Union was an enemy that could be lived with, perceived its threat as political and ideological, and worked energetically for international atomic energy control. But he was so shaken by the Korean War that he helped found and headed the Committee on the Present Danger, a group that ostensibly was independent, nonpolitical, and nonpartisan but acted as an official propaganda arm of the government. It succeeded in arousing fear of a Soviet threat and rallying public

"Shortly after the two opposed each other in a secret Anglo-American dispute over atomic collaboration, Conant presented Winston Churchill with an honorary degree from Harvard in September 1943." [From *James B. Conant*]

support for universal military service and a vastly enlarged military budget.

Conant was deeply committed to academic values, opposed the corruption of pure science, and "fervently warned that the hungry wolf of military domination must not devour the lamb of basic research" (p. 558). But in alarming the public about the Soviet Union he helped create the climate that promoted the militarization of science he deplored.

He was a man who cherished academic freedom and the academy's independence from outside control. But the president of a premier institution of higher learning and acknowledged educational leader suffered a failure of nerve and left a tarnished record in responding to McCarthyism's assault on the nation's schools and colleges. Perhaps more from expediency (to make it easier to defend threatened non-Communist leftists and liberals) than from principle, Conant endorsed the position that Communists should not be hired as teachers (fudging on the related and more complicated question of whether those already on the staff should be fired), and he came to advocate the summary dismissal of professors who refused to "name names" before congressional committees.

He was a committed democrat who championed public education, viewed equal educational opportunity as the key to social mobility, and chided Americans that their vaunted "belief in a society with the minimum of class distinction is contradicted every time we segregate Negroes or discriminate against those of Mexican, Japanese, or Jewish ancestry" (quoted on p. 403). But his response to racial injustice and inequality lacked energy. He counseled caution and careful planning, when it was the moral indignation and outright civil disobedience he decried that would prove to produce real results.

If there is a theme to this book it is that in everything he did Conant occupied the middle ground. His high principles and keen sense of social responsibility were tempered by the fact that he was cautious by disposition and moderate by conviction. This trait lends a remarkable consistency to his "several lives."

There is another important thread in Hershberg's narrative. Since early 1940, anticipating by a year Henry Luce's well-publicized idea of the "American Century," Conant foresaw a new world order, dominated by the United States. He believed that the nation was destined to exercise global political, military, and economic leadership. This view propelled the power elite as it guided America to global ascendancy from its triumph in World War II through its failure in Vietnam.

Readers who might want to know more about Conant the chemist (he was, after all, considered a likely candidate for a Nobel Prize) or be interested in a thorough assessment of Conant's 20-year Harvard presidency and his activities in educational reform will not be satisfied with this book. It is not a balanced treatment of Conant's career, nor does it contain many surprises. These observations are not intended to detract from Hershberg's impressive and substantial achievement. He has used the life of one strategically placed individual to illuminate the most important issues surrounding America's role and conduct in the nuclear age. His book will be invaluable to scholars assessing the impact and legacy of the group who acquired the epithet "wise men" now that the Cold War has receded.

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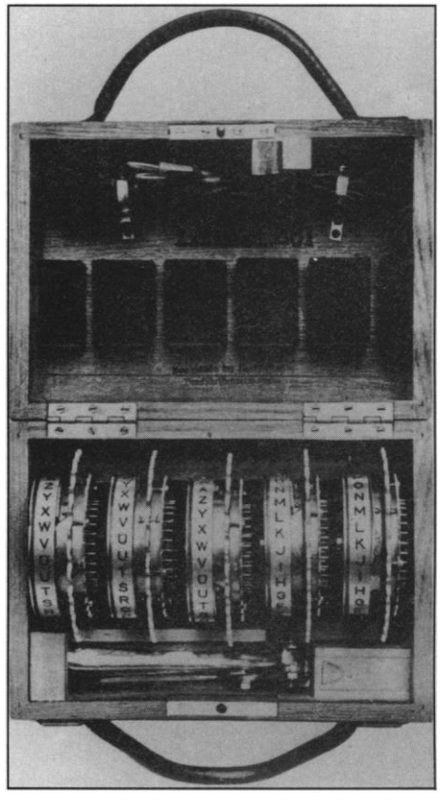
Decryption Day by Day

Codebreakers. The Inside Story at Bletchley Park. F. H. HINSLEY and ALAN STRIPP, Eds. Oxford University Press, New York, 1993. xxii, 321 pp., illus., + plates. $25 or £17.95.

