

## Enduring principles

# Some Lessons in Intelligence

*Editor's Note: The award-winning author made the following remarks at a symposium at CIA Headquarters on 26 October 1993:*

Most of what I have to say here about our common interest, the subject of intelligence, can be found in the two books, *Most Secret War* (or *The Wizard War*) and *Reflections on Intelligence*, which you already have. And, if there are matters arising from them on which you would like to question me, I shall be glad to respond. Compared with some of you, though, I spent a relatively few years in full-time intelligence, and most of my experience was gained around 50 years ago. I therefore address you with some diffidence.

## Scales of Operation

A point to be made at the outset is the enormous difference between the scale on which you operate today and our own efforts in World War II, and so lessons based on our experience must be drawn with caution. Napoleon made the point when discussing the outcome of actions between his own cavalry and the Mameluke horsemen of Asia Minor. These horsemen were so good that two of them would defeat three of his cavalymen in a minor skirmish. But in a major battle, 1,000 of his cavalry would defeat 1,500 Mamelukes. On the small scale, horsemanship was the predominant factor, but on the large scale victory would be won by the controlled and disciplined application of force. Wellington made much the same point regarding actions between his cavalry and their French opponents.

On both scales of operation skilled horsemanship and cooperative action were ingredient factors, but the balance of importance between them changed with scale. Similarly, in intelligence personal skill may be the paramount factor on the small scale, but the ability to coordinate the skills of many individuals may be predominant in large-scale operations. All that I can therefore usefully do now is to mention some of the principles that emerged from my experience and leave it to you to decide their relative importance in the present scale of your operations.

## World War II

World War II was a fortunate and exhilarating time to be involved in intelligence, when new channels of information were opening up, and when we could quickly see the effects of our work on the operation of war. Moreover, we had a highly specific objective: to discover as much as possible about our German

opponents both as regards the threats that they posed to our defenses and to our survival, and as regards the techniques and dispositions by which they hoped, in turn, to defeat our own attacks.

For me personally it was a time even more fascinating than it was opportune. The state of technological developments over a wide range of fields was still elementary enough for one individual to be abreast of them, and yet advanced enough for technology to have profound effects on warfare. Electronics, for example, was in transition from the "steam age" of radio to the sophistication of television, radar, and devices based on the scale-of-two counter.

## An Analogy

As I started to analyze what I was doing in building up an intelligence system to cover scientific and technological developments, I came to realize that just as a human head depends on sight, sound, smell, and touch as channels for gathering data about the external world for processing and interpretation by the brain, so an intel-ligence system depends on spies, electronic and photographic reconnaissance, and so forth. So I came to see the battle between intelligence and deception as the efforts on one side to establish as many channels as possible through which to observe the opponent, in the hope that he may fail to block at least some of these channels, while the opponent may in addition try to send false, and preferably consistent, signals in as many channels as possible.

To succeed in any such exchange, you should therefore aim to establish (and, if possible, multiply) your channels of observation, and to deepen the sophistication in each individual channel so that if your opponent tries to send false signals in that channel he may fail to match a genuine signal in its sophistication. You will find all this elaborated in *Reflections on Intelligence*.

## Channels and Linkages

Besides remarking the value of multiplying the number of channels by which you observe the enemy, it is worth realizing that each channel may also be regarded as a chain of links by which information is processed and passed on. At Bletchley, for example, information came in through radio operators listening to enemy signals encrypted as sequences of letters. These sequences were then fed to the cryptographers for decryption, and the resultant clear texts were amended by further experts to correct for possible errors in transmission and reception. The amended texts then went to specialist units such as Hut 3 in Bletchley, where the texts were edited and correlated with any parallel information before being sent to further bodies such as myself, from whom it might then emerge into a more public light and be used in operations.

The point about such a chain that I want to emphasize is that any one link is likely to be regarded as representing the interests of the ultimate user of intelligence by those links that are nearer the source, while being regarded as representing the source by those links in the chain which are nearer to the user.

Thus, for example, I felt it a duty to look after the interests of our sources such as Resistance agents or the cryptographers at Bletchley or the photographic reconnaissance pilots to minimize the risks to which they would be subjected, and see that their hard-won information would be properly applied by our Air Staff. I also felt it a duty to make as clear as possible to our sources what kind of information would best help the Air Staff, and why.

