

New Perspectives on the History of the Military–Industrial Complex

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A half-century ago, outgoing president Dwight D. Eisenhower reminded the American people that they were engaged in a war with no end in sight—a conflict against an enemy driven by “a hostile ideology—global in scope, atheistic in character, ruthless in purpose, and insidious in method.” Despite the great dangers presented by this formidable enemy, however, Eisenhower did not advocate any drastic response. On the contrary, most of his remarkable farewell address of January 1961 warned Americans against the possibility that demands for better security would crowd out other important social goals, upsetting the proper “balance” among them. There was a real danger, Eisenhower argued, that concerns about security would lead to the “unwarranted influence of a growing ‘military-industrial complex’ and a new “scientific-technological elite.” These products of the cold war should never be allowed, the president argued, to “endanger our liberties or democratic processes.”¹

In the decade and a half that followed Eisenhower’s address, during and immediately after the Vietnam War, the phrase “military

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1. Farewell Address by President Dwight D. Eisenhower, January 17, 1961.

–industrial complex” (MIC) enjoyed considerable currency.² It was used especially by critics of the economic and political establishment following in the footsteps of the radical sociologist C. Wright Mills, whose 1956 book *The Power Elite* had described a recent quantum leap in the concentration and integration of American economic, political, and military power. At the beginning of the 1970s, many critics built on the warnings of Mills and Eisenhower, describing the growth of a giant cold war government–industry establishment that was insulated from both democratic politics and competitive capitalism. Usually described as dysfunctional and corrupt, the MIC of the Vietnam era was understood as a relatively new danger, perhaps an inevitable consequence of the country’s new global power, which made a mockery of traditional American ideals.³

One important component of this MIC literature that proliferated in the years after Eisenhower’s address was a critique of American business. Large industrial corporations, in particular, were understood to be the willing partners of the Pentagon.⁴ Together, critics of the MIC explained, the military establishment and the corporations created a giant sector in the American economy devoted to the production of deadly weapons, in which public dollars were funneled to favored contractors without much competition. The MIC socialized risk, privatized profit, and gave corporations undue influence over U.S. domestic and foreign policy.

After the Vietnam era, interest in the MIC faded. One reason for this was the end of the war itself, which turned out to be the beginning of a period of relative peace that would last nearly two decades. Another factor was the transformation of the American political economy. Starting in the 1970s, federal government spending on

2. The number of books published on the subject peaked in the early 1970s. See, for example, Herbert I. Schiller and Joseph D. Phillips, ed., *Super-State: Readings in the Military-Industrial Complex* (Urbana: University of Illinois Press, 1970); Seymour Melman, *Pentagon Capitalism: The Political Economy of War* (New York: McGraw Hill, 1970); Sidney Lens, *The Military-Industrial Complex* (London: Kahn & Averill, 1971); Berkeley Rice, *The C-5A Scandal: An Inside Story of the Military-Industrial Complex* (Boston: Houghton Mifflin, 1971); Carroll W. Pursell, Jr., ed. *The Military-Industrial Complex* (New York: Harper & Row, 1972); Sam C. Sarkesian, *The Military-Industrial Complex: A Reassessment* (Beverly Hills: Sage, 1972); Steven Rosen, ed., *Testing the Theory of the Military-Industrial Complex* (Lexington, MA: Lexington Books, 1973). For a concise, much more recent overview of the subject, see Alex Roland, *The Military-Industrial Complex* (Washington: American Historical Association, 2001).

3. C. Wright Mills, *The Power Elite* (New York: Oxford University Press, 1956); Melman, *Pentagon Capitalism*; Mary Kaldor, *The Baroque Arsenal* (New York: Hill & Wang, 1981).

4. David Horowitz, ed., *Corporations and the Cold War* (New York: Monthly Review Press, 1969).

social welfare began to surpass military outlays. (By the end of the century, military spending accounted for about 4 percent of gross domestic product; during Eisenhower's presidency, it had been close to 10 percent.) This political–economic transformation, along with the end of the draft, made the military establishment seem somewhat less important. At the same time, the American left (and much of the academic establishment) had become increasingly interested in popular social movements, multiculturalism, feminism, and the politics of the everyday. Together, these several developments attracted attention away from the MIC and toward other important subjects.