Throughout the Second World War, in a now-famous collection of buildings and huts at Bletchley Park, north of London, a small group of dedicated military personnel and civilians decoded Axis radio signals that had been encrypted by several machines, including the "Enigma" cipher machine. That feat gave the Allies an incredible advantage for almost the entire duration of the war and no doubt affected the outcome of several campaigns. The participants in that drama were for many years sworn to an oath of secrecy, which only recently has been lifted. Although some details and a general history of Bletchley have been available from a number of books and journal articles, the present volume is unique in that it contains only first-person accounts, by a total of 29 persons who were all participants in the drama.

Several contributors to the volume note how remarkable it is that these secrets were kept successfully not only during the war but

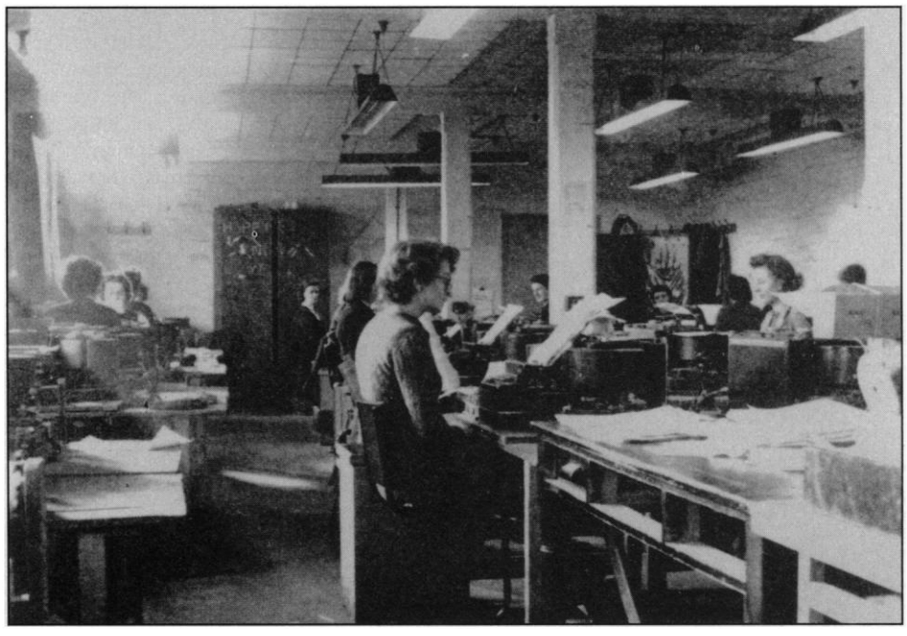


"Box of five 28-letter wheels for early Marine Enigma (*Funkschlüssel* C, Mark II, used from July 1933), with separate A and Ä, U and Ü." [From *Codebreakers*]

for so long afterward in an era when tabloid newspapers, investigative journalists, and market-driven television programming have made the term "official secret" an oxymoron. It is also remarkable that the contributors are able to remember so much after spending 50 years trying to suppress any memory of what happened lest they break their oath. (The editors of the volume have also done a rigorous job of cross-checking the individual stories to ensure accuracy.) In any event, the former workers at Bletchley are now free to tell their story, up to a point: at least one contributor breaks off a description of a decryption technique with the statement that to go further would require introducing still-classified material, and the editors state in the preface that "the Government still requires them not to disclose details of some of the methods by which intelligence was obtained." Despite all the advances in digital computers and signals intelligence, the fundamental techniques of cryptanalysis discovered at Bletchley must still be in use—or those now in charge of these matters would have us think so.

