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*A tyrant's death at patriots'
hands revealed as Operation
Salmon of Czech Intelligence
in exile.*

THE ASSASSINATION OF REINHARD HEYDRICH

R. C. Jagers

On the twenty-ninth of May, 1942, Radio Prague announced that Reinhard Heydrich, Reichsprotektor of Bohemia and Moravia, was dying; assassins had wounded him fatally. On the sixth of June he died.

Though not yet forty at his death, the blond Heydrich had had a notable career. As a Free Corpsman in his teens he was schooled in street fighting and terrorism. Adulthood brought him a commission in the German navy, but he was cashiered for getting his fiancée pregnant and then refusing to marry her because a woman who gave herself lightly was beneath him. He then worked so devotedly for the Nazi Party that when Hitler came to power he put Heydrich in charge of the Dachau concentration camp. In 1934 he headed the Berlin Gestapo. On June 30 of that year, at the execution of Gregor Strasser, the bullet missed the vital nerve and Strasser lay bleeding from the neck. Heydrich's voice was heard from the corridor: "Not dead yet? Let the swine bleed to death."

In 1936 Heydrich became chief of the SIPO, which included the criminal police, the security service, and the Gestapo. In 1938 he concocted the idea of the Einsatzgruppen, whose business it was to murder Jews. The results were brilliant. In two years these 3,000 men slaughtered at least a million persons. In November of that year he was involved in an event that in some inverted fashion presaged his own death. The son of a Jew whom he had deported from Germany assassinated Ernst von Rath in Paris. In reprisal Heydrich ordered a pogrom, and on the night of November ninth 20,000 Jews were arrested in Germany.

In 1939 the merger of the SIPO with the SS Main Security Office made Heydrich the leader of the Reichssicherheitshauptamt. In this capacity he ordered and supervised the

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"Polish attack" on Gleiwitz, an important detail in the stage setting for the invasion of Poland on September first. It was he who saw to it that twelve or thirteen "criminals" dressed in Polish uniforms would be given fatal injections and found dead on the "battlefield." It was probably he who chose the code name for these men—Canned Goods.

At this time Bohemia and Moravia had already been raised from independent status to that of Reichsprotektorat, with Baron von Neurath, Germany's now senile former foreign minister, designated the Protector—of the Czechs from themselves, presumably. But a greater honor was in store for them. On 3 September 1941 von Neurath was replaced by SS Obergruppenfuehrer Heydrich. The hero moved into the Hradcany Palace in Prague and the executions started, 300 in the first five weeks. His lament for Gregor Strasser became his elegy for all patriotic Czechs: "Aren't they dead yet? Let them bleed to death."

He had come a long way in thirty-eight years. The son of a music teacher whose wife was named Sarah, Reinhard had gone on trial three times because of Party doubts about the purity of his Aryan origin. Now, as chief of the RSHA, which he continued to run from Czechoslovakia, he was Hangman to all occupied Europe. His power was such that he could force Admiral Canaris to come to Prague and at the end of May, 1942, sign away the independence of the Abwehr and accept subordination to the Sicherheitsdienst. It was his moment of sweetest triumph. A few weeks later he was dead, and Himmler pronounced the funeral oration calling him "that good and radiant man."

So much for the story we all know, and on to questions left unanswered by it. Who were Heydrich's assassins? Who could successfully plan his death? Was the motive simply revenge for suffering? How was it accomplished? And the hardest question of all, was it a good thing? Here, for the first time, are the answers to all these but the last, and on that question stuff for pondering.

Need Mothers an Invention

When Heydrich took charge of Bohemia and Moravia, the Czechs learned what it means to live under a master of suppression. The war fronts were far away: it was the period of

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smashing German successes in the Balkans, Scandinavia, France, and the USSR. The Czechs heard little that Heydrich did not want them to hear. Their underground movement was systematically penetrated and all but destroyed. On October third of 1941, for example, the capture of a single Czech radio operator by Heydrich's men led to the arrest of 73 agents working for Moscow. Underground radio contact with London was monitored. The Czechs were losing heart.

In London the strength of the resistance in all occupied countries was periodically reviewed, and the countries were listed in the order of the assistance each gave the Allied cause. In 1941 Czechoslovakia was always ranked at the very end. Eduard Benes, its president-in-exile, was deeply embarrassed. He was also gravely concerned that the Allies, if his people failed to fight, might give short shrift to any Czech claims after the war. He told his intelligence chief, General Frantisek Moravec, to order an intensification of resistance activity. But it was difficult enough to get even a parachuted courier or coded radio message past the wary Heydrich. Nothing happened in response.

Then President Benes hit upon the idea of contriving to assassinate a prominent Nazi or Quisling inside the tight dungeon of the Protectorate; such a bold stroke would refurbish the Czech people's prestige and advance the status of their government in London. The German retaliation would be brutal, of course, but its brutality might serve to inflame Czech patriotism.

Who should be the target? General Moravec first nominated the most prominent of the Czech collaborators, an ex-colonel whose fawning subservience to his Teutonic masters left the London Czechs nauseated and ashamed. The general also had a personal reason for his choice: the name of the Czech Quisling was Emanuel Moravec, a coincidence that had plagued the general for years. But Emanuel, called the Greasy, was not the right man for the purpose. He was not well known abroad, and Czech prestige would not be raised significantly by crushing a worm. The Germans, too, were likely to regard his death as no great loss; he was only a minister of education, easy to replace, and even the Nazis despised traitors.

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Heydrich was totally different. His unique combination of brilliance and brutality had no peer even in the Third Reich. He had been personally responsible for the execution of hundreds of Czechs and the imprisonment of thousands. The shot that killed him would be heard in every capital of the world. There could be no other choice. General Moravec so recommended, President Benes agreed, and the planning of Operation Salmon began in tense secrecy.

Wanted: Men for Martyrdom

The first problem was finding one or two men who could and would do the job. It must have seemed to General Moravec, at least at the outset, an almost impossible task. The many Czech politicians in London were preoccupied in the unending scramble for posts in the provisional government. There were quite a few Czech businessmen in England, but most of them were too busy making a fast *koruna* to be interested. There were brave and patriotic Czechs serving in fighter and bomber wings attached to the Royal Air Force, but the Air Ministry would never let them go. And so the choice narrowed to the single infantry brigade of about 2,500 men encamped near Cholmondly.

This pool of prospects had its own disadvantages. An encampment of 2,500 is like a town of that size: everyone knows everyone else and is full of curiosity about everything that anyone does. Here this inquisitiveness was also undissipated by outside contacts, the Czech soldiers speaking little or no English and having few interests beyond the limits of the camp. Each transfer, trip, or trifle thus became news, something to discuss and analyze.

For screening purposes the personnel files of the brigade contained only what each man had told about himself or, in rare instances, about others whom he had known earlier, at home. There was no way to check police files, run background or neighborhood checks, or otherwise obtain independent verification of loyalties. Under such circumstances it is a tribute to General Ingr, Minister of Defense in the exiled government, to General Moravec, and to their subordinates that of 153 parachutists flown from England and dropped into Czechoslovakia, only three proved turncoats.

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How many people would have to know? President Benes, General Ingr, General Moravec and his deputy, Lt. Col. Stragmueller, and Major Fryc, chief of operations. Of these, President Benes and General Ingr needed to know only the purpose of the operation and the names of the men chosen to carry it out. Others, required for instruction, would necessarily know that certain men were entering Czechoslovakia to carry out a clandestine action, but not their precise intent. Four instructors would be needed, experts respectively in parachute work, in the terrain of the area, in cover, documentation, clothing, and equipment, and in commando techniques.

Several British officers, representatives of MI-6, would participate in this training. The crew of the plane carrying the men into Czechoslovakia would know where and when they were going, though not their identities or mission. And finally, a large number of men in the brigade personally acquainted with the candidates could be expected to make guesses of varying degrees of accuracy as the preparations for assassination progressed.

Because the number of persons who would be partly or fully informed was so unavoidably much too large, it was essential that the men finally chosen should be as discreet as they were brave. Of the 2,500 Czech soldiers in the brigade some 700, most of them volunteers, were already engaged in parachute training under British instruction. Two officers were assigned to the brigade, one to the parachutists and the other to the ground troops, ostensibly as aides but actually as spotters. These two officers knew only that they were to choose the best candidates for a dangerous assignment.

Men recommended by the spotters were interviewed singly by Lt. Col. Stragmueller. Some were asked whether they would volunteer for special training. Almost all those asked agreed, and they were sent in groups of ten for vigorous physical conditioning and thorough schooling in commando tactics—the use of a wide assortment of small arms, the manufacture of home-made bombs, ju-jitsu, cover and concealment, and the rest. During this intensive drilling the ten-man teams were kept under close observation. It was essential to discover not only the bravest and most capable but also—it having been decided that the assassination was a two-man job—

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those who worked best in pairs. Other considerations also came into play; men from Prague, for example, were automatically eliminated because of the danger of recognition after arrival.

By now the choice had narrowed to eight men in half as many groups. General Moravec visited these four groups, along with all the others, on a regular schedule. On his orders the instructors drew the eight candidates aside one at a time and passed each a piece of juicy, concocted information with the warning not to mention it to anyone. Each tidbit was different. Soon two new rumors were circulating, and two men were eliminated. One of the remaining six was disqualified by marriage; another was suddenly incapacitated by illness.

General Moravec interviewed the remaining four. Two of them, non-coms, met all tests and were also good friends. Their names were Jan Kubis and Josef Gabcik. Kubis was born in Southern Moravia in 1916. After some ten years of schooling he had gone to work as an electrician. He had been in the Czech Army since 1936 and had fought in France in 1940. His excellent physical condition made his 160 pounds, at 5'9", look lean. Slow of movement, taciturn, and persevering, he was also intelligent and inventive.

Gabcik was a year younger than Kubis. An orphan from the age of ten, he too had left school at sixteen. After working as a mechanic for four years, he had entered the Czech Army in 1937. He had been given the Croix de Guerre in France in 1940. He was strong and stocky, an excellent soccer player, and like Kubis lean for all his 150 pounds on a 5'8" frame. His blue eyes were expressive, and his whole face unusually mobile. Talented and clever, good-natured, cheerful even under strenuous or exasperating circumstances, frank and cordial, he was an excellent counterpoise for the quieter, more introverted Kubis.

Both men had gone through the arduous training without illness or complaint. Both spoke fluent German. Both were excellent shots. General Moravec spoke separately to each of them. He explained that the mission had the one purpose of assassinating Heydrich. He stressed to each of the young men the great likelihood that he would be caught and executed.

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Escape from encircled Czechoslovakia after Heydrich had been killed would be practically impossible. And the survival of either, hiding inside the country until the war ended, was extremely unlikely. The probability was that both would be killed at the scene of action.

Although neither man had relatives or friends in Prague, both had relatives in the countryside; and the general reminded them of what had happened to the family of a Czech sent from London on a successful clandestine mission to Italy. Somehow the Gestapo had learned his identity and executed all of his relatives in Czechoslovakia, even first and second cousins. "Please understand," General Moravec told each of them, "that I am not testing you now. You have proved that you are brave and patriotic. I am telling you that acceptance of this mission is almost certainly acceptance of death—perhaps a very painful and degrading death—because I do not believe that the man who tries to kill Heydrich can succeed if the awful realization that he too will die comes too late, and unnerves him. I have another reason, too: if you make your choice with open eyes, I shall sleep a little better."

First Gabcik and then Kubis agreed, thoughtfully but without hesitation or bravado. Both were quietly proud to have been chosen. The general then brought them together and explained that from that moment on they would be separated from all the rest, the final preparations would be made in strictest seclusion. If at any moment either man felt that he could not go through with the assassination, he was bound in duty and honor to say so immediately, without false shame.

They glanced at each other. "No," said Gabcik. "We want to do it." Kubis just nodded.

Dress Rehearsal and Curtain Up

Some training was still needed. Kubis had to learn to ride a bicycle. Both had to know Prague as though they had spent years walking its streets and alleys. Both needed instruction in withstanding hostile interrogation. Both had to memorize all the details of separate cover stories which could be "confessed," after initial resistance, to the Gestapo. On the last day of training they were each given a lethal dose of cyanide and told how to conceal it on their persons. It was the last defense against torture.

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"One more point," General Moravec told them. "Under no circumstances—and I mean none at all—is either of you to get in touch with the underground, directly or indirectly. You are absolutely on your own. The underground is infested with informants; Heydrich has done his usual masterful job. For this reason we have not sent out one word about you, even to the most trusted leaders there. If anyone approaches you and says that he comes from the underground, he is a provocateur. Treat him as such."

The men nodded.

"Don't forget," the general insisted. "And now, a review. Kubis, where does Heydrich have his office?"

"Prague Palace."

"Show me on the map."

Kubis did so without hesitation.

"Gabcik, where do you land?"

"Here, sir," said Gabcik, pointing to another spot some 50 kilometers southeast of Prague, an area chosen because it was wooded, rolling, and offered good approaches to the city.

"Kubis, what do you do first, after touching ground and removing parachutes?"

"We destroy all traces of the descent, sir."

"Do you proceed to the palace, Gabcik?"

"No. It is too heavily guarded. All visitors are thoroughly checked."

"His private residence?"

"The same, sir."

"Kubis, where do you go?"

"Here, sir." Kubis' finger pointed to a spot half way between Prague and the village of Brezary.

"Gabcik, when does Heydrich pass this spot?"

"Daily, sir, going into the city, and at night on his return. We shall observe the time."

"Why have we chosen this particular spot on the road?"

"Sir, there is a sharp curve. His car and the motorcycles must slow down to twenty kilometers."

"How many motorcycles, Kubis?"

"Probably two, sir. We'll find out."

"Good. Now remember—don't rush it. Don't use pistols in any case. If there is any chance that you can't bring it off with the bomb or the machine gun on first try, wait and pick

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a better spot for the next day. But don't delay too long. Now, a last dry run."

The two men left. General Moravec waited for ten minutes, summoned his car, and asked to be driven down a certain country road at normal speed. He sat in the back, with binoculars, closely scanning all the foliage and other cover wherever the car slowed for a curve. Then he drove back and waited. Soon Gabcik and Kubis reappeared.

"Well?" the general demanded. "Did you kill me?"

"Yes, sir."

"Are you sure?"

"Yes, sir."

"Good."

The escape was planned with equal care. The men would make their way, mostly on foot, to Slovakia, where the German pressure was far less severe. Gabcik, who knew the mountains of Slovakia well, had chosen a safe area where none of his friends or relatives lived. For food they were on their own.

Early April was all fog, wind, and rain. Normally Czech, Polish, and Canadian crews took turns flying paratroopers over Czechoslovakia, but General Ingr had made sure that a Czech team, Captain Anderle and his crew, would be rested and ready for a good day. The fifteenth, at last, dawned clear and still. General Moravec walked to the plane with his two chosen men. They stood at the bottom of the ramp. He looked at them, and they at him, in silence. No speeches, no cheek-kissing, no wet eyes. Gabcik and Kubis seemed as impassive as two farmers starting the day's work. They shook hands briefly.

The general went into the plane and briefed its captain and crew. When he came out, he found Gabcik suddenly flustered. "Sir, may I speak to you for a moment in private?"

So, the general thought sadly. Well, better for it to happen now. We shall have to send him to the Isle of Man until the war ends. "Of course, Gabcik," he said, and moved some yards away.