A key link in the chain is the one at which information obtained by highly secret means is correlated and communicated to the operational staffs. I myself was one of those in such a position, and I tried to avoid taking credit for the inspired work, such as that at Bletchley, which had in fact been done by links further along the chain whose activities were still more secret. To borrow a phrase from Churchill, I often felt that I was the one who "had the luck to give the roar," when the real credit belonged to those out of the limelight. And I came to appreciate the wisdom of Field Marshal Slim's observation that "There are...in any big organization, very large numbers of people whose existence is only remembered when something for which they are responsible goes wrong." Instead, their essential but unobtrusive work should be acknowledged with grateful credit whenever possible.

## Collection and Collation

An inherent difficulty in intelligence arises from the fact that the collection and input of information has to be made by source--secret agents, cryptography, electronic intelligence, and so on, while output has to be by subject--naval, army, air, scientific, economic, or political. Here, again, the analogy with the brain is relevant, and in that sense an intelligence system is like a vast neural network where information is gained, filtered, sorted, and correlated before it can be applied to action.

## Conflicts of Priorities

Conflicts of priorities can easily arise when effort is limited on the collection side, and when demands arise from different user interests. My only difference with Bletchley in the entire war arose on this account. This was in 1943, when Enigma decrypts were providing much information of immediate value to military commanders in the field. If, though, their demands absorbed too much of our decrypting effort, there would not be enough left for attempts to decrypt signals of less immediate but of greater long-term value. There was an understandable temptation for Bletchley to put maximum effort into the shorter term decrypts because of the exhilaration that naturally arose from a more direct interaction with operations. On the other hand, I had to press for as much decrypting effort as possible to be devoted to those lines of Enigma traffic that might throw light on longer term developments, such as those in electronic warfare and the prospective V-weapons.

Fortunately, with the precedent of the beams of 1940 still vivid in our memories, I was able to convince the cryptographers that it would be well worth our while to attempt the decryption of Enigma signals associated not directly with operations but with the trails of V-1s and V-2s at Peenemunde and in Poland. And it was from clues gained from the decrypted traffic in Poland that I was able to establish that the

Germans had by July 1944 made at least 1,000 V-2s, and that the weight of the V-2 warhead was fortunately not the 5 to 10 tons suggested by our own experts but no more than 1 ton.

## Experts and Emotions

The battle in Whitehall over the prospective weight of the warhead had been fought with much emotion. Walt Rostow, then an intelligence officer with the US Army Air Force, later gave his impression of the first of our Whitehall meetings that he attended:

Although I was at the time relatively young (27), I had acquired some experience with both academic and government bureaucratic structures and their capacity for bloodless tribal warfare. But I had never been present at, let alone presided over, a meeting with more emotional tension than that centered on the size of the V-2 warhead....What emerged was a reasonably solid intelligence case for a 1-ton warhead.

Only once since have I myself witnessed such an emotional discussion, and once again it involved rockets. This was here in the United States, following President Reagan's announcement in 1983 of the Strategic Defense Initiative. At that time, eminent men of science opposing the SDI project could accuse other eminent men who were supporting it as being involved in deliberate fraud, while no less a physicist than the President of the National Academy of Sciences could, if press reports are to be believed, dismiss the technical arguments produced by those physicists who were critical of SDI as being of comparable shoddiness to the work of Nazi physicists in prewar Germany. There seems to be something about rocketry that arouses the deepest of human emotions.

## The Functions of Experts

The matter of expert opinion brings me to a principle that I was able to clarify regarding the part that experts should play in an intelligence system. By and large, in 1939 our experts in Britain contended that they should be the ultimate authorities in assessing intelligence concerning new enemy weapons. Following the experiences of 1940, I came instead to regard them as our spies on the way in which the laws of nature bore on the problem under consideration. Usually they were very reliable, and great weight therefore attached to their evidence but, occasionally, and such occasions could be important, they were wrong either because their experience was at fault or it was irrelevant or because the enemy was using a discovery that our own experts had not yet made.

One of the failures in scientific intelligence in Britain was in chemical warfare, where intelligence in this field had been left in the hands of our experts at Porton, who dismissed reports that the Germans had something that they called nerve gas, probably because the materials in question were new ones whose behavior was unknown at Porton. So, while expert advice is often very good, it must be assessed in parallel with information coming through other channels of intelligence; if there are contradictions, the validity of the expert advice should be investigated as deeply as would be information coming through

any other channel.

## Oversight

In the early war years few serving or civilian officers in Whitehall or in government research establishments realized the potential value of scientific intelligence. This made it difficult for me to gain sufficient support, particularly in recruiting even those few members of staff whom I wanted. But this same lack of appreciation had one great advantage in that it left me in obscurity to get on with intelligence with minimum bureaucratic hindrance and with minimum oversight by external bodies.