The contributors, however, are free to disclose several crucial details that in earlier years seem to have been proscribed (even if many readers already know about them from other sources). The first is the fact that success was due as much to lax discipline among the Germans using the Enigma coding machine as to the codebreaking machines installed at Bletchley. Another was that the Bletchley people took clever and effective advantage of a peculiar property of the Enigma: it would transform a letter into any other letter except itself according to a complicated system of rotors and plug boards. What emerges is a picture of attributable generated in part, yes, to the genius of men like Alan Turing and Gordon Welchman, but more often to the patience, attention to detail, and perseverance of ordinary young men and women who toiled day after day at their stations. Radiating through these chapters is the dedication, patriotism, and *esprit de corps* of all who were at Bletchley, at all ranks.

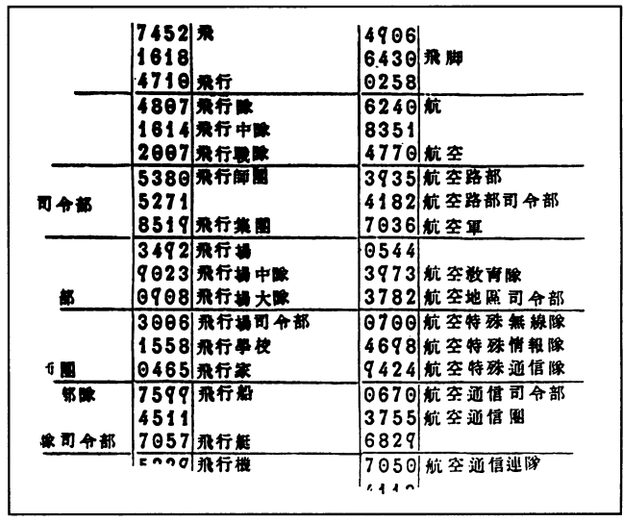
Many of the chapters begin with personal anecdotes about how the author was recruited and what kinds of living or social arrangements he or she had. Generally the recruits were young and often just out of school—Cambridge was a favorite recruiting ground. Many had studied mathematics, but they might just as easily have been selected for their skills at chess or crossword puzzles. Students of the German language were of course sought, but it was difficult to find people with a knowledge of Japanese, and a special school to teach the rudiments of military Japanese, as encoded onto teletype machines, was begun. Once selected, the workers might be paid as little as 2 pounds a week. As mentioned, none betrayed the trust that the British government had placed in them.



"This almost certainly shows the decryption of Enigma in Hut 6 [at Bletchley Park]; once the day's settings had been found, the signals could be decrypted on modified British Typex cipher machines; their output was on sticky tape, such as can be seen on the floor." [From *Codebreakers*]

This reviewer found the passages that describe the technical side of codebreaking difficult if not impossible to follow in many places. Sometimes different contributors describe the same techniques, but in ways just different enough to prevent what one has learned from one description from facilitating understanding of the other. Most of the descriptions are rendered in narrative prose, using the specialized vocabulary that arose at Bletchley during the War (for example, "cross" and "dot" for the presence or absence of a hole in teleprinter tape). Others, especially the chapter by Jack Good, use the vocabulary and symbols of modern mathematics. The former give more of a flavor of the times; the latter are easier for the modern reader to understand and follow. The book would have benefitted from a straightforward exposition, in mathematical notation, of the basic problems and their solutions. The restrictions on what they are allowed to say probably prevented the editors from providing that.