Gabcik followed, uncomfortable. He said, "Look, sir, I don't know how to tell you this, I'm ashamed. But I have to tell you. I've run up a bill at a restaurant, the Black Boar. I'm

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afraid it's ten pounds, sir. Could you have it taken care of? I hate to ask, but I haven't got the money, and I don't want to leave this way."

"All right," Moravec managed. "Anything else?"

Gabcik was relieved. "No, sir," he said, "except don't worry. We'll pull it off, Kubis and I."

They climbed in, then, and the plane started down the runway. The general thought of all the courageous men he'd known. "No," he said out loud. "None of them were braver." He felt full of pride and pain.

Death Rides in Spring

Captain Anderle came back on schedule. He reported that the two men had teased his crew about having to go back to the strangeness of England instead of coming home. At the command they had jumped unhesitatingly.

So the waiting started. Gabcik and Kubis had not taken a transmitter or any means to report back: if they were successful everybody would know it. None of the anxious witting talked about the operation. On the tenth day Captain Anderle was shot down and killed in an air battle at Malta. "I am not a superstitious man," General Moravec told himself.

Two weeks, three weeks, four. It must have gone wrong. "If they failed," said General Ingr, "let us hope they failed completely, without getting anywhere near Heydrich."

Six weeks, and May 29, Friday afternoon. Prague radio, indignant, reported that Reichsprotektor Reinhard Heydrich had been severely wounded by murderers in a criminal, dastardly attempt upon his life that very morning. They had thrown a bomb into the Protector's car. Two men had been seen leaving the spot on bicycles. The search for them was under way. They would be found.

The news exploded in the international press. At home and abroad, Czechs stood a little straighter. Several "authentic inside stories" were printed. The favorite was that the Czech underground had struck. Scarcely less popular was the tale that the Abwehr had killed Heydrich because of the humiliating agreement he had just forced Canaris to sign.

At Cholmondy the brigade buzzed. The absent Gabcik and Kubis were talked about, of course; but they had been gone

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for a long time. And so had many more paratroopers dispatched on one mission or another. There was no reason to pick out these two over others who had never returned. Lieutenant Opalka, for example. He had been gone for five months now. And three men had left the camp just a week before Heydrich was killed.

The battalion talked of little else. One sergeant, a little older than the others, was convinced that the man who took care of Heydrich was a non-com named Anton Kral.

"Kral?" repeated one of the others. "Why Kral? He's been gone as long as Opalka."

"I don't know," the sergeant answered. "It's just a feeling. Remember how tall and dark he was, and silent?"

"And brave," said another. "He fought well in France."

"Well," shrugged a third, "it could be anybody."

Perhaps the sergeant knew more than the others about Anton Kral. Kral had been picked by General Moravec to be parachuted with Lieutenant Opalka into an area northeast of Prague. Their mission was to get in touch with the underground there to deliver instructions. Nothing had been heard from either of them since their departure, and they were presumed lost.

In Prague, Heydrich was dying. The three physicians summoned from Berlin—Gebhardt, Morell, and Brandt—tried hard, but could not save him. Himmler was there too, full of public sorrow, privately perhaps rejoicing. He had his funeral oration down pat before the sixth of June, when Heydrich died. And he seized the chance to direct personally the search for the assassins and the massive reprisals.

First, martial law was proclaimed over all Bohemia and Moravia. A rigid daily curfew at sundown was imposed. Throughout the land public announcements proclaimed that anyone who harbored the assassins or otherwise aided them in any way would be executed summarily and without trial. The illegal possession of arms and even approval of assassination in principle were declared capital crimes. Himmler's chief executive in the subsequent action was the notorious Sudeten German, Deputy Reichsprotektor Karl Hermann Frank.

The mass arrests and mass executions began. Czechs were killed without investigation, without trial, even without in-

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terrogation, usually on the basis of some vague or distorted denunciation. For twenty days the slaughter continued. But neither terror nor the special Gestapo details dispatched to Prague could bring the assassins to light.

Then Himmler and Frank had a new idea. Quite arbitrarily they chose a small settlement near Kladno, fifteen miles from Prague. On 9 June Colonel Rostock marched a military detail into this village of the now memorable name, Lidice. Every male not unquestionably a child was slaughtered. Even the few who chanced to be absent were run down and killed—two hundred men and boys in all. The women were driven into concentration camps. The children were shipped off to Germany. Everything above ground, all structures, were razed, and the ground was ploughed. Lidice became a blank, a field of regular brown furrows.

And still there was no trace of the killers of Heydrich. So they did the same thing to another hamlet, Lezaky, in southwestern Bohemia.

The killers were not found.

On 24 June Frank officially announced that if the assassins were not turned over in 48 hours, the population of Prague would be decimated. He also used a carrot—1,000,000 marks for anyone giving information leading to the death or capture of the wanted men. This worked, apparently. On 25 June Radio Prague reported that the culprits had been discovered in the basement of the St. Bartholomeus Orthodox Church on Reslova Street. Encirclement was under way and capture only a matter of hours. In London the listeners knew that Gabcik and Kubis were fighting back.

The following day the radio said the fight was over; the assassins were dead. There were four of them, the announcer said flatly, one Gabcik, one Kubis, a certain Opalka, and a man known as Josef Valcik.¹

In England Opalka was known, of course. So was Valcik, a reliable member of the Prague underground. But what were they doing in the same cellar with Gabcik and Kubis, sharing their hopeless last stand? General Moravec, at least, felt cer-

¹ There are conflicting records of this name; the *New York Times* gives Walickoff.

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tain that his men would not have violated his orders and made contact with the underground. And no word had gone to the underground about Gabcik and Kubis.² Perhaps the two teams had met by chance at the church, driven to the same sanctuary because the priests were known to be patriotic and because all four were desperate.

Even now the Nazis went on murdering. The paralytic SS General Kurt Daluge succeeded Heydrich. During the trial that preceded his execution in Prague in 1946, he admitted that 1,331 Czechs were executed, 201 of them women, in reprisal. From another source it has been established that during this period 3,000 Jews were taken from the Terezin ghetto and exterminated. No one knows how many died in concentration camps. A sober estimate is that at least 5,000 Czechs were killed to avenge the death of one murderous Nazi. Among them were all the priests of St. Bartholomeus, not one of whom would say a word about their guests.

Was It Worth This Price?

In London the jubilation of the Czech leaders gave way to doubt as the murderings continued, and then to recrimination. At first President Benes would have none of it. He listened to Radio Prague as day after day, and several times a day, the numbers and names of the executed were methodically announced. "Why don't they fight?" he asked his staff. "Why don't they die as partisans and men, in the forests and the mountains, taking as many Germans with them as they can? Look at the Poles, the Yugoslavs, the French. They

² In an unpublished manuscript, *War Secrets in the Ether*, Wilhelm F. Flicke asserts, "The attempt upon the life of Heydrich had been planned and directed over [the Czech underground to London] network. That was a big mistake on the part of the English and Czechs because it afforded the German radio defense a complete disclosure not only of the plot itself and those directly participating but also of all the connections within the Czech resistance movement." This statement is almost wholly wrong. It is true that Heydrich and his spies had penetrated the Czech underground thoroughly. But radio was not used for Operation Salmon, and the network inside Czechoslovakia had no hand in planning or directing Heydrich's assassination. The Germans had no advance warning. And it was not merely an "attempt"; Gabcik and Kubis did kill Heydrich.

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don't line up at the scaffold, waiting patiently like sheep." He was unmoved by arguments about the terrain, the proximity of France to England, the density of the population in Bohemia and Moravia. "Why don't they fight?" he asked again. "It's their duty." Whatever the answer, it was plain by now that one of the hoped-for results, the stiffening of the Czech will to resist, had not been achieved.

In Czech political circles the intensity of criticism mounted in direct ratio to the mounting toll of German reprisals at home. Although President Benes remained privately convinced that the execution of Heydrich had been both justified and necessary, he began to feel a need for modifying his views publicly. He reacted to the pressure, finally, by announcing that General Moravec had planned and supervised the assassination; and the accusations of irresponsibility from the political group were turned on the intelligence chief. Those who had lost relatives and friends at home were especially bitter.

As the war went on, General Moravec found that his mind would not stop mulling over the profound questions of right and wrong that attend all action but become sharpest, most nagging, when the action has terrible consequences for others. There was no doubt that the killing of Heydrich had served its intended prestige purpose. In this sense it had been a major success. For a time, at least, Czechoslovakia had jumped from last place to first in the esteem of all the anti-fascist world. Even the suffering of the people, even Lidice and Lezaky, served this cause. But the aim of awakening resistance had been a mirage. The people were not fighting, were not earning the acclaim. They would be remembered as martyrs, not heroes, even though there were heroes—Gabciks and Kubises and Opalkas—among them.

Who had killed these 5,000 civilians? The Germans? General Moravec himself? The civilians at home, inviting slaughter with their meekness? As the toll of war dead mounted into the millions, the 5,000 shrank to perspective and seemed almost insignificant; the war killed thousands every day, women and children as well as soldiers. Yet right and wrong are not a matter of quantity. The same questions would have come whispering in his ear at night, like old ghosts,

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if only the brave assassins had died because of Reinhard Heydrich's death.

Modern war, total war, kills everyone indiscriminately; women and children drop as fast as soldiers. Millions were dying to destroy the German instruments of war. And clearly Heydrich had been one of the most effective of those instruments. When Hitler escaped the twentieth-of-July bomb in 1944, the general wondered whether the German anti-fascists would have been able to strike even this unsuccessful blow if Heydrich had been alive to trap them before they could act. Was it wrong to have assassinated Heydrich and right to try to kill Hitler? No one who believed that fascism had to be destroyed felt anything but admiration for the Yugoslav partisans, the French Maquis, the brave Norwegians and Poles—for all the people who fought and killed Germans. The Czechs at home were not fighting, so the Czechs abroad had to do the job for them.

It might have been wrong if the target had been the one he first considered, Emanuel Moravec. This would have had the taint of personal motives. But there was no such taint in the assassination of Heydrich, and it had the official and unqualified approval of President Benes. Of course, the general thought wryly, I cannot proclaim this fact today. It is the duty of subordinates to step back when their plans succeed and come forward into the limelight if their plans fail.

Finally, before the war ended, the self-questioning, the drilling inside, apparently hit bed rock. General Moravec found a firm position, he later explained, in the truth that no one ever gets something for nothing. If Czechoslovakia had rejected the Chamberlain capitulation at Munich, a real underground would have been born of its thus-affirmed integrity. Men must die that countries live. If enough of them die at once, the country may be lucky enough to coast for a few generations. But coasting builds no muscles. The cost of the free ride is strength, and the cost of sapped strength is freedom. So in the last analysis you have to kill a Heydrich not because he needs killing but because coasting along with his kind will kill you and everybody else.

By the time the war was over, General Moravec felt sure that the assassination of Heydrich was not a sombre page of

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history. It was a page that he could turn back to with satisfaction, he and his countrymen and all the rest of us. Turn back to, read again, and know that it was right.

Dregs of the Bitter Cup

At last the war ended, and General Moravec went home to Prague. Everywhere in the city was a kind of gladness; it was over now, and all were thinking of the future. Everywhere, it seemed, except at General Moravec's home, where the callers apparently could not forget the past. They asked why their fathers and mothers had been executed. They wanted to know if the former general still thought he'd done the right thing. His doubts returned. These people saw him not as the executioner of Heydrich but as the killer of their kin. This post-war period in Prague, he said later, was the most miserable of his life. The men who, now that the war was over, called themselves the leaders of the underground also came to ask questions and pronounce judgment. They said that the Heydrich operation was conceptually faulty. They said they should have been consulted in advance, they never would have permitted so blatant an error. The general asked them to give a detailed account of their underground activities and a signed estimate of their contribution to the war against fascism, and they went away.

One day a different caller came. He said that the traitor who delivered Gabcik and Kubis to the Gestapo had been discovered and interrogated. He had confessed to a revolutionary tribunal, but he stubbornly refused to give details. His name was Alois Kral.

Kral! So the general's careful choice of men had produced two heroes, and one villain to seal their fate. He put on his coat; he would visit the man in prison and talk to him. He recognized Kral as soon as he saw him; the four full years had not changed him. Tall, swarthy, taciturn, he squinted up at Moravec and said, "Greetings, brother."

"Brother?"

"I killed two Czechs. You killed five thousand. Which of us hangs?"

So it went throughout the questioning. Kral kept most of his secret to himself, not to save his neck but because he

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knew he couldn't. Besides, the revolutionary tribunal was not predisposed to patient inquiry. It consisted of one professional lawyer and four lay judges on the bench, a prosecutor, and a defense attorney appointed ex officio. All of them had been chosen by the Citizens' Committee, which in turn was dominated by the Communists. Each actor in the play had memorized his part, knowing that the function of the court was not to serve justice but to kill Kral. The hand-picked audience was fanatical, a lynch mob. Neither actors nor spectators cared about the fate of Gabcik and Kubis; they were all preoccupied with the million marks Alois Kral had collected for his act of betrayal. While their closest relatives and friends were dying and they themselves were suffering, Kral had been living like a king. There was the unforgivable crime—not murder or treachery, but his comfort in the midst of their pain.

In France Kral had fought well. In England he could not have been serving as a German stool-pigeon, because two operations he knew enough about to wreck had been successful. There was even evidence that he had not betrayed Lt. Opalka to the Gestapo, or any of his underground contacts. Why had he turned traitor at the end? General Moravec went to see him several times. The best he could get was a fuller record of events.

Kral said that Gabcik threw the bomb, Kubis covering with the machine gun. Then the two rode their bicycles straight to the church, where they were given sanctuary. The presence of Lt. Opalka and Valcik was accidental. The four hoped that the storm would subside, and when the intense searching was called off they could escape to Slovakia. Kral hinted that he found out about the fugitives from a prostitute; he was vague at this juncture.

"But why did you tell the Nazis?" asked the general.

"Maybe for the million marks," said Kral. "Or maybe I thought it was better that two men die than two thousand. What does it matter?"

At the church, the Gestapo had shouted to come out, to surrender. The men answered with the machine gun, and later with their pistols. The cellar of the two-hundred-year-old church was a fortress not to be breached or taken by

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storm. Finally the Germans flooded it. It was then that all four men, out of ammunition and near drowning, swallowed their cyanide. The Gestapo officers reported the great victory. Alois Kral was paid his million marks and lived in luxury for three years.

The next morning General Moravec got up early. He wanted to have a last talk with Kral and get the rest of the story, how Kral found out and why he informed. But before he could leave the house a member of the Citizens' Committee, a leading Communist, came to see him.

"Let's have a little chat," the visitor said, removing his coat.

"I was just leaving."

"It's no use," said the Communist, sitting down and lighting a cigarette. "We've given orders that you're not to be admitted at the jail any more."

"Why?"

"Why do you want to talk to Kral? You have no status in this matter."

"I want to find out the truth."

"We know what you want. You want to keep your glamorous story of the Heydrich case alive. Don't try to pretend that you care about Gabcik and Kabis, or whatever their names were, or Kral either. You just want people to believe that your so-called government in London was a band of heroes and patriots. You're not getting away with it. Keep away from the jail, or we will let you in. There's still room."

The general did not say anything.

"And stop sniffing around trying to get records and names of other people to talk to." The visitor got up. "In fact, former General Moravec, it would be a very fine idea for you to get out of here. I think we understand each other?"

"I understand you," the general said. "Good day."