Later in the war it was different: with the importance of scientific intelligence clearly recognized, there were attempts by men of ambition to take it over. And, particularly in the field of the prospective V-weapons, every one of our conclusions was likely to be challenged, with the demand that we should hand over every new item of information as it came in, even before we ourselves had time to think about it. Matters came to a head when Churchill found that I was being expected to spend so much time attending committees to hand over information and answer their resulting questions that he gave me authority to cut meetings whenever I felt justified.

I had remarked that my task was like trying to track a hare lying hidden in a field, and then trying to shoot it with a pistol when it bolted. If he asked me to bring him back the hare, there was a sporting chance that I could do it, provided that I could go into the field quietly by myself to locate the hare; but I would never be able to do so if I had to be accompanied by a committee watching my every step. Their very presence would scare the hare long before I could get within range.

At the same time, though, I understand the need for some degree of oversight. Intelligence is an activity where at times there will be temptation, and perhaps even need, to transgress the conventional limits of moral or legal conduct in the hope of achieving some greater aim. Justified though this may be on occasion, it is natural that there should be misgivings by others who may be unaware of what is at stake; and there have been occasions in which zeal of intelligence officers has led them into action that may be prejudicial to some wider interest. Further, although no problem of legality or morality may be involved, the validity of a conclusion reached by an intelligence organization about, for example, the intentions or weapons of a foreign power, may be questioned by outside authorities who may not have all the information on which the conclusion has been drawn. Any of these grounds may give rise to a call for oversight, and, in that case, the first reaction of an intelligence officer should be to turn to the advice in Kipling's "If":

*"If you can trust yourself when all men doubt you"*

--and here comes the rub--

*"But make allowance for their doubting, too."*

The V-weapon scare of 1943 and 1944 inevitably led to my work being subjected to some degree of oversight. This was at times disagreeable, but there was one instance in which, although my hackles were tending to bristle, it proved to be of the greatest benefit. It was in December 1943, after we had established the existence and the performance of the V-1, and the British chiefs of staff had asked their American counterparts for assistance in combating the threat, including the supply of new radar, predictors, and proximity-fused shells. The American chiefs of staff, though, were not entirely convinced, and thought that we in Britain might be the victims of a deception perpetrated by the Germans in the hope that we would divert our efforts from the preparations for the landings in Normandy. Your chiefs of staff said that they would give us the necessary help, on condition that someone whom they would nominate could be shown all the details of the work on which we had based our assessment.

Personally, I resented the fact that my work and conclusions had been doubted. But our Chief of Air Staff, Sir Charles Portal, gave me a definite order to open my books to whomever the Americans should send, and I awaited the arrival of the unknown expert with some indignation. As soon as he walked into my office, however, all my worries disappeared. He was H. P. Robertson, the Professor of Applied Mathematics at Princeton, who combined a high achievement in relativity with a lively and generous sense of humor.

Within Robertson's first hour in the office, he was convinced by our work, and we became the closest of friends. So much so, that when the V-1 campaign against London opened in June 1944 and I had my own hands more than full with the radar attacks preceding the Normandy landings, the impending threat of the V-2, and the need to entertain Niels Bohr in London, Bob Robertson gladly agreed to act as my deputy regarding V-weapons even though at the same time he was Scientific Adviser to the Supreme Allied Commander. Links such as those which were forged between us so warmly in the heat of war, along with parallel links in other fields of intelligence, including the cryptographers, did much to build up the "special relationship" which was the foundation of the postwar history of our two intelligence services.

## Minimum Trespass

Even without that beneficial outcome of a demand for oversight, I would recognize the need for its exercise, but this exercise needs moderation. Its operation should accord with the principle of minimum trespass that I have found to be valid for every conceivable aspect of intelligence activity.

Just as the principle, or doctrine, of minimum force should govern the exercise of military power, so should minimum trespass operate in the intelligence field. It should, for example, govern the actions of offensive intelligence in gathering information about foreign powers, and it should also govern the activities of security services in trespassing on the privacy of individuals and of civilian organizations. And, conversely, oversight should trespass as little as possible on the rights of an intelligence organization in maintaining the necessary confidentiality regarding that organization's activities.