Though several of the contributors to this volume raise the question of whether or by how much their work shortened or affected the outcome of the war, they do not descend into the polemics that mar some of the other books on the subject. These are the stories mainly of people working at the lowest levels, who had little knowledge of how their work fitted into the big picture, other than knowing that it *was* important. All too often such work is slighted or taken for granted by military historians. The chapters in this book make the point that success in breaking the enemy codes was anything but routine or automatic; it required



	7452	飛	4906	
	1618		6430	飛脚
	4710	飛行	0258	
	4807	飛行隊	6240	航
	1614	飛行中隊	8351	
	2007	飛行戦隊	4770	航空
	5380	飛行師団	3935	航空路部
司令部	5271		4182	航空路部司令部
	8519	飛行集団	7036	航空軍
	3492	飛行場	0544	
	9023	飛行場中隊	3973	航空教育隊
部	0908	飛行場大隊	3782	航空地区司令部
	3006	飛行場司令部	0700	航空特殊無線隊
	1558	飛行学校	4698	航空特殊情報隊
団	0465	飛行家	9424	航空特殊通信隊
郭隊	7599	飛行船	0670	航空通信司令部
	4511		3755	航空通信団
隊司令部	7057	飛行艇	6829	
	5020	飛行機	7050	航空通信連隊

"Part of a typical page from the Japanese Army Air Force 6633 code-book. The right column contains three groups of special interest, since they were known ro refer to units engaged in intercepting and breaking American, British, Chinese, and Soviet signals: 0700 *kōkū tokushu musentai* (Air Special Radio Unit(s)); 4698 *kōkū tokushu johotai* (Air Special Intelligence Unit(s)); 9424 *kōkū tokushu tsūshintai* (Air Special Communications Unit(s))." [From *Codebreakers*]

a fresh, energetic attack on the intercepts almost every day. This collection of essays makes that point well, and for that reason alone this is one of the best of the books about Bletchley Park.

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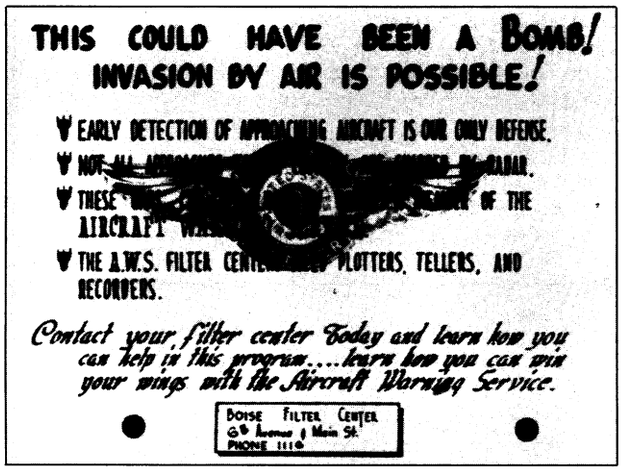
Cold War Social Science

Science of Coercion. Communication Research and Psychological Warfare, 1945–1960. CHRISTOPHER SIMPSON. Oxford University Press, New York, 1994. x, 204 pp., illus. $29.95 or £22.50.

The end of the Cold War may signal a new opportunity for scholars interested in understanding the political underpinnings of contemporary social science. If so, Christopher Simpson's *Science of Coercion* will provide a useful and provocative starting point.



Leaflet dropped in the 1950s as part of Project Revere, a series of U.S. Air Force–financed message diffusion studies conducted by sociologists at the University of Washington. The scientists "dropped millions of leaflets containing civil defense propaganda or commercial advertising from U.S. Air Force planes over selected cities and towns in Washington state, Idaho, Montana, Utah, and Alabama. They then surveyed the target populations to create a relatively detailed record of the diffusion of the sample message among residents." The researchers "developed elaborate mathematical models describing the impact" of such stimuli, and the project "generated dozens of articles for scholarly journals, books, and theses." [From *Science of Coercion*]

By closely examining published accounts, archival records, and previously classified documents, Simpson traces the tangled relationship linking Cold War politics to communications research in the years between 1945 and 1960. He presents his findings in a concise, cogently argued, and lucidly written account remarkably free of contemporary communications jargon.