He knew it was no use to go to the jail, but he did anyway. He was turned away so rudely that he was surprised to be admitted to the trial. It lasted about five minutes. Gabcik and Kubis were scarcely mentioned; Kral was tried and condemned for collaboration with the Gestapo. It was a marionette show. But just at the end an impromptu line brought it momentarily to incongruous life.

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"Why did you do it?" the chief justice recited. "For their rotten German marks?"

"One million of them," Kral retorted. "How much are the Russians paying you?"

They killed him, of course; General Moravec watched the execution. He could not help thinking that Kral was dying for the wrong reason—not for his crime, but for Communist ends. Maybe that's really what keeps bothering me about Heydrich's death, he reflected. Did we kill him and trigger 5,000 other deaths in a just cause, or out of political ambition? Is any human motive ever untainted?

At least the two who did the killing, Gabcik and Kubis, came close to purity of motive. They had been healthy young men, not born martyrs in search of death. They had not killed for pride, greed, envy, anger, or ambition. They had killed like dedicated surgeons removing a cancerous mass. They must have felt deeply that the play had to unfold and that their business was not to choose the actors or criticize the choice of theater but only to play their ordained parts as best they could. Of all forms of courage, theirs was the highest because it is the most humble.

As he walked away, General Moravec met the Communist functionary who had forbidden him to visit Kral.

"Will you please tell me where Gabcik and Kubis are buried?" he asked politely.

"Nowhere," came the sardonic answer. "There are no graves. You foot-kissers of the British are not going to have that excuse to build a statue and hang wreaths. Czech heroes are Communists."

General Moravec felt tired. There were more Heydrichs than a man could destroy. Fascist Heydrichs died and Communist Heydrichs took their places and there was no end to it, as long as people coast.

Some day, perhaps, the wheel would turn and Czechs would grow strong again, and be free to remember the strength of Josef Gabcik and Jan Kubis.

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The assignment of an interpreter with slightly ulterior motives for selected international visits yields a net gain.

THE INTERPRETER AS AN AGENT

Francis Agnor

The rather obvious time-honored practice of using interpreters assigned to international exchange delegations as intelligence agents (or, conversely, of getting intelligence personnel assigned as interpreters) has both advantages and disadvantages. If the interpreter makes the most of his intelligence mission, however, and observes some common-sense rules of behavior, there can be a net advantage both in the direct yield of information from such an assignment and in the improvement of an asset in the person of the interpreter. The advantage in immediate information is likely to be limited; the improvement of personal assets can be considerable.

In discussing these advantages we shall assume that the interpreter can be given adequate intelligence training and briefing (or that the intelligence officer is competent as an interpreter, and not compromised). We shall ignore the technical aspects of the interpreter's art and the occupational diseases, nervous indigestion and undernourishment, contracted in his attempts to gulp food while translating banquet conversations. We shall examine his domestic and foreign assignments separately: the advantages and disadvantages of assignment at home and abroad often coincide, but there are also important differences.

Gains on Home Ground

Let us look first at the domestic assignment, where the interpreter is on his own native soil, attached to a group of foreign visitors or delegates. As the communications link between the visitors and their strange surroundings, he possesses a strong psychological advantage in his available option to confine himself strictly to the business portions of the trip, leaving the visitors to fend for themselves in their spare time. Even if they have their own interpreter along, there are a

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number of matters—shopping, local customs, the availability of services—in which it would be convenient for them to have his help.

Recognizing their dependence on his cooperation for the smooth progress of their visit, they will usually do their best to establish, if not a cordial friendship, at least a good working relationship. A great deal depends on the interpreter himself, of course, but normal friendly overtures on his part will usually be met at least half way by the visitors. Just by being relaxed and perhaps willing to do a small extra favor here and there, he can become accepted as an indispensable member of their family group. An excellent way to break down reserve and promote a free exchange of ideas is to invite the group to his home. (It does *not* pay for him to be so obliging that he becomes a valet, and it is advisable to establish this principle early in the game.)

Continued friendly gestures are likely to result in time in the establishment of a genuine rapport, with its attendant benefits. If the interpreter is knowledgeable in the field of the official discussions which he is interpreting, he can clarify in private discussions with the visitors some of the ambiguous or contradictory statements made during the official talks. Without appearing too curious or asking too many questions of intelligence purport (he should be particularly circumspect at the outset of a trip, when his bona fides is subject to greatest suspicion), he will sometimes be able to get definitive statements in private which are lacking in the confusion and interruptions of official discussions. It is here that he may bring to bear his training or natural bent for elicitation, whether for official purposes or for his own education.

At the same time the interpreter himself is the target of numerous questions which reveal both intelligence and personal interests on the part of his charges. Their intelligence questions may indicate gaps in their own service's information, and their personal ones are more broadly useful in showing the preconceived picture of this country that the visitors have brought with them. Although they often realize that their questions betray a lack of sophistication, they are willing to sacrifice dignity to satisfy their burning curiosity. Honest, natural answers, despite the apparent rudeness of some

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of the questions ("How much do you make? How much are you in debt?"), strengthen the interpreter's position and may lead to even more revealing questions. If the visitors are from a controlled society the very opportunity to put certain kinds of questions is a luxury they cannot afford at home. And when one of them is alone with the interpreter he often shows eagerness to ask questions of a kind not brought up in group discussions.

In all these discussions the interpreter is gaining knowledge which no academic training can give him. First, he is given a glimpse of his own country through the warped glass of foreign misconceptions and propaganda. The image will not be fully that which hostile propagandists have sought to fix, but it will show where they have succeeded and where they have failed. Second, he learns how to get ideas across to these representatives of another culture, learns where he must explain at length and where he can make a telling point in just a few words. Finally, as a sort of synthesis of his experience, he can arrive at some conclusions concerning the visitors' inner thought processes, often quite alien to his own.

In addition to gaining these insights, the interpreter makes what may prove to be useful contacts in future assignments. How potentially useful depends on the spirit in which he parts company with the visitors, but anything short of outright hostility is likely to make them of some value.

Drawbacks and Limitations

The chief disadvantages of domestic assignment for the agent-interpreter lie in the shallowness of his cover. Visitors from Communist countries, in particular, start with a strong presumption that any interpreter is at least working hand in glove with local intelligence or security groups if he is not actually a member of one. The barrier thus imposed in the initial stages of a trip may break down as rapport is established, but there always remains a lurking suspicion that the interpreter is not what he seems, and the visitors are always on guard against the slightest hint of prying or propaganda. Furthermore, they collect a large file of biographic information on him in the course of their association, material which is certainly delivered to their own security forces. Matching

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this up with some earlier trace they may have of him may blow his organizational connections.

Another limiting factor is that foreign delegations, particularly from Bloc countries, are drawn from the elite and so not typical of the peoples they represent. The impressions the interpreter receives concerning their beliefs and feelings may not be applicable to their countrymen at home. Though the delegation members may not be as orthodox abroad as on their home ground, where conformity is obligatory, they have a more compelling stake in the regime than the average citizen.

The last disadvantage to be noted depends in large part on the capabilities and limitations of the interpreter himself. It lies in the difficulty of retaining facts and figures in one's head while performing the complicated task of translation. It is possible to store in one's mind only a limited number of figures before the whole delicate structure of memory disintegrates into a jumble of confused statistics which are of no use to anyone. While it is permissible to take notes during long speeches where it is obviously impossible to remember everything said between pauses, this device is not appropriate for short conversations. If the interpreter is caught frantically scribbling notes immediately after a visitor has casually let drop the annual production of some electronic gadget, his usefulness to intelligence has largely evaporated. Furthermore, he has pinpointed an area of intelligence interest. A dash to the toilet after some particularly significant slip on the part of a visitor can sometimes provide privacy for note taking, but too frequent use of this dodge excites embarrassing commiseration or, more often, suspicion.

On the Opponent's Home Field

The foreign assignment differs in many respects from the domestic. On the profit side, in addition to getting the same positive intelligence take as the domestic interpreter, the interpreter abroad can be an observer, reporting on things which have nothing to do with his linguistic job. If he has had proper training, such observations can be quite valuable. Furthermore, he can acquire a feeling for the country and a sense of what intelligence activities can be undertaken and what cannot. He may, for example, attempt photography in areas on the borderline of legitimacy just to test reaction, or take

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a stroll before going to bed in order to check surveillance patterns. If he is an area specialist, the trip provides an education which no amount of book learning could give. He confirms certain of his preconceptions while discarding others, and he returns with a far more solid grasp on his specialty than he had previously. The confidence thus gained from first-hand experience is a very valuable asset if he is to be involved in operations against the country in the future.

On the negative side we find all the disadvantages noted in the domestic assignment: the interpreter accompanying a delegation abroad is, if anything, under sharper scrutiny as a probable agent, and should be prepared for a more or less clandestine search of his baggage; his memory is still strained to hold on to useful data; his official foreign contacts are the most loyal stalwarts of the regime; his digestion deteriorates. In addition, he finds himself a prisoner of his cover profession. Whereas the foreign delegation's dependence on him during his domestic assignment led to enlightening discussions, his own party's need for his help, not only on official matters but on everything that requires communication during every waking hour, now obliges him to spend *all* of his time with his own countrymen. He becomes a communications machine, unable to introduce any of his own ideas or queries into the conversations. Contacts are pretty well limited to those which the hosts have thoughtfully provided for about eighteen out of every twenty-four hours, and a delegation of six-foot Americans accompanied by watchful hosts is not the sort of group which a dissident member of a closed society is likely to approach in order to unload his true feelings about the regime.

Finally, even the diffident admissions of ignorance implicit in questions put to the interpreter on his own home ground are lacking when he goes abroad. Particularly in Communist countries the officials he contacts need to show that they have not been contaminated by his ideology; each tries to out-party-line the rest, less as an effort (usually counter-productive) to influence the visiting delegation than as a demonstration of his own orthodoxy for the benefit of his comrades. This compulsion precludes any serious discussion about either the hosts' or the visitors' country. During such exhibitions of chest-beating the interpreter is put on his mettle to hold his temper

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and restrain himself from active participation in the conversation.

Criteria and Other Considerations

From the foregoing we may conclude that the principal intelligence value of the domestic assignment lies in the psychological field—exploration of mental attitudes, blind spots, thought processes, strength and weakness of beliefs—whereas the value of the foreign assignment derives from first-hand experience in the country and from the collection of observable operational and positive intelligence. It is perhaps unnecessary to warn that the interpreter can *not* fulfill the classic agent roles of recruiting spy nets, agitating for revolution, or personally stealing the master war plans. He will pay his way by less dramatic acts.

Here are some of the factors that should be taken into consideration in recruiting an interpreter for an intelligence mission or utilizing an existing intelligence asset in interpreter capacity. First, it must be borne in mind that almost any interpreter will be the target of intense scrutiny by the opposition, particularly in Bloc countries. The prevailing political climate today, however, is such that the interpreter's official position as part of a delegation protects him from arbitrary arrest, except perhaps in Communist China. The rest of the Bloc is so committed to East-West exchanges that it would not jeopardize the program for one rather insignificant intelligence fish.

Second, the interpreter should not be the only briefed member of the delegation going abroad. As we have shown, the interpreter has his hands full with his official duties and has little opportunity for taking notes. The official delegate, however, has good opportunities and excellent cover for taking notes. In addition, being presumably an expert in the field of the discussions, he can recognize significant material better than the interpreter.

Third, the size of the delegation is an extremely important factor affecting the usefulness of both domestic and foreign interpreter assignments. A delegation of more than six or seven people imposes such a burden on the interpreter that he has no time for an intelligence mission. He is kept con-

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tinually busy rounding up strays, making travel reservations, getting people settled in hotels, and generally playing nursemaid. The best possible delegation would consist of one very lazy man who neither demanded nor rejected the presence of the interpreter.

Finally, the itinerary itself must be considered. On domestic assignments the most important thing is a relaxed schedule which will give the visitors enough spare time to observe their surroundings and ask questions about non-official matters. On the foreign assignment perhaps the most important consideration is the previous accessibility of the areas to be visited. If the area is completely off the beaten track or had previously been closed to foreigners, there is excellent reason to employ a trained observer as interpreter. Even the standard tourist trips, however, may provide useful information if the interpreter is alert.

This paper has been oriented primarily towards the interpreter-agent question as it obtains in visits to or from the Soviet Bloc, but many of the same factors are valid for neutralist or uncommitted areas. With the steady increase in cultural and professional exchanges among most countries of the world, opportunities for placing interpreters have also expanded. The expansion is not only making more experience and training available but is affording better cover for interpreters with intelligence objectives. Perhaps more of them should be given such objectives, despite the drawbacks we have noted.

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Anatomy of a scientific bag of tricks to conjure up the likeness of an unknown face.

THE IDENTI-KIT

Herman E. Kimsey

One of the most difficult problems in human communication is that of exactly duplicating in another mind the visual image one has in one's own. Language is not adequate to the job: the range of variant concepts corresponding to each descriptive word, not to mention their inevitable emotional and imaginative colorings, create inaccuracies, distortions, and downright false impressions. Man has therefore had to resort to comparing such an image or its elements with accepted common physical standards, which reach their ultimate precision in the standard units of measurement. This procedure leaves no room for the vagaries of individual interpretation.

This communications problem has always been particularly acute between the describers of absent persons and those whose job it is to identify the subjects described—notably the police—and the identification world has therefore been using for more than a hundred years some system of comparing individual characteristics with physical standards. The rather startling Identi-Kit herein presented, which provides a set of such standards, must then be considered the product of a development and evolution whose basic principles have been thoroughly proven. The Kit itself is no untested or controversial invention: it has withstood continuous testing and retesting for the past five years in both experimental and practical on-the-job applications.

The Identification Process

The basic premise of all identification systems is the fact that nature never creates two identical individuals. The problem is to record the identifying characteristics and then to catalog them objectively in some system by which they can be communicated from person to person and from place

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to place. In identification by fingerprints and other similar means the recording is done by taking a physical impression of the characteristic features. Systems have been developed to catalog and communicate these with accuracy. But circumstances do not always allow for the taking of these physical impressions.

Identification by facial appearance gives us a wider range, requiring as it does mere visual contact with the subject, if only we have some method to crystallize out of the fluid memory of the observer an objective image of the subject's appearance and some way to code or tabulate its identifying characteristics. The Identi-Kit provides such a method of recording and cataloging. It has limits, however, short of positive identification, limits inherent in human ability to observe and remember.

If every natural mark and line in a human face could be visually compared with its antecedent image, complete and positive identification would be possible. Such positive identification is not practical because the human eye and brain, even with minute observation of all the natural marks and lines on a person's face, could not retain the memory of their exact location well enough to recreate a perfect image of it. But given the impossibility of an infallible system of visual identification, we can nevertheless make a practical and utilitarian approach to the identification problem through a process of elimination. In this process visual comparison can eliminate great numbers of possible persons who fail to qualify for likeness to the subject sought, and so reduce the possibilities to a few individuals, and frequently to a single one. The elimination process can begin with the gross physical features of age, sex, race, height, weight, build, etc., and proceed from there to the finer distinctions of facial appearance.

The Kit

It is in pinpointing these finer distinctions that we run into trouble when questioning a witness in order to build up an image of the absent person. And this is where the Identi-Kit comes in. The kit breaks a full-face image up into component parts—hair, brows, eyes, nose, lips, chin-line with ears, and age lines, plus beard, hat, and glasses, if any. It contains several dozen transparent slides picturing each of these com-

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ponents with different types of contours, 500 slides in all, with five notches on the side for different placements of each feature. Each slide is coded with a letter for the facial component illustrated and a figure for the particular configuration. The witness is given a catalog showing all these slides and asked to pick out the brows, nose, chin-line, etc., which most nearly suit the person he saw.