On the whole, historians have, like scholars in other fields, shown little interest in the MIC since the early 1970s. But for business and economic historians in particular (along with certain segments of the military history community), the subject has held greater interest. For instance, Paul Koistinen and Robert Cuff, the authors of pioneering studies of the U.S. economic mobilizations for World War I and World War II, have both enjoyed some attention in the business history field. Their work, along with that of Benjamin Franklin Cooling, Merritt Roe Smith, and others, showed that the MIC had a long history, or at least prehistory, which reached back into the nineteenth century.⁵ Over the last generation, a variety of newer studies has continued to enrich our understanding of the long-run development of U.S. military–industrial relations.⁶ Some of these have been related to new work in the field of American political development, which has slowly developed more of

5. B. Franklin Cooling, ed., *War, Business, and American Society: Historical Perspectives on the Military-Industrial Complex* (Port Washington, NY: Kennikat Press, 1977); Merritt Roe Smith, *Harpers Ferry Armory and the New Technology: The Challenge of Change* (Ithaca, NY: Cornell University Press, 1977); B. Franklin Cooling, *Gray Steel and Blue Water Navy: The Formative Years of America's Military-Industrial Complex, 1881-1917* (Hamden, CT: Archon Books, 1979); Paul A. C. Koistinen, *The Military-Industrial Complex: A Historical Perspective* (New York: Praeger, 1980), Koistinen has continued to write broad historical surveys of the subject. For the most recent volume in his multivolume study, see Koistinen, *Arsenal of World War II: The Political Economy of American Warfare, 1940-1945* (Lawrence: University Press of Kansas, 2004).

6. Gary Weir, *Building American Submarines, 1914-1940* (Washington, DC: Naval Historical Center, 1991); Weir, *Forged in War: The Naval-Industrial Complex and American Submarine Construction, 1940-1961* (Washington, DC: Naval Historical Center, 1993); Jacob A. Vander Meulen, *The Politics of Aircraft: Building an American Military Industry* (Lawrence: University Press of Kansas, 1991); Joel R. Davidson, *The Unsinkable Fleet: The Politics of U.S. Navy Expansion in World War II* (Annapolis, MD: Naval Institute Press, 1996); Kurt Hackemer, *The U.S. Navy and the Origins of the Military-Industrial Complex, 1847-1883* (Annapolis, MD: Naval Institute Press, 2001); William H. Roberts, *Civil War Ironclads: The U.S. Navy and Industrial Mobilization* (Baltimore: Johns Hopkins University Press, 2002).

an interest in the military side of the American state.⁷ There has also been growing interest in documenting related developments outside the United States, and in comparative perspectives.⁸

For business and economic historians, investigations of the MIC and its antecedents have proven to be especially valuable for what they have suggested about the effects of war and the military upon regional economic development and technological innovation. For much of American history, military expenditures have served to boost the fortunes of certain locales and regions, sometimes in ways that have had significant demographic and political effects, in addition to their economic impact.⁹ War and the military have also affected the

7. Gregory Hooks, *Forging the Military-Industrial Complex: World War II's Battle of the Potomac* (Urbana: University of Illinois Press, 1991); Bartholomew H. Sparrow, *From the Outside In: World War II and the American State* (Princeton: Princeton University Press, 1996); Ira Katznelson, "Flexible Capacity: The Military and Early American Statebuilding," in *Shaped by Trade and War: International Influences on American Political Development*, ed. Ira Katznelson and Martin Shefter (Princeton, NJ: Princeton University Press, 2002), 82–110; Robert G. Angevine, *The Railroad and the State: War, Politics, and Technology in Nineteenth-Century America* (Stanford: Stanford University Press, 2004); Mark R. Wilson, *The Business of Civil War: Military Mobilization and the State, 1861-1865* (Baltimore: Johns Hopkins University Press, 2006).

8. For example, Gary Weir, *Building the Kaiser's Navy: The Imperial Naval Office and German Industry in the Tirpitz Era, 1890-1919* (Washington, DC: Naval Institute Press, 1992); Michael J. Green, *Arming Japan: Defense Production, Alliance Politics, and the Postwar Search for Autonomy* (New York: Columbia University Press, 1995); Ken Conca, *Manufacturing Insecurity: The Rise and Fall of Brazil's Military-Industrial Complex* (Boulder, CO: L. Rienner, 1997); David Edgerton, *Warfare State: Britain, 1920-1970* (New York: Cambridge University Press, 2006); Adam Tooze, *The Wages of Destruction: The Making and Breaking of the Nazi Economy* (New York: Viking, 2006); Jeffrey A. Engel, *The Cold War at 30,000 Feet: The Anglo-American Fight for Aviation Supremacy* (Cambridge, MA: Harvard University Press, 2007); Jeffrey A. Engel, ed., *Local Consequences of the Global Cold War* (Palo Alto, CA: Stanford University Press, 2007); Emanuel Felice, "State Ownership and International Competitiveness: The Italian Finmeccanica from Alfa Romeo to Aerospace and Defense (1947–2007)," *Enterprise & Society* 11 (2010): 594-635.

