sustainable ecologies. They want to create a restructured 'science' (or any successor knowledge-maker) that is more inclusive in terms of practitioners, diversified in terms of methodologies, and less power-dependent. During World War II, scientists' involvement in military problems changed dramatically. In a highly structured and coordinated effort, science and scientists in large numbers were mobilised for weapon innovation. In the United States, these scientists contributed to the creation of a variety of new technologies, including the atomic bomb, radar, the proximity fuse, and penicillin, primarily under the aegis of the newly established Office of Scientific Research and Development. Scientists' pivotal role in these war efforts signalled a significant shift in the role of science and technology in future military affairs. Drawing on his wartime experience, US science policy pioneer counselled the President immediately after the war.

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