



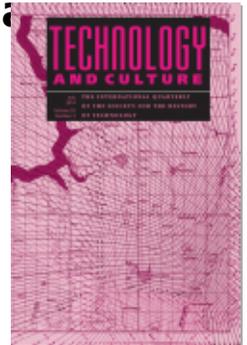
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Nuclear Syntheses: Audra J. Wolfe, Competing with the Soviets; Martin V. Melosi, Atomic Age America

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Technology and Culture, Volume 55, Number 3, July 2014, pp. 723-725
(Article)

Published by The Johns Hopkins University Press
DOI: [10.1353/tech.2014.0065](https://doi.org/10.1353/tech.2014.0065)



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Nuclear Syntheses

Audra J. Wolfe, *Competing with the Soviets*

Martin V. Melosi, *Atomic Age America*

RUSSELL OLWELL

Works of synthesis in any historical field can indicate several different things for a topic. First, the development of synthetic works can be a sign that a field is maturing, and that the time has arrived to take stock of its historical scholarship and advances. Second, it can be a signal that a field has amassed enough articles and monographs to need a fresh look at what broad organizing principles unite the field. Finally, it can be a sign that a historical field is becoming widely taught and gaining student enrollment sufficient to generate book sales through assignment in undergraduate or graduate classes.

While works of synthesis are widely appreciated by scholars and teachers in a field, they are not always considered among the most cutting-edge of projects. Unlike deep dives into the archives in search of evidence for a new monograph, wading through articles and books can seem an unglamorous task. Worse still, the genre can have a reputation for lack of creativity, with accurate summary being the goal and with few surprises for those who know the field well.

Two recent works of synthesis address the topic of postwar American science and technology, taking on the issue within the context of the cold war and arms race. Audra Wolfe's *Competing with the Soviets: Science, Technology, and the State in Cold War America* (Baltimore: Johns Hopkins University Press, 2012. Pp. 176. \$40.50) is one of the few works of synthesis that actively creates creative and novel interpretations, and it applies these to a well-developed historical literature. Wolfe begins her work with Edward Teller's quote on Project Plowshare: "If anyone wants a hole in the ground, nuclear explosives can make big holes." Rather than using this as the setup for a dark joke, she unpacks the tension that the quotation

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0040-165X/14/5503-0008/723-25

JULY
2014
VOL. 55

reveals—that Americans had great optimism in science and technology during the postwar era, but that doubts about it were always close at hand.

Wolfe begins with a chapter on the Manhattan Project, then moves on to the concept of the military-industrial complex. She points out that military spending dominated scientific and technological research in postwar America, creating hybrid institutions that stood between the military and universities. She points to project SAGE as a prime example of a technological project with massive reach: its main contractor, the Systems Development Corporation, at one time employed half the computer programmers in the United States.

Even chapters on relatively conventional topics, such as big science, are used by Wolfe to advance creative arguments. Her chapter on the so-called golden age of federal science funding ends with the caveat that while defense research declined as a proportion of total research spending, every area of science and technology was touched by the cold war, writing that “[e]very scientific discipline and technological undertaking became a site of competition with the Soviet Union, an arena for the United States to avenge the humiliation of Sputnik.”

Wolfe’s account extends far beyond what is conventionally thought of as science and technology. Her book addresses both the physical sciences and social science, examining topics like research into economic development, U.S. international aid programs, research into racism and poverty, and the turmoil around sponsored research in the 1960s. She closes with the space race and the Strategic Defense Initiative of the 1980s, thus bringing the account up to the end of the cold war. While any book that attempts to address such a wide range of topics will have uneven results, each chapter crackles with arguments and perspectives that keep the reader engaged, and will surprise even those who have been in the field for decades.

Wolfe’s chapters are full of examples of conventional historical thinking that she is able to investigate and debunk. For example, in the wake of Sputnik, the idea that Americans were “behind” in producing scientists and engineers became a national consensus, leading to numerous programs of fellowships and curriculum development in these areas. Wolfe points out that U.S. university production of physics doctorates was actually robust in the postwar period, and that many scientists were graduating with a degree but no permanent position. She writes that “[i]n much the same way that the drumbeat of national security had produced enough nuclear weapons to destroy the world many times over, the constant rhetoric of scientific crisis had generated more physicists than the nation could possibly use” (p. 48).

Competition with the Soviets also has a useful global dimension, and Wolfe sheds light on how Americans attempted to use “development” as a tool against communist gains in the developing world. Her account of key development projects, such as a Tennessee Valley Authority-style initia-

tive in Tanzania, efforts to eradicate malaria in Mexico, and the development of the Indian Institute of Technology (IIT) system in India, serve as cautionary tales for modern policymakers. The hydroelectric programs in Tanzania ended in failure, attempts to eradicate malaria in Mexico did not take hold, and the IIT system produced an unpredicted technological challenge to the United States as India became a competitive force in the world of global information technology.

Martin Melosi's *Atomic Age America* (Upper Saddle River, NJ: Pearson Education, 2012. Pp. 384. \$62) has a longer and wider focus than Wolfe's work, and delivers much more than the title would indicate. Written for advanced undergraduate or introductory graduate classes, the book begins with the history of atomic theory in the ancient world, and spends considerable time on the history of the atom before 1939. The topics then become somewhat more conventional, examining the Manhattan Project, cold war, the development of civilian nuclear power, and the role of atomic weapons in U.S. foreign policy.

In a welcome innovation for such a work, Melosi extends up to the present, with topics such as Fukushima and the Obama administration's nuclear policy closing out the book. Melosi, as a diplomatic historian, fills *Atomic Age America* with foreign policy material, making this a solid reference for many areas of postwar diplomacy. The work is rounded out by online primary documents available through Pearson's website.

Melosi's narrative shines in sections where foreign affairs and nuclear issues intersect. His section on the foreign policy challenges of the Kennedy years and the impact that the Cuban missile crisis had on the cold war masterfully integrates the ways that diplomacy and the threat of nuclear war wound through the 1960s and '70s. While the Strategic Arms Limitation Talks (SALT) of the 1970s gave hope that nuclear war would be prevented, Melosi points out that this was a fragile hope, which could be reversed depending on the direction of the superpowers' rivalry.

While Wolfe's strength lies in interpretation and novel argument, Melosi synthesizes a far broader and deeper set of literature. Both works would fit well into a variety of undergraduate and graduate classes, and both are written in clear and engaging fashion. The appearance of these two synthetic works in nuclear history is a positive indicator of the health of the field. As Melosi's final chapter shows, there is a story waiting to be told in post-cold war nuclear history and another new set of stories about the ways in which humans have used and misused their most powerful scientific and technological development.

ESSAY

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