9. Much of this literature has focused on regional economic development in the age of the MIC. See, for example, Ann R. Markusen, *The Rise of the Gunbelt: The Military Remapping of Industrial America* (New York: Oxford University Press, 1991); Bruce J. Schulman, *From Cotton Belt to Sunbelt: Federal Policy, Economic Development, and the Transformation of the South, 1938-1980* (New York: Oxford University Press, 1991); Roger W. Lotchin, *Fortress California, 1910-1961: From Warfare to Welfare* (New York: Oxford University Press, 1992); Philip Scranton, ed., *The Second Wave: Southern Industrialization, 1940-1970* (Atlanta, GA: Georgia Technological Institute Press, 2002). There is also a rich literature on the military's role in nineteenth-century economic development in the West: for example, Francis Paul Prucha, *Broadax and Bayonet: The Role of the United States Army in the Development of the Northwest, 1815-1860* (Madison: State Historical Society of Wisconsin, 1953); Darlis A. Miller, *Soldiers and Settlers: Military Supply in the Southwest, 1861-1885* (Albuquerque: University of New Mexico Press, 1989); Thomas T. Smith, *The U.S. Army and the Texas Frontier Economy, 1845-1900* (College Station: Texas A&M University Press, 1999).

development of new technologies. Of all the scholars working on questions related to the MIC, historians of technology have been especially successful in creating a rich sophisticated body of work. At its best, this work has managed to document the ways in which the military has indeed altered the course of technological development, without overlooking the equally important contributions of individuals and companies in the private sector.¹⁰

Today, a half-century after Eisenhower's address, we are in a position to benefit from some critical distance from the cold war MIC and its theorists.¹¹ We are also informed by observations and questions about recent American military operations in Iraq and Afghanistan. For example, we have become increasingly sensitive to the relatively recent growth of the privatization of military manpower, which points to the importance of a longer run trend in the direction of the privatization of the production of all sorts of military goods and services.¹² Other recent trends that may eventually interest business historians include the increased concentration of the defense sector since the end of the cold war and the ongoing problematic globalization of defense markets.

In this special issue of *Enterprise and Society*, we revisit the subject of the MIC by featuring the work of a new generation of scholars. This more recent scholarship is distinguished by its focus on case studies, its broader perception of the complex patterns of

10. Smith, *Harpers Ferry Armory*; David F. Noble, *Forces of Production: A Social History of Industrial Automation* (New York: Knopf, 1984); Merritt Roe Smith, ed., *Military Enterprise and Technological Change: Perspectives on the American Experience* (Cambridge, MA: MIT Press, 1985); Stuart W. Leslie, *The Cold War and American Science: The Military-Industrial-Academic Complex at MIT and Stanford* (New York: Columbia University Press, 1993); Janet Abbate, *Inventing the Internet* (Cambridge, MA: MIT Press, 1999); Alex Roland and Philip Shiman, *Strategic Computing: DARPA and the Quest for Machine Intelligence, 1983-1993* (Cambridge, MA: MIT Press, 2002); Thomas Heinrich, "Cold War Armory: Military Contracting in Silicon Valley," *Enterprise & Society* 3 (2002): 247–84; Christophe Lécuyer, *Making Silicon Valley: Innovation and the Growth of High Tech, 1930-1970* (Cambridge, MA: MIT Press, 2007); Robert W. Duffner, *The Adaptive Optics Revolution: A History* (Albuquerque: University of New Mexico Press, 2009).

11. Some might argue that such critical distance is necessary. For an example of a recent work that differs in tone and approach remarkably little from older treatments of the MIC, see the film *Why We Fight* (E. Jareki, dir., 2005).