The witness, not accustomed to recognizing a pair of eyes with the brows removed or a mouth with no face around it, will find the going difficult at first. No matter: he will soon be able to study the whole reconstructed face and make adjustments. As he makes his tentative selection of components the slides are assembled on a make-up pad and the composite image displayed. Is the nose too fat? Pick a bonier one. Are the brows too prominent? Rearrange the pile of slides, putting the brows at the back and the eyes farther forward. Is the forehead too high? Slip the hair slide down by one or two from the normal third notch. Is the hair parted on the wrong side? Reverse the slide.

The witness is at last satisfied; he recognizes this man. It is not a finished portrait, but a good line-drawing of the right *type* of person. Figure 1 shows what a close resemblance to a well-known face can be assembled with the kit. In the first 129 operational cases in which the kit was used (by four different operators), the witness was able to produce a recognizable likeness of all but nine subjects. It took him anywhere from five minutes to several hours, averaging perhaps between thirty minutes and an hour.

There is one further refinement illustrated in Figure 1: if there are moles or scars on the remembered face, a grid of numbered lines is placed over the composite image and the positions of the marks are noted in this frame of reference. The scar grid is shown in Figure 2.

One of the advantages of the kit is the ease with which its coding permits a face to be recorded or transmitted to a distant location through almost instantaneous assembly from another kit there. A face is contained, for example, in the code message

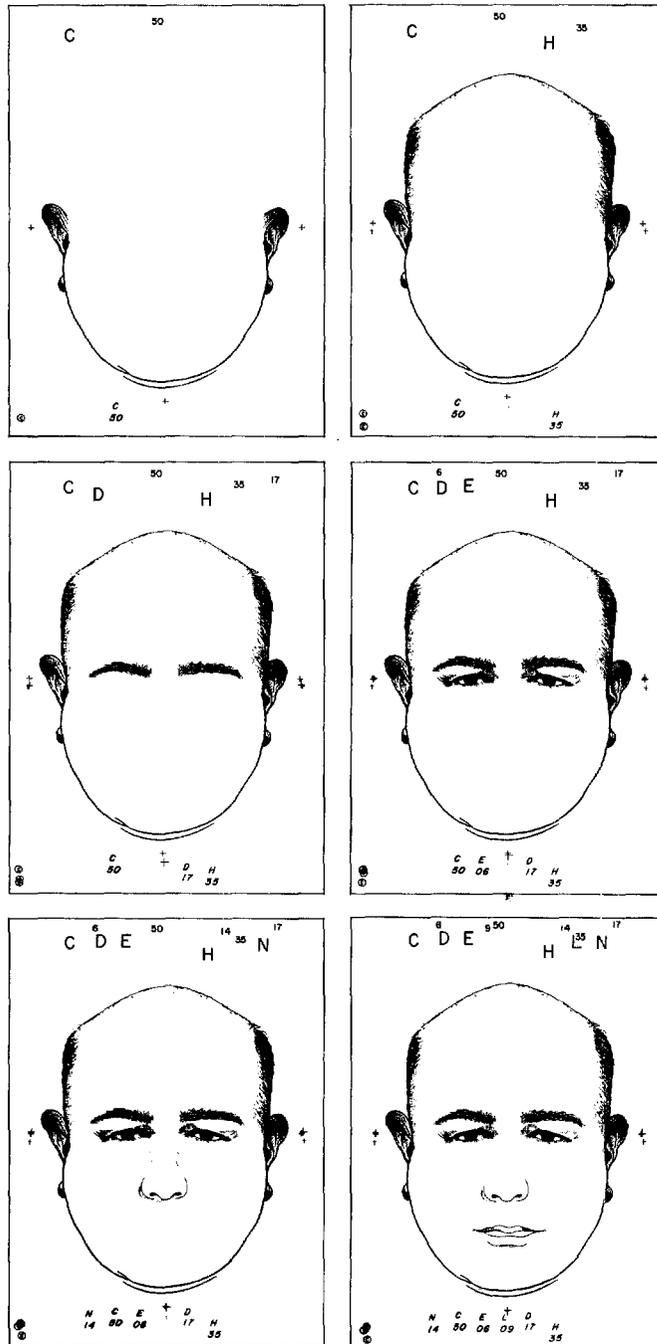
A17 N21X1 C30 E79 L16 D55 H92X4R SV40 SH20

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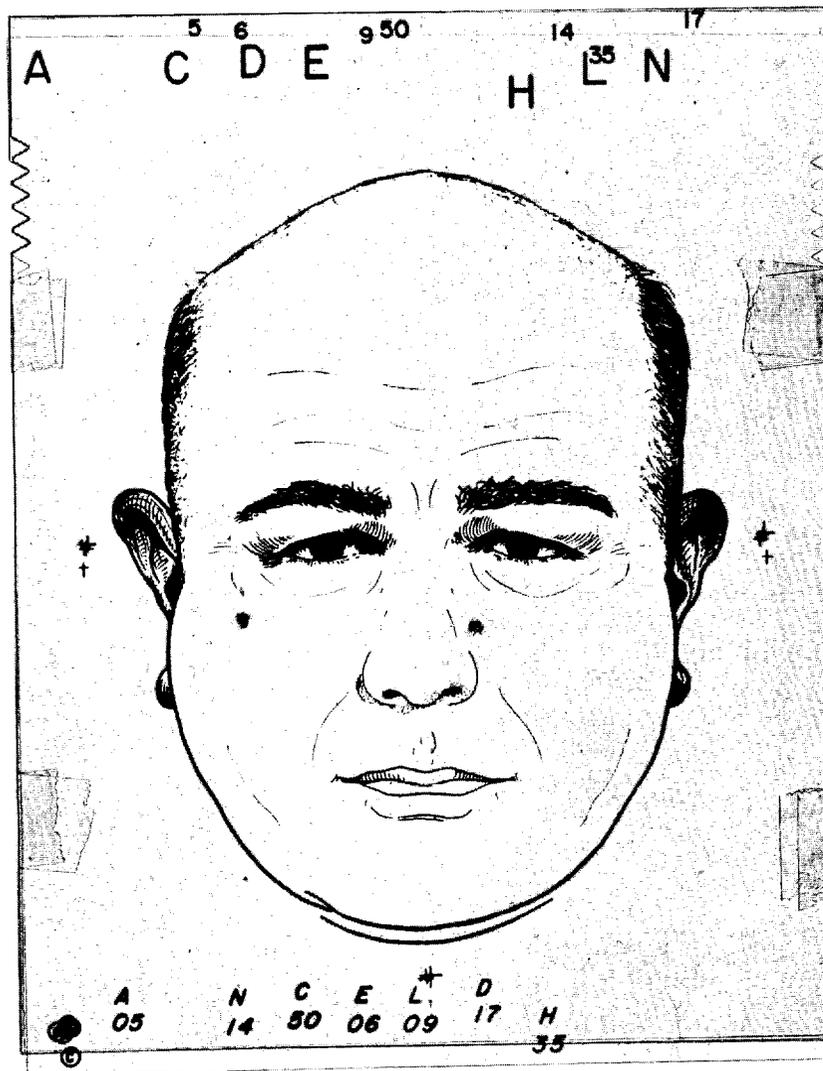
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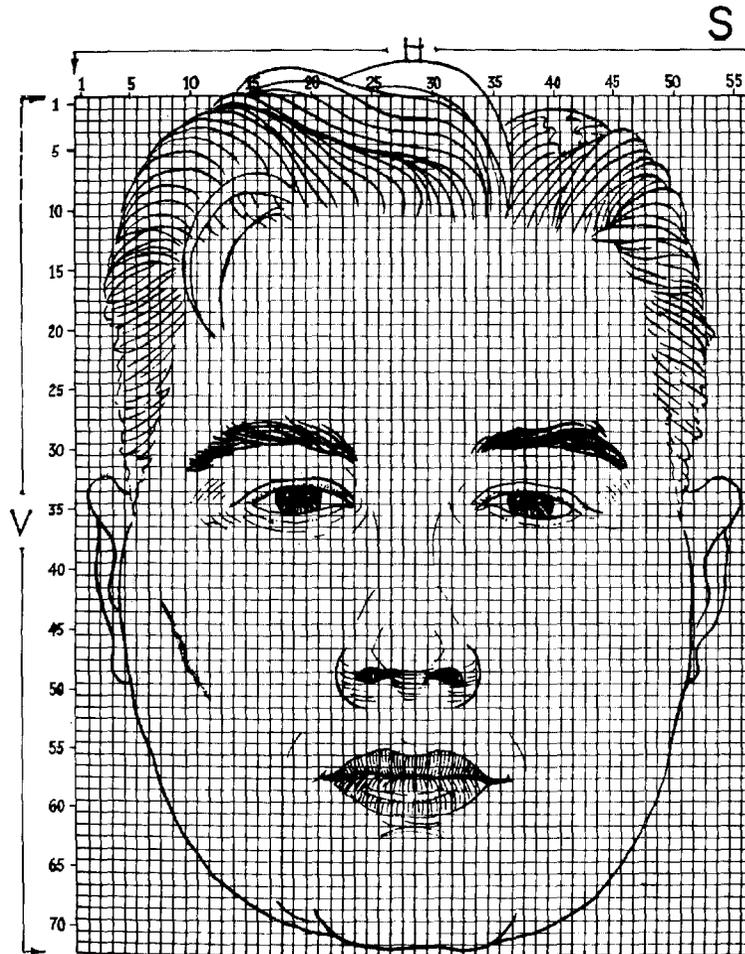
which means "Age lines slide 17, nose slide 21 two notches below normal, chin and ear slide 30, eye slide 79, lip slide 16, brow slide 55, hair slide 92 reversed and one notch above normal, mole under right eye at vertical 40 horizontal 20, no beard, glasses, or hat."

The number of such facial combinations that can be formed from the Identi-Kit is too astronomical to be conveniently

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FIGURE 2

written. These assemblages are rather like passport or other identity photographs in reproducing physical contours without reflecting "personality." Although they thus fall short of portrait-type likenesses, they are sufficient when compared feature by feature with known persons to weed out quickly all but one or a few that each could represent.

We have been treating the kit as a police device, but its application in intelligence is obvious. One might almost say, in fact, that virtually every technique used in intelligence is

The Identi-Kit

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some variation of a police technique, a relationship reflected in the identity in many small countries of the police with the intelligence service. The kit was actually a product of intelligence effort later released for police use, and it is being applied in an ever growing number of operational intelligence cases to the problem of identifying the "third man."

The effectiveness of the kit, thoroughly tested by both intelligence and the police, has produced startling results in areas where it has been properly applied. In fewer than one percent of police cases is it identification by fingerprints that leads to an arrest. In the several hundred Identi-Kit cases on record the kit has led to a whopping 35 percent of the arrests. Most of these identifications were accomplished by cross reference of the witness's reconstruction with "mug" files of known criminals which were classified in the Identi-Kit system. This process was possible in 100 of the first 129 cases, with an average file search time of 40 seconds.

One must remember, however, that the Identi-Kit system is not intended to supplant any of the identification systems in present use. It is simply an additional tool in the interrogation kit, a special wrench that enables you to get at a formerly inaccessible spot and work there effectively. You still need your other tools, and you have to be a good mechanic in the first place: the kit needs the control of a skilled interrogator, who can master this additional instrument with the help of a special one-week course of instruction. A child can make mechanical faces from the kit; but only experience and training can develop the right images from the mind of a person who had no particular reason to remember them until the questioning began, or perhaps does not want to remember them at all.

The potential uses and performance of the Identi-Kit system have barely been touched upon in this article. Extensive files must be developed and many operators trained before the full benefit of the system will be apparent. But the intelligence officer will feel the power of a conjuror when he can take the codes from a face his agent has built up to the nearest telephone or communications center, notify a distant file of his problem, and get back the required identification, complete with details, in a matter of minutes more than the communications lag.

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Glimpses into the meticulous work of those who examine identity papers for forgery or falsehoods.

CREDENTIALS—BONA FIDE OR FALSE?

David V. Brigane

The use of false documents, traditional in espionage, has responded like all else in the profession to the modern trend of expansion, organization, and technological advance. As intelligence activities have multiplied, the demand for documents has grown, and increasing effort has gone into their procurement and manufacture. On the defensive side, the detection of false documents has undergone a parallel growth in importance.

Those not familiar with false documentation would be amazed to see the elaborate techniques that go into the making of a high-grade reproduction and startled by the perfection of the results achieved. German World War II reproductions of British pound notes were so accurate that a Swiss bank, asked by German agents to check them as possible forgeries, had no reservations about declaring them authentic. The bank had not been remiss: it had made a careful examination and cabled London to verify the serial numbers and dates. After an extended period of use it was no physical flaw but merely the unavoidable duplication of existing serial numbers that ultimately gave them away. More recently a Western security service accepted a reproduction of its country's passport as genuine even after the question of forgery was raised.

But false documentation is an uneven business. Requirements on it are unpredictable, its raw materials often unavailable, and the time interval between demand and delivery can be appallingly short. The perfection of high-grade reproductions is no less astonishing than the crudity of makeshifts sometimes used even by the intelligence services of major world powers. Documents prepared by the German secret services during World War II have been described as being in

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many instances "beneath contempt" and "veritable death warrants to their unhappy holders."¹ Japanese documentation specialists, examining German reproductions of the Russian basic identity document, noted that the cloth cover was too light, the printing ink too glossy, the multi-colored background tint made by the Zammel printing press noticeably brighter than it should be, and the place-of-issue indicator identical in all copies.

Soviet Agent Documentation

The Russians themselves have not been above using some of the crudest devices known to the forger's trade. In reproducing rubber stamps for the German military travel permit, they economized by making a separate stamp for the center emblem and combining it with various reproductions of the outer portion, which showed the place of issue. The composite cachets, of course, did not reflect the individual variations characteristic of the originals, did not have the emblem in proper alignment with its encircling legend, and even showed inking differences from the separate imprintings. But although the Soviet services have thus improvised under the pressure of operational needs, especially in wartime, gambling that their makeshifts will escape close scrutiny, they are nevertheless journeymen at the documentation trade, having long since passed their apprenticeship.

The Soviet emphasis on clandestine and deep-cover activities has historically made documentation of its agents a matter of prime importance. As Don Levine's new book recalls,² a false Canadian passport was successful in establishing an identity for Trotsky's killer, even though the NKVD has misspelled the name as "Jacson." Richard Sorge used forged passports to conceal his travel to Moscow, and his radio operator, Max Klausen, traveled on three passports, Italian, Canadian, and German.³ Documents were a major concern to Alexander Foote and other members of his net. Rudolf Abel used an altered American passport for entry into the United States and two birth certificates to create different identities

¹ Alexander Foote, *Handbook for Spies*, p. 102.

² *The Mind of an Assassin*, reviewed in this issue.

³ See Willoughby's *The Shanghai Conspiracy* (New York: 1952).

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after his arrival; his assistant, Hayhanen, built an elaborate identity structure on an original American birth certificate apparently confiscated from a U.S. citizen who had emigrated to Estonia.⁴ Khokhlov,⁵ Wolwebber, and "Witczak" relied on documents to support false identities. But if documents were of critical importance in these famous cases which now happen to be in the public eye, imagine the documentation requirements created by the countless throng of subordinate agents and couriers, the proletariat of Communist espionage hierarchies.

