

review essay

Counter-Intelligence: What the Secret World Can Teach Us About Problem-Solving and Creativity

Robert Hannigan (HarperCollins, 2024, 336 pages)

Challenger: A True Story of Heroism and Disaster on the Edge of Space

Adam Higgenbotham (Avid Reader Press, 2024, 576 pages)

Reviewed by John Ehrman

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You don't see too many books about the management of intelligence services, and for good reason. After all, how big is the audience for tales of the administrative side when there are thrilling operational stories to be told? But management is vital, for without it no exquisite human or technical ops are possible. That is why two new books, one specifically on intelligence and the other not, are worth reading for their insights on managing intelligence work.

Problem-Solving and Creativity

Let's start with the basics: how do you organize and staff an intelligence service? How can services create a culture in which unusual people doing unique work can succeed? Maybe most important, how do you do all this during a time of rapid technological change and organizational disruption? These are the questions that Robert Hannigan, former director of the UK's Government

Communications Headquarters (GCHQ) and now an academic at Oxford, addresses in *Counter-Intelligence*. It is an absorbing, perceptive, and challenging book that gives readers much to think about.

Hannigan answers these questions by looking at the history of GCHQ from its antecedents before World

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War I through the Cold War and the recent establishment, on his watch, of the National Cyber Security Centre (NCSC). This is not a detailed linear history of British SIGINT, however. Instead, Hannigan tells short stories, focusing on the episodes that shaped GCHQ and created a culture that, he says, continues today. Most of his examples are familiar because, coming from the world wars, they were declassified long ago.

Within this framework, Hannigan pays most of his attention to the people who accomplished heroic feats when England was in peril. Codebreaking is an ancient practice, but in World War I, the interception and decryption of large numbers of radio transmissions was a completely new task, undertaken without an established corps of professionals or supporting infrastructure. Who, then, to hire or assign to invent intelligence gathering and analysis on an industrial scale?

The answer, says Hannigan, was not simply the mathematicians or linguists you would expect but, rather, people who enjoyed solving puzzles and playing difficult games. What they had in common were talents for spotting patterns and organizing data, which were critical skills for decryption in the pre-computer age. (During World War II, one recruitment test for Bletchley Park was to ask candidates to solve the *Daily Telegraph's* crossword puzzle.) Others, like Alan Turing, indeed were brilliant theoreticians, but most came from unexpected backgrounds and walks of life, with wide ranges of talents and outside interests. They were a collection of eccentrics with “random skills” and, Hannigan notes at several points, few would make it

through today’s corporate and government hiring tests, “which prioritize speed and practical focus.” (88)

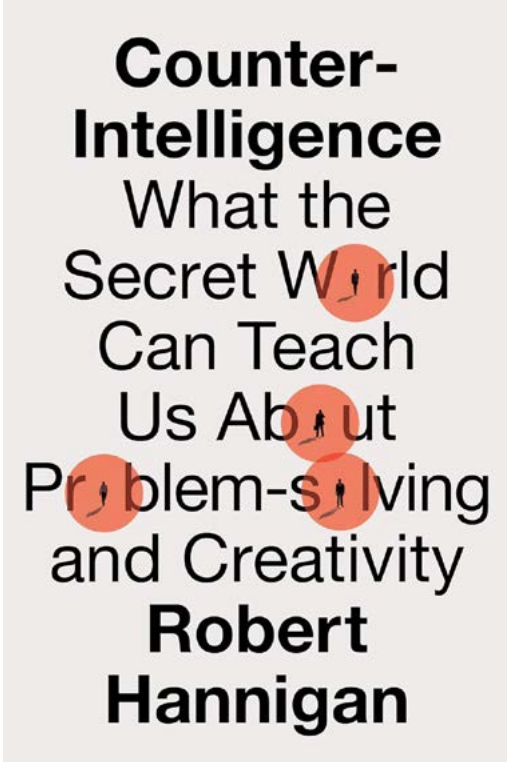
Counter-Intelligence abounds with stories of these ordinary-but-unusual people who did extraordinary things. One of the best known is Alfred Dillwyn “Dilly” Knox, who started as a papyrologist studying fragments of poetry by Herodas—a Greek poet of the third-century BCE—that had been found in the

Egyptian desert. Knox had no template to guide him in assembling the ancient fragments, which themselves contained mistakes made by scribes two millennia ago and shifted dialects within poems. Knox, however, knew that he faced not only a technical problem but a human one. “Deciphering the fragments therefore involved understanding both the poet and the idiosyncrasies of the scribe—the human errors,” Hannigan comments.

The British used Knox’s approach in World War II, getting to know the idiosyncrasies and weakness of individual German radio operators. This enabled them to predict the

mistakes the Germans would make and, in turn, gave the code breakers an important edge in their work. Once Knox had deciphered a passage of Herodas, it provided a key to others—and the same turned out to be true for the German codes. (Knox’s translations of Herodas remain in print today, and he used these methods to break Hungary’s diplomatic codes between the wars without ever learning a word of Hungarian.)