12. Two pioneering studies of the privatization of combat operations are P.W. Singer, *Corporate Warriors: The Rise of the Privatized Military Industry* (Ithaca, NY: Cornell University Press, 2003); and Deborah D. Avant, *The Market for Force: Privatizing Military Security* (New York: Cambridge University Press, 2005). On privatization of weapons production in the U.S. defense sector during the cold war, see Aaron Friedberg, *In the Shadow of the Garrison State: America's Antistatist and Its Cold War Grand Strategy* (Princeton, NJ: Princeton University Press, 2000).

cause-and-effect portrayed in the evidence, and its determination to generate a more systematic (and, at times thereby, more complicated) set of conclusions regarding the history and implications of the MIC. The four studies contributed here mobilize the insights and techniques of “microhistory” in an effort to refine and strengthen the abstractions and conceptions framed by more general theories of social and historical change. They also serve to make a powerful case for the importance and usefulness of business history in any effort to improve our broader grasp of modern economic and political history.

Each of our authors argues for refining the more traditional conceptions the earlier literature on the MIC’s history advanced. In his study of the Permanente Metals Corporation (PMC) during World War II, Mark Wilson directly challenges the monolithic notion that the MIC improved corporate profits for those companies engaged on military contracts. Far from demonstrating the manner in which a large and powerful firm could manipulate state policy to its own advantage, the travails experienced by PMC in its efforts to develop a new magnesium-based aerial weapon (and to cultivate a state “market” for other military hardware utilizing the alkaline earth metal) show how corporations linked with the MIC were exposed to great financial risk. Ironically enough, as Wilson shows, it was the very volatility of profits in war-related work that forced PMC to cultivate a set of new state relationships (and agile responses to changing circumstances) that would ultimately secure its fortunes in the postwar era. In sum, far from guaranteeing profits, the MIC in this case forced an adroit response to challenges, a history that portrays the impact of government contracts on “corporate cultures” in an altogether different light than would the traditional literature.

Just as Mark Wilson’s new research serves to subvert received notions of the MIC’s impact on corporate profitability, Eugene Gholz’s investigation of the history of the American aircraft industry during the Cold War affords an array of revisionist insights. In his examination of the experiences of the Boeing Aircraft Company, Convair, and Douglas Aircraft during the 1950s and 1960s, Gholz shows that the simple notion of MIC spending generating commercially viable “spinoff” products is not supported by the evidence. Viewed from a variety of perspectives—involving financial and technological economies and practices—it is nonetheless impossible to claim that public spending subsidized product innovation and technological change in the American aircraft industry. Indeed, at certain times and in particular ways, such contracts actually served to impede firms’ commercial aircraft sales. Gholz’s research thus provides us with a distinctive appreciation of both the complex history of governmental contracting in the early MIC era, and of the skilled ingenuity of firms

in pursuing both military and commercial opportunities to maximum effect.

Edmund Wehrle brings another often-ignored perspective to an analysis of the history of the MIC—that of organized labor. In the work of the few labor historians who have closely assessed the relationship between the MIC and American labor unions, it has traditionally been assumed that labor uncritically embraced military spending, trading the pursuit of jobs creation for political independence and influence. Wehrle mobilizes his findings to demonstrate that labor leaders saw in the MIC an opportunity to focus public spending on labor-surplus sectors in the economy. Far from initially endorsing the idea of heightened public spending in general, top union officials saw the wisdom of focusing such “pump-priming” on particular pockets of unemployment. Theirs was, in this respect, a very early version of a kind of “industrial policy” agenda—seeking to formulate specific public action to remedy the hardship of certain hard-hit areas in the economy as a whole. That labor was ultimately unsuccessful in this political endeavor is, according to Wehrle, less a representation of co-opted weakness in the mixed economy of the Cold War era than a symbol of the limits of labor’s ability to frame MIC spending in line with its self-generated and articulated goals and needs. Viewed in this way, the history of labor and the MIC is more a story of empowerment and engagement than one of political marginalization and retreat.

The further evolution of the MIC, in the wake of the formal end of the Cold War, is the subject of Jocelyn Wills’ article on Canadian and American information technology firms and military–industrial contracting in recent decades. In the digital age, the development of defense technology has increasingly become focused on information retrieval and analysis, as well as the use of remotely controlled and robotic vehicles. Wills notes that this transformation in the nature of war making is uniquely linked with the evolution of other surveillance technologies and practices. In the rise of a “surveillance state,” she identifies a potential successor phenomenon to that of the more traditionally configured (and understood) MIC. From the standpoint of business history, this is a particularly striking speculation. The older literature on the MIC has focused on manufacturing sectors and the state. The future of the MIC may involve nothing of the sort—and it may also force us to acknowledge (and analyze) the growing interaction of militarism and electronic intelligence gathering in the digital age.