## Compromise and Balance

There are other aspects of intelligence with which, as with oversight, there are dangers either in having too much or in having too little, and in which optimum compromises have to be found. Among these is the problem of briefing your sources about what they should be looking for. If you tell them too much about what you already know, there is the danger that a source may subconsciously color his future reports in the light of that knowledge; and there is sometimes the further danger that your brief to him may leak out to the enemy. The briefing of sources (and among these I include all individuals or machines who contribute to the flow of intelligence, be this human, photographic, electronic, or otherwise) is therefore an art in which compromises may be necessary. For myself, though, I was fortunate on vital occasions to find sources who could be trusted and who worked all the better the more that I could tell them about what we were looking for, and why.

The timing of intelligence warnings may also demand compromise: too early may lead to "crying wolf," while too late will lead to disaster. And while too few workers in intelligence may result in something important being missed, so also can too many, when the resulting duplication of effort leads to no single individual taking the responsibility in an emergency because he believes someone else will do so. And while a continuous watch on an enemy activity has obvious merits, it can also lead to tiredness in the watchman, with the result that he may miss a vital development, as we did when Scharnhorst and Gneisenau broke out of Brest in 1942.

And yet another balance that an intelligence officer may have to strike is between becoming so personally involved with his sources that he may attach too much, or perhaps too little, importance to the information that they are providing, and remaining so aloof and detached that he may dampen their enthusiasm through seeming lack of appreciation.

## Epilogue

All the foregoing factors therefore call for the soundest of judgment in the conduct of intelligence. It may call for the utmost in craftsmanship, perhaps even in artistry, both in its operations and in presenting its results to those who have to take the ultimate decisions. And deception makes no fewer demands on those who are charged with its practice.

In concluding this brief survey of what I myself saw of some of the problems, I deeply appreciate the honor of addressing you--all the more so because of the much greater problems you yourselves have to face. We were able to concentrate on the one major problem of Germany, and it was an immediate one, with all the exhilaration that a success in intelligence could bring. Your problems, including the uncontrolled spread of advanced weapons and of drugs, are on a worldwide scale. As the intelligence service of the world's most powerful nation, you have an enormous responsibility to bear. We saw something of such problems in the days of Pax Britannica, and we know that you will get little thanks however nobly you tackle them, and only showers of criticism when things go wrong. As Kipling put it; "The blame of those ye better and the hate of those ye guard."

But, for all that, intelligence, properly conducted, is not only honorable but is a vital contribution to the stability of the civilized world.

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### ***A Personal Look***

*Editor's Note: The following sketch of Professor Jones was prepared by the Directorate of Intelligence's Science and Technology Officer in London who served as Jones's escort during his visit to the United States.*

During World War II, R. V. Jones, a junior scientific adviser to the RAF, had personal access to Prime Minister Churchill. His last active involvement with intelligence was during the Falklands war, when he advised Prime Minister Thatcher.

Jones first visited CIA in 1953 as head of the UK's scientific intelligence effort. Some 20 years later, at the invitation of DCI Schlesinger, he was the first foreigner to address an audience in the Agency's auditorium.

Jones taught physics for over 30 years in the University of Aberdeen's Department of Natural Philosophy. In 1981, Jones became professor emeritus there. Jones tells the story that, when new students were shown around his department, they were cautioned: "Whatever you do, be careful around Professor Jones. He thinks he won the war by himself."

An excellent raconteur, Jones also has a fine sense of humor. His jokes frequently have a point, such as his following story of the scientific mind at work:

The Germans had won the war and decided to stamp out resistance by publicly executing the chiefs of the military services and the chief scientist. The First Sea Lord was brought to the guillotine erected on Trafalgar Square, the blade came down, but miraculously stopped an inch short of his neck. The Germans, impressed with what seemed to be divine intervention, let the man go. The same happy fate met the chiefs of the air force and army. When it came time for the chief scientist's execution, he declared his desire to lie on his back and watch the mechanism work. Just as the blade was to descend, the man cried out, "Hold it, chaps! I think I see your problem."

One of the visit's most charming moments followed a suggestion to drive Jones to Middleburg, Virginia, for a Sunday lunch. After being in Middleburg for about 10 minutes, a young lady exclaimed, "Reg!" Lisa Johnson, an artist and interior decorator, had met Jones in London and Aberdeen. After lunch at Moseby's Tavern with other friends of the professor's, Ms. Johnson sang Puccini and Schubert arias at a crowded upscale clothing shop for Jones. The shopowner accompanied on a grand piano just inside the door. Jones reciprocated on his one-inch harmonica with the Scottish lament played at Churchill's

funeral.

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