In contrast to Knox, few have heard of Geoffrey Tandy, a botanist and marine biologist working at the Natural History Museum in London at the start of World War II. He answered a misprinted ad, or so the



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story goes, seeking experts in cryptograms, a class of plant that includes seaweed, and soon was hired for Bletchley Park. Tandy spent the war mostly compiling and cross-referencing German and Japanese terms that could not be found in standard dictionaries but also—and here is where an expert in saltwater algae is good to have around—salvaging and preserving codebooks retrieved from sunken German ships and U-boats.

Hannigan pays attention to the administrative side as well. Brilliant people often turn out to be difficult employees or terrible managers (you probably don't need a book to tell you this). In dealing with unusual and creative people, Hannigan says that the British experience shows that a flexible and informal system works best, though it requires managers to know their people well enough to see who works best alone or in a team, whom to flatter, and how to channel disparate energies toward a common goal.

Knox again is a good example. At the start of World War II, he was made part of the joint UK-French-Polish team working on Enigma, but he was a disaster—undiplomatic and determined to control all that he worked on, and his boss at one point had to send a written apology to the French for Knox's behavior. Ultimately, the team was reorganized so that Knox could concentrate on his own research, which provided methods that others could use to exploit the intercepts. Despite his repeated threats to resign, Knox stayed on and, working with a small, all-female staff of his own—"Dilly's Girls," a tag that would not be tolerated in today's corporate cultures—made the breakthrough that led to the British naval victory over the Italians at Cape Matapan.

GCHQ's Cold War work remains hidden, but Hannigan leaves the impression of significant successes against Soviet targets, and for much the same reason as in World War II. Here, he adds some interesting comments on neurodiversity and the challenges—and rewards—of hiring people with "problems." In retrospect, of course he sees that such individuals have long been overlooked resources, with specific talents

that enable them to make valuable contributions. The Israelis, he notes, have found that autistic individuals make very good imagery analysts, better at interpreting blurred images than any software, because of their "relentless focus on the detail of what can or cannot actually be seen, resisting our normal tendency to extrapolate or make assumptions and guesses." (248)

Hannigan brings the story to the present with a discussion of cybersecurity. The problem of how to adapt intelligence work to changing threats and circumstances is not new, and neither is Hannigan's recommended solution—to continue the tradition of innovation and openness to unconventional people and approaches. He points to NCSC, whose founding he oversaw, as an example of rethinking whether the traditional extreme secrecy of the SIGINT world is appropriate for cybersecurity. "Calling out Russian, Chinese, Iranian, or North Korean cyber actions and describing some of their details goes against most of the instincts of the secret world," he says, but has the advantage of spreading the information that enables parties outside the formal intelligence world to help combat these threats. (284)

Hannigan tells his story and makes his case in clear, delightful prose, with the dry wit for which the English are famous. It helps to have a background in intelligence history—he assumes basic knowledge of codebreaking in the wars as well as such back stories as why Charles Dodgson (aka Lewis Carroll) is not held in much esteem these days—but avoids technical jargon or discussions, so the book is accessible to the lay reader. Indeed, if you are at all interested in intelligence work and the people who do it, you won't want to put it down.

That said, however, some US readers may find that *Counter-Intelligence* has a subversive side. Hannigan views diversity through the lens of individuality. He takes his talent where he finds it, regardless of race, gender, and so on; he seems unconcerned about building a GCHQ that looks like Britain. In the United States, by contrast, diversity, equity, and

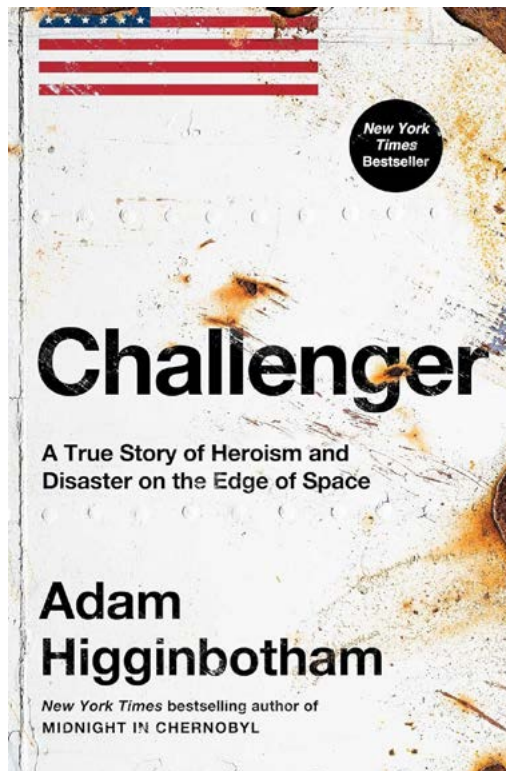
inclusion (DEI) emphasizes groups and group identity. This is not surprising, as such an emphasis lends itself to the needs of large organizations—the US Intelligence Community comes to mind—by making metrics easier to collect. What this approach does not do, however, is guarantee the hiring of the talented individuals a given organization truly needs. This is what Hannigan is telling us when he says that so many of the greatest contributors at Bletchley Park could not make it through today’s hiring processes. It also is