To meet this continual demand, the Communists have always devoted a major effort to document collection and forgery. Even in the early thirties they operated a documentation unit in Moscow, one in Berlin, and a third in the United States.⁶ Of these three the German *Pass-Apparat* was the most elaborate, with six workshops and agencies all over Europe. In Germany alone there were agents for document collection in each of 24 districts. Their sources were varied. Communist sympathizers sometimes offered their own personal documents. A cleaning woman at Berlin police headquarters stole blank passports for the Party from time to time. Two engravers at the Stempel-Kaiser plant provided duplicates of rubber stamps manufactured for the German government. Two Saarland police officers formed a partnership in passports, one supplying the blanks, the other the stamps. Once during these years a Communist raid on a Czech police office yielded 1500 Czech passports as a by-product, but the richest document hauls in the thirties came from the International Brigade in Spain. Later, during World War II, Max Habijanec, a Swiss police officer in Basel, was a reliable source of backstopped Swiss passports. Currently the Soviet intelligence services use documents of their own Bloc extensively to authenticate defector and refugee cover. They also maintain a systematic watch within the Bloc for foreign identity documents held by returned émigrés.

⁴ See W. W. Rocafort, "Colonel Abel's Assistant," *Studies*, III 4, p. 1.

⁵ See his book, *In the Name of Conscience*, to be reviewed in the spring issue of the *Studies*.

⁶ David J. Dallin, *Soviet Espionage*, p. 92.

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As a corollary to these Communist activities, Western intelligence services have given increasing attention to the counterintelligence aspects of documentation. Techniques of document analysis developed in scientific criminology have been combined with world-wide intelligence resources to serve the investigative needs of intelligence organizations. Document analysis has been found increasingly effective as an aid in the investigation and detection of enemy agents, in the surveillance and control of one's own agents and verification of their intelligence reports, in the screening of refugees and defectors, and in developing biographic information and establishing the bona fides of individuals of intelligence interest.

Enemy Agents

Among the odds and ends of intelligence debris deposited during World War II by the tide of battle in Burma was a Japanese document bearing the title "CERTIFICATE OF RELIABILITY." It contained a detailed description of the bearer, followed by this text: "Please extend every assistance to Mr. Aung since he is employed by us as a spy." Although a spy's normal documentation does not resemble the forthright Mr. Aung's in advertising his profession, it often holds hidden evidence against him. Document analysis can play a key role in uncovering enemy operations.

The nature of this role can be illustrated in the case history of a Soviet escapee, whose documents and statement, in accordance with standard practice, were subjected to analysis and evaluation. During examination of the documents for format, an abnormally small spacing between the abbreviation "No." and the serial number of his basic identity document, the *passport*, attracted attention. No *passport* from the same place of issue being available for comparison, an analysis of the imprint was undertaken. It was determined that the serial number had been added after the document was printed and bound, contrary to all normal procedures for manufacturing the *passport*. Then the signatures came under suspicion, two signatures by each of two officials, because both pairs showed undue similarity. Subjected to handwriting analysis, all four proved to be traced forgeries.

Now the *passport* was checked against the escapee's military reserve document, and an irregularity in the photographs be-

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came apparent. Normally the photos in the two documents would have been taken on different occasions and would show different poses, clothing, and lighting. It does sometimes happen that prints for both documents are made from the same negative, but then the print used in the *passport* is differentiated by a white corner. In this case it was found that the photo in the military reserve document had been copied from that in the *passport* but enlarged and cropped to eliminate the white corner. Such rephotographing from another document, generally inconsistent with legitimate issuance, may be necessary when a forged document should show the person at an earlier age or when because of time, distance, or security considerations the subject is not available to the forger for photographing in person.

In addition to these evidences of forgery, discrepancies were found between the information given in the documents and biographic data supplied by the escapee himself. In the use made of these discoveries this case was a typical one. While the results of document analysis did not prove conclusively that the man was a Soviet agent, they showed that his documents had not been issued legitimately, disproved his general story, and opened up specific lines of interrogation and investigation.

As a tool in the investigation of enemy agents, document analysis can be used to great advantage not only in making an initial detection but in the handling of known agents, inducing them to talk and confirming or refuting their statements. The material evidence from documents has a strong psychological impact in corroborating or disproving an agent's story, and can be effective in destroying his self-confidence and eliciting confession.

Agent Control and Other Applications

Document analysis is not reserved for enemy agents; it can be equally valuable in determining the reliability of one's own agents and in assessing their reports and missions. A Far Eastern case will serve as illustration, one wherein an agent's report and the authenticity of a Chinese Communist document on which it was based were tested by analysis.

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As evidence of mission accomplished, the agent had also presented, along with the questioned document, the forged travel permit supplied him for use in the target area, now bearing a Chinese Communist cachet stamped on, by his account, at a checkpoint in the area itself. There were no known authentic exemplars with which to compare either the questioned document or this precise checkpoint cachet, but the cachet was compared with others from the same general area. It appeared to follow the normal pattern; several of the examples on hand were similar in format. One of them, however, was especially similar, to the point of suspiciously close likeness. Photographic comparison proved that both cachets had been stamped with the same instrument, and the place names separately imprinted.

Legitimate use of the same stamp in two different localities was out of the question. Fraudulent use of an authentic stamp in Chinese Communist hands was also out; this agent had no such capability. The answer was obvious: both cachets were forgeries. Since the exemplar cachet had been obtained from another agent travel permit, all papers connected with the mission this one had been used for came under scrutiny. Among them was a document, allegedly procured in another target area, which bore a small cachet of receipt in a Chinese Communist office. Here again economy of effort betrayed the forger's hand. This cachet proved to be identical with a receipt cachet on the questioned document in the current case, although the receiving offices could not have been the same. It was clear that neither of the reported missions had been carried out and that the documents allegedly acquired in the target areas were fabrications.

In a similar but simpler case, an agent presented a letter which bore a postal cancellation as proof that he had been in a certain city. This time, however, many authentic examples of postal cancellations from the city in question were available for comparison. Examination of the lettering, dating, inks, and indicators conclusively proved that the cancellation was a forgery.

Document analysis is useful in many other kinds of personal investigation—for establishing the bona fides of refugees, for surveying the activities of target personalities, for clearing

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prospective recruits, etc. Sometimes it is not a question of establishing authenticity, but only of developing informational content. An itinerary analysis from a passport, for example, provides detailed information on a person's movements which may not be procurable from any other source. Culling information of this type might appear to be a simple matter of reading the record, not involving analysis; yet it requires thorough familiarity with travel regulations and the customary passport entries to get the maximum amount of information. In one recent case where little proved biographic information was available on a person, his detailed record dating back to 1931 was built up through documents.

Spotting Forgeries

False documents are brought to attention through observation of some defect in them, through improper use, or through suspicion about the situation or activities of the bearer. Analysis can come only after the initial spotting, and relatively poor documentation can frequently escape detection if used in an ordinary way under circumstances which do not attract attention. Anyone who has experienced the hurried formalities of an international port of entry must be aware that a passport flaw could well be passed. For where the vast majority of the documents are genuine and the circumstances of use normal, only an obvious flaw will give the document away.

The obviousness of a flaw, however, is relative to the acuity of the checker. The human mind and senses make astonishingly fine distinctions, often unconsciously, in dealing with familiar things. And the results of analysis can be used to increase the checker's sensitivity and so play a part in the initial spotting.

Checklists of irregularities indicative of forgery have long been a counterintelligence tool. During World War II Soviet intelligence prepared a list of indicators for reproductions made by the German Abwehr. One of the salient signs was the use of rustproof staples in the Abwehr reproduction of the Ukrainian basic identity document, a gleaming evidence of forgery. More recently such checklists have been useful in screening Hungarian refugees. In another part of the world, analysis of South Korean documents reproduced for

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North Korean agents has revealed characteristic flaws and even made it possible to differentiate among those forged by different North Korean intelligence units.

Aside from characteristic individual flaws, patterns in the documentation of enemy agents can be detected by analysis and set up as spotting devices to be used in screening large groups of people. Some underlying pattern is likely to reflect the basic constants in operational needs and aims and the limitations of human imagination and material resources for support of operations. For one thing, there is a tendency to simplify false documents, since greater variety and complexity mean greater chance of error in detail. The resultant simplification may lead to the establishment of more specific detectable patterns. Take for example the question of showing a military career. A fictitious military background is complex and would require elaborate training to maintain under interrogation. The simpler solution of giving no military background has been noted in the documentation of numerous Soviet agents. Lack of military background may therefore be one element of pattern.

The effort to conceal information of value to the opposition may account for other elements of pattern. When the Communists use defector or refugee cover, the agents' documents themselves are of considerable value to Western intelligence. The Communists, operating under the assumption that these Bloc documents will be exploited by Western intelligence services, have introduced slight defects in them, presumably in the hope that these will be reproduced in documents for Western intelligence operations and thus serve to identify Western agents.

One of these defects is the separate imprinting of the *passport* serial number noted in the case of the Soviet "escapee" we examined earlier. Other deception devices have been an added letter, asterisk, or period, differences in printing impression, fabricated registration and deregistration cachets, and an additional dry seal not used in legitimate documents. One Communist service has shown a pattern of suppressing serialization information by not recording the number of a previous document as "basis for issuance."

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But the Communist services risk being trapped in their own dialectic. This technique has been noted and turned anti-thetically to counterintelligence profit by the West: intentional irregularities are carefully watched for and when found incriminate the document holder. And their detection is facilitated by their tendency to follow a general pattern.

If, on the other hand, the Communists use the documentation of a neutral or enemy country, the limitations on their resources for such documents may set a noticeable pattern. After the Communist raid on the Czech police office back in the thirties, the windfall of Czech passports was used freely until French police became aware of the pattern of Czech passport holders unacquainted with their native language.

For all these potential aids to document checkers, it must be admitted that the counterintelligence function of providing them data for the identification of forgeries has in general not been well developed. This is evidenced by the fact that the average official whose duties include checking personal documents is surprisingly uninformed even about the characteristic features of domestic documentation. The systematic Japanese do go so far as to provide police with pocket-sized booklets listing the blocks of numbers assigned to provinces for Japanese Alien Registration Certificates and describing some elementary characteristics of forgeries; but these rudimentary aids did not prevent the Tokyo Metropolitan Police from being taken in by a Tokyo-issued Alien Registration Certificate carried by a self-acknowledged North Korean agent. Only the agent's insistence that he brought the document from Korea led the police to request an analysis by Printing Bureau experts, which proved the document a forgery.

Another Far Eastern country, less methodical, is also perhaps more typical in its lack of attention to the counterintelligence aspects of documentation. It gives its police officers little or no assistance in detecting forgeries of the basic identity document of its capital city, although an excellent device is at hand. Genuine documents in use in the city have come from thirty or more different printing plates made up from time to time when additional stocks have been needed and the old plates were no longer available. No attempt appears to have been made to turn this diversity to benefit by

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maintaining accurate records of the districts and dates of issue of the different printings. At the same time, Communist reproductions of the document have seemingly undergone only the most elementary analysis by the security forces, and documentation, as might therefore be expected, has played a very minor role in the spotting of infiltrators.

In the long-continued struggle against Communist infiltration and subversion, this counterintelligence function deserves much greater attention.

Analytic Procedures

Analysis of documents is essentially a matter of comparison. But it is not simply comparing an item with an authentic example in order to detect discrepancies. Take two examples of a given signature: they will not be identical unless one or both have been forged. So the process of analysis is one of double comparison. First the two signatures are compared and points of similarity and difference noted. Then these differences are compared at least mentally with standards of acceptable variation which the handwriting expert has established through previous examination of large numbers of handwriting specimens and through study of principles based on similar experience by others. The most laborious part of the job, the establishment of norms, has therefore been accomplished before the two signatures have ever been seen. And norms could not have been established without large numbers of handwriting specimens available.

Essentially the same process is applied in all stages of document analysis, and invariably one of the greatest difficulties is to build up a volume of material extensive enough to determine norms. Standards of judgment are needed on all the innumerable details relating to format, alterations, aging, and applicability and use of the document under varying conditions.

One of the first things to be established is whether a document's format is the normal one, as determined from originals, photos, regulations covering issuance and use, and information reports of many types. All characteristics of the document must be considered—printing, dry seals, cachets, serial numbers, signatures and handwriting, style of entries, terminology, photos, inks, paper, binding, etc. Some of these ele-

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ments must be subjected also to technical analysis, a specialized field requiring separate treatment.⁷

Interestingly enough, format analysis can be applied very successfully to Soviet agent documents issued by the Russians themselves. It is sometimes assumed that when an intelligence service requires the documents of its own country for its operations, it will make use of the genuine article, documentation invulnerable to counterintelligence analysis. This is by no means true. Even if an agent document is issued by the normal issuing office, it will frequently show peculiarities arising from the operational needs of the case. Most notably there is the problem of the date of issue: the agent cannot be equipped with birth certificate, school diploma, military registration document, occupational papers, and basic identity document all issued with a current date. But the blank documents appropriate to the required date may long since have been replaced by new forms, and the normal issuing official, not being a documentation specialist, will probably back-date the document as required without departing from current issuance procedures. The resultant discrepancies can be revealed by format analysis.

A Seaman's Passport carried several years ago by a Communist agent is a case in point. The document itself was genuine, duly issued by the appropriate Harbor Master, but it had been back-dated one year to meet operational requirements. Its serial number therefore corresponded to those of issuances a year later than the date shown, in other words to the actual rather than ostensible date of issue. It also bore a cachet which did not come into use until several months after its purported date and omitted the fingerprint which had been included up to and for approximately eight months after that date.

In addition, the document lacked the two dry seals normally placed over the photo. The logical explanation of this irregularity appears to be that it was received from the Harbor Master's office with serial number, issuance cachets, and signatures, but otherwise blank. The seal could not have been included with the issuance cachets since it had to be stamped

⁷ See Wilson K. Harrison's *Suspect Documents—Their Scientific Examination*, reviewed in *Studies*, III 2.

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on the still absent photo. For reasons of security or convenience, the intelligence office did not see fit to have the completed document stamped later by the issuing authority.

These various flaws in format could be detected because of the availability of document intelligence reports and a large number of photocopied Seaman's Passports from which norms could be established. These made it possible to determine the approximate dates on which the new cachet was introduced and the use of fingerprints discontinued, and through the serial number sequence shown in the photocopies to pinpoint the exact date on which the questioned document was actually issued.

In addition to flaws in format, the Seaman's Passport contained certain biographic inconsistencies. It recorded a change of position from radio operator to apprentice, a retrogression violating the normal occupational pattern; and it indicated that the seaman had made no voyage for a full year after the document was issued. An even more damaging fact turned up in the photocopies of Seaman's Passports on hand: the bearer had held a second such Passport concurrently with the questioned document, apparently for a different mission.

The difficulty of establishing norms and distinguishing furtive violations of them is compounded, however, by human unpredictability, which can easily disrupt the best established official procedures. Irregularities do not *per se* prove fraud. A document held by a Hungarian refugee is a good example. It aroused immediate suspicion because the code number appearing in the dry seal impressed on the photo did not correspond to the number in the cachet of the issuing office. This irregularity, however, was the legitimate result of an unusual chain of events. Involved in a bicycle accident in Budapest, the bearer had had to present her basic identity document for police check. The Budapest police had observed that the dry seal was missing—something she herself had never noticed—and checked with the issuing office in another town. When the authenticity of the document was confirmed, the woman was allowed as a matter of convenience to have the dry seal entered in Budapest, where she was then staying, although the Budapest office number on the dry seal would not correspond, as in principle it should, with the number in the issuance cachet.