A fascinating array of questions and additional themes emerges in the reading of these new essays. Mark Wilson’s history of the experience of the PMC, as rich as it is, nonetheless provokes us to

speculate about the MIC in an age of global corporate influence and power. This is to say that the MIC is today a global phenomenon. Simple notions of corporate–state interactions with respect to military procurement, while they obviously made sense decades ago, are now outmoded with respect to the vast operations of the largest military contractors. How does this new reality change the questions we might ask of the costs, impacts, and influence of the MIC? To the extent, the largest corporate “players” in the MIC are no longer nationally based, in what sense can we still meaningfully speak of a state-business nexus in the MIC?

Both Eugene Gholz and Edmund Wehrle, in their respective essays, also remind us of the complex issues posed for our understanding of the MIC, as soon as an international perspective is embraced. While Gholz has shown us that the history of the American aircraft industry does not show evidence of a “spinoff” effect of the MIC, the role of the state in sustaining foreign markets for the products of the industry looms large. Is it possible, therefore, to imagine the success of such companies like Boeing independent of the aggressive steps taken by the U.S. government to secure foreign contracts (both civilian and military) for Boeing products? Similarly, in Wehrle’s study of organized labor, the connections between the MIC and economic diplomacy—in identifying, penetrating, and maintaining foreign markets for American firms—are ripe for further study. It is no doubt a supremely unintended consequence of its engagement with the MIC that organized labor in America has become party to the weakening of the domestic labor market. After all, the MIC has played a key role in projecting American influence and power in the world—a “regime” of international relationships that has made it easier (and more economic) for American firms to outsource more and more manufacturing jobs to less costly economic environments overseas.

Finally, in the work of Jocelyn Wills, we are reminded that the future of the MIC is by no means obvious. In addition to the increasingly powerful links being forged between the MIC and national security and surveillance apparatuses to which Wills draws our attention, it is also manifestly obvious (in almost daily news reports from around the world) that military procurement and spending are also powerfully bound up with “nonstate” actors, including terrorist movements and criminal syndicates. Indeed, at certain points in time and in certain parts of the world, the illicit traffic in weapons and military technology may be more significant a force in the continued evolution of the MIC than legitimate mechanisms. On one level, the technological changes of the past few decades have made complex large-scale weapons technologies increasingly simple to operate, to deploy, and (perhaps most

disturbingly) to conceal. Here again is yet another potentially overwhelming force that could destabilize most of our generalizations about the practices and tendencies of the MIC.

The transformative impact of technology on the MIC is, therefore, one of the most intriguing and challenging questions with which we are left by these essays. On the one side, the rapidly changing digital environment has changed the context within which new military technologies are developed and utilized. Precisely because of the impact of digital and internet-based information, nonstate actors are in a position to play an altogether unanticipated role in the future elaboration of the MIC. On the other, the decentralized distribution of technical knowledge has also enabled and invigorated worldwide efforts to uncover the nether world of illegal arms trafficking, the narcotics trade, and nonstate terrorist movements. The very technology that allows for possible terrorist procurement of the most advanced weapons systems also promotes investigative journalism, international cooperation, and the sharing of intelligence information to forestall those outcomes. This is all to say that the rise of the “surveillance state,” which Jocelyn Wills so provocatively speculates may be the ultimate future of the MIC itself, is also potentially part of a process of the empowerment of social movements and civilian initiatives focused on curtailing the worst consequences of militarism, terrorist movements, and the illegal trade in weapons.

With the formal end of the Cold War, and as the hegemony of the American economy in global markets has consistently waned, speculations and assessments regarding the future of the MIC have been strangely muted. The contributions to this special issue demonstrate that the history of the MIC rewards continued study. They afford new perspectives on the past precisely by virtue of their focus on individual enterprises and on business practices and experience. In complicating received wisdom, long extant in the literature, these essays show that the lessons of the history of the MIC, and the speculations regarding the future that this history provokes remain as important and as significant today as they were a half-century ago when President Eisenhower first introduced the phrase “military-industrial complex” to the American political lexicon. We are delighted to bring them collectively to your attention, and we are immensely grateful to Philip Scranton and his colleagues in the editorial leadership of *Enterprise & Society* for providing us the perfect platform to do so.