what he is saying when he cites Conway’s Law, that “large organizations are constrained to build systems that mirror their own structures” and will “arrange staff according to existing processes ... reflecting the way that work has been done in the past” rather than consider radical change in their processes. (77) The IC today is far more diverse than it was 40 years ago, but many of its day-to-day procedures are unchanged, albeit computerized. Whether the IC has become any better at its core tasks is an open question.

Heroism and Disaster

If figuring out how to build a successful organizational culture isn’t enough of a task for you, then Adam Higginbotham’s *Challenger* will give you plenty more management issues to consider. This will be especially so if, like many of us, you’ve asked why we keep making the same mistakes over and over.

Challenger is a history of the space shuttle program, from its origins in the late years of the Apollo program, when NASA was trying to figure out what to do after the moon landings ended, through the *Challenger* disaster in January 1986. Higginbotham, a journalist and author of the extraordinary *Midnight in Chernobyl* (2019), tells the story in riveting detail. As with his recounting of the Chernobyl nuclear catastrophe, Higginbotham brings his characters to life, makes complicated technology easy to understand, and builds the suspense even though you know what is going to happen.



Why, then, should an intelligence audience be interested in the well-known tale of NASA’s failure? The answer is that, as a government agency, NASA’s problems are the same as those found in the IC. Looking to build on the glory of the moon landings, as well as to preserve its prestige and budgets, NASA set itself the ambitious goal of building a reusable space plane. The shuttle would be more technologically advanced and complex than any previous space vehicle, and NASA would use it, in essence, to build a cargo airline in orbit.

Unfortunately, such ambitions do not come cheap and as the program advanced through the 1970s, NASA found itself operating in an unfriendly political and public relations environment in which its budgets were subject to repeated cuts. Nonetheless, the space agency maintained its goals. This meant that, as costs rose and pressure to show results and placate an increasingly critical Congress and public increased,

NASA began cutting corners. Risks that should have been considered unacceptable—most notably the design flaw in the solid rocket boosters that made a catastrophic failure all but inevitable—were wished away, under the designation of “acceptable.” After all, the reasoning went, as the shuttles flew mission after mission and nothing bad happened, the chances the boosters would explode must be minimal. Even as the engineers at Morton Thiokol, the booster’s manufacturer, repeatedly warned of the dangers, “NASA managers prioritized magical thinking over technical realities.” (422)

Matters came to a head in January 1986, when NASA, frustrated by bad publicity from repeated delays, pressed Thiokol to agree that it was safe to launch *Challenger*, even though the cold weather made the boosters especially likely to fail. Thiokol’s higher managers, for their part, were worried about losing the lucrative contract to build the rockets and overruled their engineers’ objections. The launch went ahead, and *Challenger* and its crew were lost, exactly as predicted.

Following the loss of *Challenger*, former Secretary of State William Rogers led the formal inquiry, which led to extensive changes in NASA’s procedures. But organizational culture is a powerful force and, once the glare of publicity eventually dimmed, “slowly, insidiously, some of the old ways and attitudes became reestablished,” writes Higginbotham, describing Conway’s Law in action. In January 2003, during the launch of *Columbia*, a piece of insulating foam on the giant external fuel tank fell off and hit the leading

edge of the shuttle’s left wing, damaging the tiles that protected against the heat of reentry. Like the boosters, this wasn’t a new problem—it had been known since the first launch in 1981—but, as it had never led to trouble before, the risk was assumed away. This time, however, the hit on the tile left a hole that let in superhot gas during reentry, in effect melting the wing from within as the shuttle returned to earth.

The management and leadership lesson of Higginbotham’s account is simple: wishing does not make things so, and not listening to the people who know what they are talking about leads to terrible outcomes. Just as important, having a glorious past is fine, but trying to relive it without sufficient resources is folly; when budgets are cut, ambitions must be adjusted as well. Pretending otherwise—telling employees to “do less, better” or “work smarter, not harder”—leads only to sloppy, substandard work.

These books offer the reader two different experiences. *Counter-Intelligence* is a story of intelligence triumphs as well as a guide to shrewd personnel management; it’s an upbeat book that, while it may leave you frustrated with your organization, tells you that improvement is possible. *Challenger*, by contrast, is more complex and relentlessly grim. But you’ll see more of your own experiences in Higginbotham’s book, and gain an understanding of why true change in government is so difficult. You won’t go wrong reading either one, and reading them in tandem is truly enlightening. ■