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In another refugee case, analysis disclosed entries in civilian documents inconsistent with the refugee's reported military record. Further interrogation of the subject satisfactorily explained these inconsistencies, drawing his exasperated comment that if there had been anything wrong with his documents, he wouldn't have presented them. This comment of a sensible man caught in the toils of a suspicious bureaucracy seems logical, but its logic is not shared by those who have something to conceal. The risk of having no proof seems greater to them than the risk of defective proof. They are generally not aware of the amount of information their documents will yield, and are prone to suppose that officials unfamiliar with them will fail to detect flaws.

One such hopeful deceiver was a Hungarian refugee whose documents were used to check his political background, especially with regard to whether he had served in the State Security Authority, the AVH. The man denied that he had, maintaining that he had been employed in the civil police only; but his documents told a different story. His Military Reserve Document recorded his police service in the space provided for military experience, and only service in the AVH, not in the civil police, is counted as military service. Furthermore, the Military Reserve Document was not issued until the termination of his police service, which therefore must have been considered the equivalent of military duty. This is one of the many cases in which documents that are themselves genuine serve on analysis to betray the bearer's falsifications.

Document analysis is a valuable tool in counterintelligence, but it is one tool only, to be used in combination with other investigative techniques. And since documents do not exist in a vacuum, intelligence data on many apparently unrelated subjects may enter into document evaluation. On one occasion, Navy reports on coastal Chinese weather corroborated the travel route shown on a Chinese Communist document, confirming other evidence of its authenticity. Furthermore, the dependence for analytic effectiveness on intelligence resources, document information and exemplars requiring constant collection effort, make this activity an integral part of intelligence processes, one that cannot be carried on in isolation from the whole.

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A priori considerations prejudicing successful interrogation by trance induction suggest a possible variant technique.

HYPNOSIS IN INTERROGATION

Edward F. Deshere

The control over a person's behavior ostensibly achieved in hypnosis obviously nominates it for use in the difficult process of interrogation. It is therefore surprising that nobody, as the induction of "Mesmeric trance" has moved from halls of magic into clinics and laboratories, seems to have used it in this way. A search of the professional literature shows at least that no one has chosen to discuss such a use in print, and a fairly extensive inquiry among hypnosis experts from a variety of countries has not turned up anyone who admits to familiarity with applications of the process to interrogation. There is therefore no experimental evidence that can be cited, but it should be possible to reach tentative conclusions about its effectiveness in this field on the basis of theoretical considerations.

The Nature of Hypnosis

Experimental analysis has gradually given us a better understanding of hypnosis since the days of Mesmer⁶ and his followers, who held that it results from the flow of a force called animal magnetism from hypnotist to subject. Nevertheless, although no present-day investigator shares the lingering lay opinion that hypnosis is in some way an overpowering of a weak mind by a superior intellect, there are still many divergent theories propounded to account for the accumulating clinical observations. Some of these have significantly different implications with respect to the susceptibility of a hypnotized person to purposeful influence.

The view that hypnosis is a state of artificially induced sleep has been widely held since Braid⁷ invented the term in mid-nineteenth-century. Currently Pavlov²⁰ takes a similar position in maintaining that cortical inhibition, sleep, and hyp-

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nosis are essentially identical. This view is now held throughout those parts of the world where Pavlovian theory is accepted as creed, but to the American investigator the experimental evidence against it appears overwhelming. Bass,³ for example, has shown that the patellar—kneecap—reflex, which disappears in sleep, is not diminished in hypnosis. Wells²⁷ and others have demonstrated that all hypnotic phenomena can be elicited in a state bearing no resemblance to sleep, a performance which suggests the hypothesis that sleep-like aspects of hypnosis are not intrinsic to the hypnotic state but result from the hypnotist's suggestion that his subject go to sleep. Barker and Burgwin² have shown that the electroencephalographic changes characteristic of sleep do not occur in hypnosis except when true sleep is hypnotically induced. The findings of two Russian papers¹⁶ which dispute this conclusion, affirming that the EEG rhythm characteristic of hypnosis resembles that of drowsiness and light sleep, have not been verified by replicating their experiments.

The concepts of suggestion and suggestibility as applied to hypnosis, introduced about 1880 by the Nancy school of hypnosis investigators, have been developed and refined in modern times. In a major monograph Hull¹⁰ concluded that hypnosis is primarily a state of heightened suggestibility and has the characteristics of habit in that it becomes increasingly easy for a subject to enter the state of hypnosis after he has once done it. Welch,²⁶ in an ingenious application of the conditioning theory, pointed out that trance induction begins with suggestions which are almost certain to take effect and proceeds to more difficult ones. While the concept of suggestion does provide a bridge between the hypnotic and the normal waking state, it does not explain the peculiarity of the hypnotic process or the causes of the state of trance.

Several more recent approaches, which might be called *motivational* theories of hypnosis, hold that achievement of trance is related to the subject's desire to enter such a state. Experimentalists and clinicians who take the motivational view—including the present writer, whose conclusions on the subject of this paper are undoubtedly colored by it—believe that it accounts best for the major portion of the clinical data. Trance is commonly induced in situations where the

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subject is motivated a priori to cooperate with the hypnotist, usually to obtain relief from suffering, to contribute to a scientific study, or (as in a stage performance) to become a center of attraction. Almost all information currently available about hypnosis has been derived from such situations, and this fact must be kept in mind when one attempts to apply the data theoretically to situations different from these.

Hypnosis of Interrogees

The question of the utility of hypnosis in the interrogation of persons unwilling to divulge the information sought involves three issues: First, can hypnosis be induced under conditions of interrogation? If so, can the subject be compelled to reveal information? And finally, if information can be so obtained, how reliable will it be? The initial problem is then to induce trance either against the subject's wishes or without his being aware of it.

The Subject Unaware. Hypnosis has reportedly been effected without the subject's awareness in three situations—in sleep, in patients undergoing psychiatric consultation, and spontaneously in persons observing another subject being hypnotized.

The older literature is replete with references to somnambulistic hypnosis induced by giving suggestions to sleeping subjects in a low but insistent voice. No case records are cited to support these statements, however; and they appear, like many others in hypnosis literature, to have been carried over from one textbook to another without critical evaluation. In a recent study Theodore X. Barber¹ found considerable similarity between subjects' compliance with suggestions given during sleep and their reactions to ordinary hypnotic techniques. Since Barber had asked them for permission to enter their rooms at night and talk to them in their sleep, however, it is reasonable to assume that most if not all of them perceived that trance induction was his purpose. They cannot therefore be regarded as truly naive sleeping subjects. Casual experimentation by the present writer has failed to demonstrate the feasibility of hypnotizing naive sleepers. The sample consisted of only four subjects, three of whom awakened to ask belligerently what was going on. The fourth just continued to sleep.

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It is frequently possible for a therapist to perform hypnosis with the patient unaware. Advising the patient to relax, suggesting that he would be more comfortable with his eyes closed, and so on, the practitioner may induce a deep level of trance in a relatively brief time without ever using the term hypnosis. Even though the subject has not explicitly consented to be hypnotized, however, his relationship to the hypnotist, here a man of reputation and prestige, is one of trust and confidence, of justifiably anticipated help.

Observers of hypnotic demonstrations may spontaneously enter trance. One of my own psychotherapy patients has reported that she went into a trance while watching me demonstrate hypnotic phenomena on television. This spontaneous hypnosis occurred despite the fact that the patient was in the company of friends and it was therefore a source of embarrassment to her. But here again we are dealing with a subject in sympathy with the purposes of the hypnotist and one who feels himself to be in a safe situation. It has been noted clinically that persons with negative attitudes about hypnosis are not susceptible to spontaneous trance.

The Subject Antagonistic. In experiments conducted by Wells,²⁰ Brenman,⁸ and Watkins,²⁵ subjects making an effort to resist trance induction were unable to fight it off. Space does not permit a full review of these experiments here, but in all three the subject had had previous trance experiences with the hypnotist, which, we may assume, initiated a positive relationship between subject and hypnotist. The subject was instructed to resist hypnosis, but in the context of participating in an experiment to test this issue. It seems possible that his response was one of compliance with a supposed implicit desire on the part of the experimenter that he collaborate in demonstrating that trance can be induced in the face of resistance. The demand characteristics of the situation—those influencing the subject to partake of the experimenter's purposes—may have been such that his prescribed attitude of overt resistance was unable to prevail over the more fundamental attitude of cooperation in an experiment to show that trance can be brought on against a subject's will.

Orne¹⁸ has shown that the demand characteristics of an experimental situation may greatly influence a subject's hyp-

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notic behavior. It is clear that at some level any cooperative subject wishes an experiment to "work out," wishes to help fulfill the experimenter's expectations. If he grasps the purpose of the experiment or the bias of the experimenter, he is disposed toward producing behavior which will confirm the experimenter's hypothesis. This is particularly true in a hypnotic relationship.

We are led to the conclusion that the many apparent cases of hypnosis without the subject's awareness or consent all seem to have depended upon a positive relationship between subject and hypnotist. The most favorable situation is one in which the subject expects to derive benefit from his association with the hypnotist and trusts in the hypnotist and his ability to help. This would not be the situation in an interrogation wherein the hypnotist is seeking to extract information which the subject wants to withhold. The possibility of using hypnosis would therefore seem to depend on success in the slow process of nurturing a positive relationship with the interrogee or in perpetrating some kind of trickery.

Obedience in Trance

Assuming that an interrogator has circumvented these problems and hypnotized a subject who wants to withhold information, to what extent might the subject retain control of his secrets even in deep trance? This is an area where wide disagreements prevail among authorities and where experimental evidence is highly contradictory. Young,³⁰ for example, reports that subjects resist specific hypnotic suggestions if they have decided in advance to do so, while Wells²⁸ reports that none of his subjects were able to resist a prearranged unacceptable command or indeed any other.

Most work on this problem has focused on the more specific question of whether a person can be induced under hypnosis to commit some antisocial or self-destructive act. Supporting the negative view is the classic experiment by Janet,¹¹ who asked a deeply hypnotized female to commit several murders before a distinguished group of judges and magistrates, stabbing some victims with rubber daggers and poisoning others with sugar tablets. She did all this without hesitation. As the company dispersed, however, she was left in the charge of some young assistants, who took a notion to end the experi-

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ments on a lighter note. When they told her that she was now alone and would undress she promptly awakened. The murders were play-acted, the undressing would have been real; and the subject had no difficulty discerning the difference.

Wells,²⁹ on the other hand, caused a subject to commit the post-hypnotic theft of a dollar bill from the hypnotist's coat. The subject was unaware of his action and denied vehemently that he had stolen the money. Wells argues that other failures to compel such acts do not disprove the possibility of doing it, whereas even one success demonstrates that it can be done. Schneck and Watkins, also, cite evidence that behavior ordinarily constituting a crime can be produced by hypnosis. Schneck²² inadvertently caused a soldier to desert his duty in order to carry out a suggestion for post-hypnotic action. Watkins²⁴ induced a soldier to strike a superior officer by suggesting that the officer was a Japanese soldier, and he obtained from a hypnotized WAC some information classified "secret" which she had previously told him she would not reveal.

Although these demonstrations appear convincing, there are deficiencies in their experimental conditions. Since both Schneck and Watkins were Army officers, the offenses committed could not possibly result in any serious damage. At some level, the subjects must have been aware of this. This same reasoning applies in experiments requiring a subject to hurl acid at a research assistant or pick up a poisonous snake: the participants are protected by invisible glass, a harmless snake is substituted for the poisonous one, and so forth. The situations are clearly experimental and the hypnotist who requests the homicidal or self-destructive behavior is known to the subject as a reputable man.

From real life there are a fair number of cases on record dating before 1900, particularly among the German-speaking peoples, claiming hypnotically induced criminal behavior, mostly sex offenses. It is hard to evaluate these cases scientifically at this late date; frequently it was relatives of the subject, rather than the offender himself, that charged hypnotic influence. Within recent years, however, three documented cases in which hypnosis is said to have played a role in criminal behavior have been reported—by Kroener,¹³

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Mayer,¹⁴ and Reiter.²¹ These three cases have a common element: in each a dissatisfied person found gratification through the individual who later became his seducing hypnotist. It will be sufficient to examine one of them.

In the case reported by Kroener a young and sensitive unmarried male schoolteacher came under the hypnotic influence of a neighbor. Beginning with neighborly hospitality, the neighbor built up the relationship to the point where he was able by hypnotic suggestion to get the schoolteacher to give or lend him small sums of money and goods. As a test of his power he then implanted the post-hypnotic suggestion that the schoolteacher would shoot himself in the left hand. The schoolteacher actually did shoot himself in the left elbow, subjectively perceiving the event as an accident. Finally the hypnotist caused his victim to confess to crimes that he himself had committed. Throughout the entire affair, lasting five years, the schoolteacher had no recollection of the hypnotic sessions. He was convicted on the basis of his post-hypnotic confession, but through a chance remark began to suspect the nature of his relationship with his neighbor. After many appeals, he was recommended for examination to Kroener, who eventually uncovered the true course of events by re-hypnotizing him and causing him to remember the hypnotic experiences with his neighbor.

It is evident that a case like this offers little encouragement to the interrogator hoping to extract secrets by hypnosis. When the relationship between two individuals is marked by intense feelings and a strong tendency in one to comply with whatever requests are made of him by the other, it is in fact hardly necessary to invoke hypnosis to explain the resultant behavior. In the interrogation setting this emotional relationship of subject to hypnotist is not likely to exist.

Accuracy and Veracity

Supposing, however, that an interrogee has been hypnotized and induced to divulge information: how correct is this information likely to be?

Accuracy in Recall. A great deal has been written, especially in the press, about the perfect memory and unfailing accuracy of recall people display in hypnosis. Statements have

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frequently been made about their ability to recall anything that has happened to them even while infants, and according to some even prior to birth.¹² Hypnotic age-regression is a mechanism frequently used for this purpose. The subject is "taken back" to, say, the age of six. He begins to act, talk, and to some extent think in the manner of a six-year-old. He hallucinates the appropriate environment and gives details about people sitting next to him in school, his teacher's name, the color of the walls, and so on. His actions are exceedingly convincing, and it has frequently been assumed that an actual regression in many psychologic and physiologic age components to the suggested year takes place.

There is little evidence for the genuineness of hypnotic age-regression, even though there have been a number of studies, mostly based on single cases. Young³¹ demonstrated that performance on intelligence tests was not appropriate to the suggested age. Unhypnotized control subjects were more successful than subjects under deep hypnosis in simulating their age. Using the Rorschach test and drawings in a study of hypnotic age-regression in ten subjects, Orne¹⁷ demonstrated that while some regressive changes appeared, non-regressive elements were also present, and changes toward regression showed no consistency from subject to subject. The drawings did not resemble the work of six-year-olds, being characterized by Karen Machover as "sophisticated oversimplification." Drawings actually done at the age of six by one subject were available for comparison, and there was not even a superficial resemblance. Subjects often gave with great conviction the name of the wrong teacher, one they had had at a later age. Studies by True and Stephenson,²³ and McCranie, Crasilneck, and Teter¹⁵ failed to find in electroencephalograms taken during hypnotic age-regression any change in the direction of a childhood EEG. Similarly they report no increased heart rate, as characteristic of infants, or other changes in electrocardiograph tracings.