Simpson's study explores the symbiotic relationship between the academic discipline now called "mass communications" and the more shadowy entity that Americans called "psychological warfare," the British "political warfare," and the Germans, in perhaps the most telling expression of all, "*Weltanschauungskrieg*" ("worldview warfare"). In the United States, this relationship first became apparent in the post–World War I writings of Walter Lippmann, an intellectual who "shaped psychological strategy during the war itself, and then helped integrate the experience into the social sciences once most of the shooting was over" (p. 17). It became even more crucial during World War II, when the United States found itself opposing an enemy who elevated the study of propaganda into a prime weapon of warfare. In response, numerous social scientists, among them many recent emigrés, offered their intellectual services to the American military. At the time, only a few expressed any moral qualms about the antidemocratic potential of teaching the government to manipulate the media if the end result was to be the defeat of Nazism.

For some scientists, little changed as America moved from a hot war to a cold one, from antifascism to anticommunism. Yet as Simpson shows, these changes raised crucial questions that positioned communications theorists along an increasingly slippery moral slope. Were psychological warfare tactics equally valid in peacetime? Could they be used (secretly) in democratic countries—for instance, to reduce the influence of communists in the Italian elections of 1948? Should they be used by our government to undermine indigenous revolutionary movements abroad—for example, in the Philippines, the Middle East, Southeast Asia, and Latin America? Such questions were rarely raised as the wartime Office of Strategic Services (OSS) was gradually transformed into the peacetime Central Intelligence Agency (CIA), and the very existence of a relationship between communications research and clandestine operations became ever more deeply buried under "multiple, overlapping layers of cover stories, deceits, and euphemistic explanations" (p. 38).

In recovering this relationship, Simpson analyzes his findings within a sophisticated framework. He does not suggest that government funding overtly influenced scientific findings. Instead, he focuses on both the positive and negative pressures that shaped academic behavior during these decades.

Much of this book documents the positive inducements for government-university collaboration. Among the most compelling was massive funding. By the early 1950s, agencies such as the Department of Defense, the U.S. Information Agency, and the CIA were spending "between $7 million and $13 million annually for university and think-tank studies of communication-related social psychology, communication effect studies, anthropological studies of foreign communication systems, overseas audience and foreign public opinion surveys, and similar projects" (p. 9). Such funding, frequently with no public acknowledgment, Simpson finds, often constituted more than 75 percent of the annual budgets of the Bureau of Applied Social Research (BASR) at Columbia, the Institute for International Social Research (IISR) at Princeton, and the Center for International Studies (CENIS) at MIT, among others.

Equally crucial were the social connections forged by war work. Nearly all the "founding fathers" of communications studies contributed to World War II psychological warfare research, either as employees or as consultants. Among them, Simpson cites Wilbur Schramm, Harold Lasswell, Samuel Stouffer, Leonard Cottrell, Carl Hovland, Hadley Cantril, Charles Dollard, Paul Lazarsfeld, Louis Guttmann, Robert Merton, Ithiel de Sola Pool, John Clausen, Edward Barrett, Nathan Leites, Morris Janowitz, Daniel Lerner, Edward Shils, Alexander Leighton, Leo Lowenthal, Hans Speier, Herbert Marcuse, Clyde Kluckhohn, Frank Stanton, George Gallup, Elmo Roper, and William S. Paley. The military, Simpson concludes, had in effect created "an extraordinary postgraduate school" (p. 28) whose "old-boy" network would profoundly influence university appointments, foundation awards, and publishing decisions for decades to come.

Cold War social scientists were also responding to negative pressures, including the very real threat of McCarthyism. In an era when even the term "neutralist" might suggest a potentially career-ending political position, academic leaders struggled to defend their disciplines. Many found some measure of security in presenting social science research as a necessary component of the national defense.

By 1960, these factors had produced an