Hypnotic Veracity. Considerably less data is available on the veracity of information furnished in trance. I have been able to find in the professional literature only one author—Beigel^{4,5}—who deals with prevarication under hypnosis. He writes in a personal communication that people

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may lie, refuse to answer, or wake up when asked direct questions on sensitive matters. Our own clinical work has amply convinced us that hypnotized subjects are capable of lying when they have reason to do so.

It is therefore possible that information obtained from an interrogee by hypnosis would be either deliberate prevarication or an unintentional confusion of fantasy and reality. The correctness of any information so obtained would thus have to be established by independent criteria.

Prophylactic Hypnosis

Three suggestions have been made by Estabrooks⁹ for what might be called defensive uses of hypnosis. He proposed that it might be used to make personnel hypnosis-proof on capture by the enemy, to induce in them amnesia for sensitive material in the event of capture, or to help them resist stress, particularly pain, in captivity.

As we have seen, there is little or no evidence that trance can be induced against a person's wishes. Proofing personnel against hypnosis attempts which they could successfully resist without this conditioning would seem a practice of doubtful utility. The hypnosis undertaken in order to suggest that they resist trance induction upon capture might in fact possibly precondition them to susceptibility. It might be better simply to warn them of the techniques of trance induction and inform them that they can prevent it.

Providing by hypnotic suggestion for amnesia upon capture is an intriguing idea, but here again we encounter technical problems. It is well known that the effectiveness and permanence of hypnotic suggestion is directly related to the concrete definition of a specific task. General suggestions such as blanket amnesia have unpredictable effects even on very good subjects. Moreover, even if it would work to suggest that a soldier remember only his name, rank, and serial number, there is the serious question whether this might deprive him of information vital to him during captivity. It would artificially induce a state of severe psychopathology, which if adaptive to his situation in some respects might be extremely disturbing in others. The impoverishment of his knowledge and his loss of ego-control would give his interrogator a very

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effective means of controlling him, possibly leading to a quasi-therapeutic relationship in which the captive would turn to the interrogator for "treatment" to relieve his distress.

This method has other serious drawbacks: offensive action, such as attempts to escape or schemes for cooperation among prisoners to obstruct interrogation, would be severely handicapped. It could be far safer to rely on the soldier's own ego-control to decide what information ought not to be revealed to an enemy than to make this decision for him in advance by hypnotic means.

Conditioning individuals not to feel stress, particularly pain, would seem to hold promise of protecting them as captives subject to interrogation. Laboratory experiments have demonstrated that although subjects under hypnotic analgesia continue to respond physiologically much as they do in the waking state, they do not report experiencing pain. It appears that hypnosis works best in situations of high anxiety and probably has its major effect on the anxiety component of pain.

Such a procedure might be undertaken in particular instances, but probably is not feasible as general practice. Only a relatively small number of individuals will enter a sufficiently deep somnambulistic state to produce profound analgesia. Furthermore, though major surgery has been performed under hypnosis proper, I am unaware that major surgical procedure has ever been undertaken during post-hypnotically induced analgesia. In some individuals, I am sure, this would be possible, but clinicians working with hypnosis generally believe that the hypnotic state itself is more effective than post-hypnotic inductions.

If this should be tried, what type of suggestion should the subject be given? The post-hypnotic suppression of *all* pain might be dangerous to the individual, since pain serves as a physiological warning signal; and it is doubtful that such a blanket suggestion would be effective anyway. It would be better to focus the suggestion on inability to feel pain at the hands of captors. Even this suggestion, however, would rapidly break down if the captured subject felt any pain at all, as is likely in all but a very few instances. The soldier who had been taught to rely on hypnosis as an analgesic and

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found it ineffective in certain situations might be considerably worse off than if he had not trusted this device in the first place.

Pseudo-Hypnosis as Interrogation Aid

People do undergo physical and mental suffering to withhold information from an interrogator. Without attempting to discuss the psychodynamics of capture and interrogation—which obviously will vary widely from captive to captive—we would hazard the suggestion that at the core of their resistance is the sense of extreme guilt which would be activated by collaboration with the enemy while still in control of one's faculties. The alleviation of this sense of guilt, therefore, might be extremely useful to the interrogator. Both the hypnotic and the hypnoidal states induced by certain drugs are popularly viewed as ones in which a person is no longer master of his fate. This fact suggests the possibility that the *hypnotic situation*, rather than hypnosis itself, could be used to relieve a person of any sense of guilt for his behavior, giving him the notion that he is helpless to prevent his manipulation by the interrogator.

A captive's anxiety could be heightened, for example, by rumors that the interrogator possesses semi-magical techniques of extracting information. A group of collaborating captives could verify that interrogees lose all control over their actions, and so on. After such preliminary conditioning, a "trance" could be induced with drugs in a setting described by Orne¹⁹ as the "magic room," where a number of devices would be used to convince the subject that he is responding to suggestions. For instance, a concealed diathermy machine could warm up his hand just as he receives the suggestion that his hand is growing warmer. Or it might be suggested to him that when he wakes up a cigarette will taste bitter, it having been arranged that any cigarettes available to him would indeed have a slight but noticeably bitter taste. With ingenuity a large variety of suggestions can be made to come true by means unknown to the subject. Occasionally these manipulations would probably elicit some form of trance phenomenon, but the crucial thing would be the situation, not the incidental hypnotic state. The individual could le-

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gitimately renounce responsibility for divulging information, much as if he had done it in delirium.

The correctness of information so obtained, however, would be no surer than that of information obtained from hypnosis itself. Further, the interrogator would have to act in his relationship with the captive as though he were confident that it was all correct, except as he could detect falsehoods with certainty. Any doubt he betrayed would increase the subject's feeling of control and so decrease the effectiveness of the hypnotic situation. Cross-examination, upon which much of his success in deriving accurate information ordinarily depends, would be denied him. Once the prisoner loses his feeling of responsibility for his behavior, he also is relieved of responsibility for giving accurate and pertinent information.

An effective defense against this hypnotic situation, as against hypnosis, could be provided by raising the level of sophistication of those who might be exposed to it. Even one or two lectures warning them of possible devices to trick them into believing themselves hypnotized could show them that people cannot be hypnotized against their will and cannot be compelled even under hypnosis to tell the truth or to follow suggestions really contrary to their beliefs.

Findings

In summary, it appears extremely doubtful that trance can be induced in resistant subjects. It may be possible to hypnotize a person without his being aware of it, but this would require a positive relationship between hypnotist and subject not likely to be found in the interrogation setting. Disregarding these difficulties, it is doubtful that proscribed behavior can be induced against the subject's wishes, though we must admit that crucial experiments to resolve this question have not yet been performed. The evidence also indicates that information obtained during hypnosis need not be accurate and may in fact contain untruths, despite hypnotic suggestions to the contrary.

Hypnosis as a prophylaxis against interrogation, whether to prevent hypnosis by captors, to condition against stress and pain, or to create amnesia for sensitive information, would function as an artificial repressive mechanism with the seri-

ous disadvantage of diminishing the captive's mastery of the situation. Finally, the hypnotic situation, rather than hypnosis itself, seems likely to be a more effective instrument in interrogation.

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FROM THE CIA CORNERSTONE CEREMONIES

America's fundamental aspiration is the preservation of peace. To this end we seek to develop policies and arrangements to make the peace both permanent and just. This can be done only on the basis of required information.

In war nothing is more important to a commander than the facts concerning the strength, dispositions and intention of his opponent, and the proper interpretation of those facts. In peacetime the necessary facts are of a different nature. They deal with conditions, resources, requirements and attitudes prevailing in the world. They are essential to the development of policy to further our long term national security and best interests. To provide information of this kind is the task of the organization of which you are a part.

No task could be more important.

Upon the quality of your work depends in large measure the success of our effort to further the nation's position in the international scene.

By its very nature the work of this agency demands of its members the highest order of dedication, ability, trustworthiness and selflessness—to say nothing of the finest type of courage, whenever needed. Success cannot be advertised; failure cannot be explained. In the work of intelligence, heroes are undecorated and unsung, often even among their own fraternity. Their inspiration is rooted in patriotism—their reward can be little except the conviction that they are performing a unique and indispensable service for their country, and the knowledge that America needs and appreciates their efforts. I assure you this is indeed true.

The reputation of your organization for quality and excellence, under the leadership of your Director, Mr. Allen Dulles, is a proud one.

Because I deeply believe these things, I deem it a great privilege to participate in this ceremony of cornerstone laying for the national headquarters of the Central Intelligence Agency. On this spot will rise a beautiful and useful structure. May it long endure, to serve the cause of peace.

—DWIGHT D. EISENHOWER

The laying of this cornerstone marks an important stage in the growth of the Central Intelligence Agency. We will soon have a home of our own, in these inspiring surroundings high above the Potomac.

The Agency was established 12 years ago by the same Act of Congress which created the National Security Council and the Department of Defense. Thus the Central Intelligence Agency was recognized as one of the important elements in our national security structure.

World War II and its aftermath and the international communist threat had already brought home to us that our vital interests were at stake in places as distant as Korea and Laos, in Africa and the Islands of the Pacific, as well as in this Hemisphere and in Europe.

Since then, our country's ever expanding responsibilities have increased the need for better information from the four corners of the earth and for sound analysis of that information.

The law creating the Agency was voted by a Congress in which there was a Republican majority. It was sponsored and signed by a Democratic President. For the past crucial years it has had the unfailing support of a Republican President and a Democratic Congress.

Facts have no politics.

Our charter, in the carefully drafted provisions of the National Security Act, has undergone no change. It provides that, under the direction of the President and of the National Security Council, the Agency shall correlate and evaluate intelligence relating to the national security, and perform such additional services of common concern in this field as the National Security Council may direct.

Wisely this legislation provides that we should have no domestic internal security functions. Yet the scope of the jurisdiction granted is ample. Our work is broad and comprehensive enough to enlist the interest and to inspire the devotion of those who choose, and are chosen, to enter upon it.

Laws can create agencies of government; they cannot make them function. Only the high purpose and dedication of all serving them can weld them into effective instruments for our national security.

In this work of intelligence we must not forget that human beings are largely the creatures of their beliefs. As individuals we tend instinctively, and sometimes wistfully, to become attached to causes, to theories, to solutions.

If they be sound and enduring, based on the deep moral strivings of man and the highest conception of our national interests, let us cling to them. But in the field of our relations with our fellowmen abroad, let us assure ourselves, through accurate intelligence, that our attachments to policies are soundly based.

It is the particular duty of this Agency to help perform this function in a world where change is the rule rather than the exception. This task must be carried out fearlessly, without warping to meet our prejudices or our predilections or even the tenets of existing policy.

As we build a new edifice in which to house, to concentrate and coordinate our work, we must rededicate ourselves to this high purpose.

The guiding motto to be inscribed on the face of this building will be the words taken from the Gospel according to St. John: "Ye shall know the truth, and the truth shall make you free."

The President of the United States has graciously consented to lay the cornerstone.

—ALLEN W. DULLES

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The editors particularly invite readers to offer suitable manuscripts based on their own work or experiences. These need not be ambitious pieces, but may for example simply describe some not well known methodology, suggest or tell of procedural innovations, discuss successes or frustrations in getting efficient working relationships along some production line, show the complexity of an administrative process peculiar to intelligence, or supply some bit of intelligence history that should be recorded. The views of intelligence officers about the problems they live with are likely to be more useful than the constructions of those who theorize about them.

Manifest characteristics of climax in scientific research which may betray areas of future breakthrough.

THE SYMPTOMS OF SCIENTIFIC BREAKTHROUGH

Scientific intelligence has the responsibility for guarding this country from scientific or technological surprise, and to that end tries within practical limits to maintain constant surveillance over all foreign research and development. The evaluation of what is actually being done or published in a scientific field is certainly the best basis for detecting the imminence of a breakthrough there. But it is clearly impossible to keep all the many facets of modern scientific research under constant surveillance, and intelligence analysts must in practice confine their work to the major fields of obvious importance. A significant advance in some obscure field of basic science may thus go unrecognized until its application brings it to the forefront of world attention.

There may be a way, however, to mount a less exhaustive watch which would have some chance of uncovering research of potential breakthrough caliber even in obscure fields. If we can identify a group of common factors—general attributes of the research, of the scientists involved, of the environment—which characteristically tend to be associated with scientific breakthrough, we could set these up as tentative criteria for areas in which breakthrough may be impending. Research seeking to identify such common factors was done at Teachers College, Columbia University, in 1957–58 by six Ph.D. candidates in the physical and natural sciences. This article summarizes the results of their study.¹

Methodology

The researchers selected for study certain breakthroughs in four fields—biology, medicine, chemistry, and phys-

¹ Entitled *A Study of Patterns Which Have Characterized Certain Major Scientific Breakthroughs of the Twentieth Century*, by Laurence J. Grassman, O.S.B., Eugene V. Petrik, John H. Rosengren, Mrs. Esther B. Sparberg, Herbert H. Stewart, and the author.

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ics—which came to fruition during the twentieth century and have had a marked effect upon western culture. From lists of major scientific discoveries, some assembled from reference works and some submitted by members of a panel of 15 expert consultants, they made their final selection with an eye both to the apparent importance of the discoveries and to the availability of detailed information on them. The four breakthroughs selected were the following: relativity and the quantum theory; atomic energy; chemotherapy; and plant auxins.

The first of these comprised three major *theoretical* advances, Max Planck's quantum theory in 1900 and Einstein's special and general theories of relativity in 1905 and 1915. The others were all characterized by successful *experimentation*. The atomic energy breakthrough was viewed as the result of the concentrated experimental work done by some 30 scientists between 1939, when Hahn and Strassman identified barium among the products of neutron-bombarded uranium, and 1942, when Enrico Fermi and others working under Arthur Compton constructed the first chain-reacting pile. Chemotherapy began with Ehrlich's discovery of salvarsan in 1910, and 14 scientists figure prominently in its development up through Waksman's production of streptomycin in 1944. The discovery of the first plant auxin—growth hormone—was the work of one young botanist, Frits Went, in 1926. Altogether, 50 contributions by 47 different scientists can be distinguished in these four breakthroughs.

The case histories of these contributions were reconstructed by studying the scientific papers reporting them, by examining published accounts, at first or second hand, of the circumstances surrounding them, by assembling biographical and autobiographical material, and in some cases by corresponding with the responsible scientists or their associates. A description of the approach, techniques, and equipment used in the course of a breakthrough development was supplemented by analyzing the scientific climate at the time, the stream of scientific ideas which converged at the breakthrough point, the public environment outside the scientific world, the nature and vigor of support for the scientist in his research, and the personal characteristics and circumstances

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of the scientist. The fifty cases were then compared and their common features identified and assembled into a pattern which might have predictive value for use in intelligence.

The results, not startling to anyone well acquainted with scientific activity, do constitute a methodical confirmation and logical presentation of the characteristics of scientific advance, which may serve to dispel some popular misapprehensions about scientists and their work. Since the case histories were all taken from the Western world, some of their features will not be applicable to other societies, notably the Soviet. But refinement in dry-run and live application, with adjustments where necessary to Communist conditions, might make them a first step toward a predictive methodology. They can be grouped for summary in categories—the general state of affairs in science, the state of the particular scientific art, the sociological environment, the attributes of the scientist, and the immediate circumstances of the breakthrough.

The State of Scientific Affairs

The contributions to breakthrough were not made in isolation from other progress, past and contemporary, in related—sometimes not obviously related—fields. The quantum and relativity theories of the first two decades of this century, with their widespread effects in all scientific fields, were in particular one of the preconditions for the nuclear physics breakthrough. Planck and Einstein, in turn, traced their own ideas which flowered in these theories back through many scientists of the eighteenth and nineteenth centuries to their foundation on Newtonian mechanics and optics. Fleming owed his penicillin and Waksman his streptomycin to Ehrlich, Koch, Pasteur, and ultimately Galen. Went found his auxin with the help of Darwin, Loeb, Fitting, and others. The interrelations among sciences and the cumulative nature of scientific advance thus illustrated create one necessary condition for breakthrough—the free communication of scientific information. Secrecy failed to retard the military application of atomic energy only because the basic discoveries had already been made in open collaboration by scientists of many nations. New facts turned up by a scientist in one corner of the world were subjected to scrutiny and verification in an-

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other, led to new questions asked of the universe in a third, and stimulated new answers in a fourth.

A related circumstance notable particularly in the many contributions to the achievement of nuclear energy release and to the development of chemotherapy was the part played by a corps of inconspicuous scientists and technicians conscientiously gathering and patiently checking data in a series of unspectacular advances toward the goal. The scientists who became famous all acknowledged their indebtedness to the many who toiled in obscurity to make possible the eventual giant stride. Another condition favoring breakthrough, therefore, especially in experimental fields, is the presence of a great army of scientific workers doing lesser jobs.

We shall discuss later the attributes of the breakthrough scientist, but one of them seems universal and important enough to include as a third element in the general state of scientific activity: the scientists studied were clearly all men driven strongly toward some goal, usually characterized by the urge to reduce complexity to a unitary understanding of the environment. The third general condition favoring breakthrough is then the presence of inspired men devoting their lives to a compelling scientific purpose.

The State of the Art

The breakthroughs were all made when the stage, so to speak, was set for them, and in fact it is something of a truism to say that a necessary condition for breakthrough is that the state of the art be such as to provide some important unanswered questions and a theoretical foundation, mathematical tools, equipment, and techniques to answer them. Viewed thus, the breakthroughs seem but the next logical step in a series of lesser advances—the relativity theory, in answer to Michelson-Morley's fruitless attempt to detect an ether drag on light, going one step beyond Lorenz and Poincare, whose steps in turn led back to Maxwell and Faraday, the fathers of field theory; the nuclear breakthrough reached in logical progression from the first exploration of the new worlds of radioactivity and the cathode ray tube, backed by the quantum theory and Einstein's mass-energy equation; the antibiotics developed by systematic experimentation; the auxins found by application of newly developed techniques to

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the old problem of phototropism, once teleological explanations no longer satisfied the scientist.

This logical quality in scientific advance has led some schools of thought to say that a ready state of the art is not only a necessary but a sufficient condition for breakthrough, that an advance is inevitable when the time is ripe for it; and these people quote Einstein to the effect that the special theory of relativity would have been born about the time it was even if he himself had not. Einstein, however, thought that the same statement would not be true about the 1915 general theory of relativity; and the study of these selected cases does not support the logical inevitability hypothesis. It would have been more logical to arrive at the quantum theory through an extension of Helmholtz' work than through Planck's thermodynamics. The mathematical tools which converted the special to the general theory of relativity had been there, unused, before. The potential of penicillin lay unrecognized for a dozen years. There is no logical reason why the plant auxin could not have been isolated by Loeb or Fitting, ten or twenty years before Went found it. The state of the art made the breakthroughs possible and likely, but did not bring them about.

The Sociological Environment

Scientific activity thrives or sickens according to the kind of society in which it lives, and a generally thriving science is of course a condition favoring breakthrough. The influence of society is felt in science through education, facility of communication, financial support, and moral support or stimulus. These factors are examined with reference to the cases under study and, more broadly, to their influence on twentieth-century science as a whole.

Education. The nineteenth-century extension of education to the middle classes, broadening the personnel base of scientific activity, is reflected in the fact that almost all the 47 scientists here studied came from the middle classes. The continued democratization which has now opened the universities to all classes must be counted a principal factor in the geometric progression of scientific advance in this century.

Communication. Easy communication among scientists was established above as a condition favoring breakthrough. The

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proliferation of media for scientific communication in today's society provides for this intercourse as never before. On the other hand, national antagonisms and especially wars tend to bind it with requirements for secrecy.

Support. The universities furnished not only the personnel base but also the facilities and financial support in most of the cases studied, as in scientific activity generally during this period. The funds came in large measure from government, but the use of academic institutions as disbursing agents left them free from specific controls. The current trend toward industry-supported research was illustrated in some measure in dye and drug firm help toward the development of chemotherapeutic agents. Support from industry here, like the support from government in the nuclear breakthrough, was predicated on the development of applications rather than aimed at basic research. An adequate level of support for basic research appears to be independent of general prosperity or depression; the poverty of the thirties seems not to have retarded the mounting flood of scientific discoveries. Perhaps the surplus of resources available to science in prosperity tends to be squandered in hectic technological development.

Moral Stimulus. Basic science appears indifferent also to popular acclaim or disapproval. Whether idolized as the hero of technocracy in the twenties, hooted down as the creator of depression in the thirties, or tolerated as an impractical wizard in the forties, the scientist stuck to his laboratory, stimulated by his own goals. An obstacle in public doubt and suspicion was noted only in the early history of the work on chemotherapy. The stimulus of national aims is generally not strongly felt by the notoriously unnationalistic scientist, but great causes may spur him on: the refugee scientists who contributed to the nuclear breakthrough were moved not only by their scientific purposes but by bitterness toward Naziism and apprehension of a German breakthrough in atomic energy. That social needs may provide a stimulus was evident in the development of chemotherapy and in the work on plant growth substances. And finally the great stimulator of society, war, galvanizes science too, mostly toward technological applications but with repercussions on basic research, as seen

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in the course of nuclear energy development. The cold war, with its less urgent demand for immediate applications, is better than hot war in this respect as in others.

In summary, we can say that sociological conditions favoring breakthrough include the following: universal education; absence of political inhibitions on scientific intercourse; adequate funds administered by an agency, such as the universities, interested in knowledge for its own sake; compelling social needs, especially for medicine and biology; the stimulus of international competition without a division of knowledge into national compartments.

Attributes of the Scientists

The 47 scientists studied included three women, two in medicine and one in atomic energy. Eighteen were born before 1900, the other 29 between 1900 and 1920. They were of many nationalities. Statistical studies of available data on them yield the following results.

Family Background. The chances are at least 2 to 1 and probably as high as 4 to 1 that at least one of the breakthrough scientist's parents was well educated. There is an equal probability that the family was in moderate to comfortable financial circumstances or better. The chances may be as high as 4 to 1 that the scientist was reared in a religious atmosphere. Incomplete data make it 11 to 2 that he was either the youngest or the oldest of the children but 18 to 1 against his being an only child. The boys born to the scientists' parents outnumber the girls 3 to 2. The chances are rather high against the family's having another scientist, but perhaps 4 to 1 in favor of its having others engaged in some profession.

Choice of Vocation. The great majority of the scientists became interested in science early in life. Many engaged in scientific hobbies and showed exceptional ability in childhood. Although many received encouragement in the choice of this vocation from their family, friends, relatives, associates, and some from their teachers, the greatest single motivating factor was their own interest. In choosing their fields of research, their own recognition of the need for development of some field, the presentation of an opportunity, and the guid-

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ance of teachers seem to have been factors of equal importance.

Education. No significant pattern was found at the elementary school level, but the chances are 3 to 1 that the scientist's undergraduate school was a large one, the same that it was state-supported, and 2.5 to 1 that it was both. More than half of them left their undergraduate school to enter a large graduate institution. All 47 attended some graduate institution; the chances are 9 to 1 that it was a large one, better than 3 to 1 that it was state-supported, and almost 2 to 1 that it was both. Most of them had a Ph.D. or the equivalent at the time of their major contribution. A few were actively engaged in their doctorate research. At least half had continued their research studies past the doctor's degree.

Private Life. The scientists' marital status conformed to the normal pattern for the population. Their economic status followed the normal pattern for college graduates: most of them were at least moderately well off. No significant pattern was found either in their religious or in their political affiliations. Most of them were reported to be in good health. Some were active in athletic sports.

Age at Time of Contribution. This study confirmed other evidence² that advances are made with the greatest frequency by scientists between 30 and 39 years old. There is a sharp decline from these to the next most prolific age group, 20 to 29 years old, which is then followed closely by those 40 to 49 years old. Eighty-six percent of the contributions were made before the scientists reached their fiftieth birthday.

Professional Standing at Time of Contribution. The data from these 50 cases yield a zero probability that a major scientific advance should be made by anyone except a scientist actively engaged in research. The probability is also almost *nil* that a major advance should have been made by a scientist whose talent was not recognized at least by his immediate colleagues or the person directing the research. The probability is extremely high that the scientist who made a major

² See Harvey Christian Lehman, *Age of Achievement* (published for the American Philosophical Society by the Princeton University Press, 1953).

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discovery had already published the results of previous research. The chances are better than 2 to 1 that he was in fact an acknowledged authority in his field. The large majority of the breakthroughs were made while the scientists were engaged in their regular research in their usual places of employment. Almost all of them were connected with academic institutions; only about 10 percent were connected in any way with industrial organizations, and only 2 percent were working solely in industry.

Composite Type. The study thus gives a composite portrait of the typical breakthrough scientist as a person who early in life became interested in science and in adolescence had a scientific hobby. He came from an educated, middle-income family, where he led a normal childhood life, probably getting more than average encouragement in his choice of science as a career. He attended the usual elementary and secondary schools but showed a decided preference for the larger graduate institutions, and more than likely he continued his studies after receiving the doctorate. He became a professor or fellow actively engaged in research at an academic institution. He published a number of scientific articles, and by the time he made his major discovery he was well known, although still probably only about 35 years old. He was fortunate in having chosen a field ripe for major advances, and fortunate also in his choice of associates. He seems to have led a normal and reasonably happy life, having the intellectual rewards of achievement in his chosen field and not much worry over financial matters.

Circumstances of the Breakthrough

In an effort to arrive at a corresponding picture of the typical breakthrough situation, the data from the 50 contributions were analyzed and tabulated under two heads: First, nature and origin of the contribution, whether theoretical or experimental, whether arising out of diffused advance along a broad front or from a concentrated push on a narrow front, whether lying in the scientist's own field or not. Second, organization and support of the research work, whether done by an individual, working alone or with assistants, or a team, by whom paid for, whether hindered by lack of funds, whether controlled by the sponsor, whether helped

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or hindered by location, space, or equipment, and whether helped or opposed by other scientists.

Nature and Origin. Six of the contributions were classified as pure theory, and the remainder divided about equally between pure experiment and experiment plus theory. The pure theories advanced science along a broad front, most of the others on a narrow front. One, the penicillin spore on Fleming's bacterial culture, could be classified as an accident under propitious scientific circumstances. All the other experiments which led to contributions were planned, many of them *to clarify the unexpected result of a previous experiment*. None of the contributions lay outside the scientist's major field of interest or a closely related one.

Organization and Support. Team projects outranked individual research, with or without assistants, by a ratio of 3 to 1. About 76 percent of the scientists got all or part of their financial support from academic institutions and private foundations. About 14 percent got some government funds, but only about 2 percent were entirely supported by the government. Industry helped finance about 8 percent, but entirely supported only about 2 percent. Probably fewer than 10 percent of the scientists had what might be called generous budgets, but about 80 percent were receiving adequate financial support. Another 8 to 10 percent produced their contributions under very meager financial circumstances. Little or no control was exercised over the funds made available.

Physical conditions for the research were in general adequate. The favorable location of many of the laboratories may have been an important factor. New techniques were a factor in 50 percent of the contributions, new materials in 16 percent, and new or improved equipment, in conjunction with new techniques or materials, in 10 percent. About 85 percent of the scientists, all those on whom this information could be obtained, had the benefit of some kind of encouragement from other scientists. About 15 percent, before World War I, were hindered by some form of professional opposition. Scientific discoveries of the rank under discussion are never ignored by other scientists.

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Patterns for Prediction

In assembling these common elements into patterns which intelligence might use as criteria for indicating the breakthrough potential of any particular piece of current research, we should recognize that no one can predict a specific breakthrough in the sense of anticipating its essential features. Such a predictor would create the breakthrough itself. We only hope to define the conditions that make some kind of breakthrough likely in a given area, much as hurricane prediction, although it cannot foresee a particular hurricane arising at a precise point in space and time, can at least set a twenty-four hour watch on any area where certain defined conditions have been found. When the patterns which have been associated with past scientific breakthroughs are found to characterize any field of current scientific research, that area should bear watching.

General State of Science. As we have seen, a major advance, irrespective of field, is most likely to be made when there is free and untrammelled interchange of the accumulated knowledge of all the sciences, and when the leaders of science, each dedicated to his particular goals, are supported by a large corps of ordinary scientific workers and technicians.

The State of the Art. If the experimental research in some field appears to have reached a plateau whereon old data are being refined and more precise measurements made but no new evidence generated which cannot be explained satisfactorily by current theories, where the tools of the trade are being fully used and are giving satisfactory results, and where the scientists believe they know all the answers or at least what to do to get the answers, no major advance is likely to be in the offing. But when scientists in a field are developing new experimental evidence that does not fit the old factual patterns and cannot be explained satisfactorily by present theories, and realize that they are dealing with new evidence, not "experimental error," then the science will begin to advance to the extent that techniques, instruments, and the materials required become available (sometimes from the developing state of another science), and a major advance is likely as the next logical step in a series of lesser advances.

Characteristics of Current Research. No major advance will be made in an area of science where little or no basic re-

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search is being done, and there is bound to be some correlation between likelihood of breakthrough and quantity of current research. Intelligence analysts can get some idea of the amount of research being conducted in a given field by merely counting the number of scientific papers produced. The fear that many research papers may be unpublished seems not to be well founded: the results of basic research seem always to get published in some journal or other, since military secrecy, beginning to operate only after the breakthrough is almost accomplished, cannot even then dam all the flow. And peripheral areas not readily recognized as pertinent often hold the key to breakthrough.

Sheer quantity, of course, is no assurance of impending breakthrough. The features common to the advances we have studied show that research most conducive to scientific breakthrough will be conducted by a group of scientists working as a team in their major field of competency, with capable technical support, to advance scientific knowledge along a narrow front. It will have adequate financial support free from control, and moral support from other scientists. It is likely to consist of experiments designed to clarify the unexpected result of previous experiments, and to feature the use of new techniques, new materials, improved equipment, or all three.

The Scientists. The most common and outstanding characteristic of breakthrough scientists, we have seen, is youth combined with experience in the field in question. The scientist 30 to 39 years old will have had 10 to 20 years of research experience. The one who makes a great discovery, most common at this age, will almost invariably have worked in it for some years during and after his study for the doctorate. He will have published articles concerning his past or present research. He is likely to be attached to an academic institution or non-profit foundation, a recognized authority in his specialty. He almost invariably has attended large, well-known academic institutions, at least for his doctorate work.

As breakthrough scientists have not appeared suddenly from total obscurity, so they have not come, either, from the lower economic strata of society nor been freaks or even infant prodigies. They have come from homes of moderate

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to comfortable financial circumstances, with one or perhaps both parents well educated. They grew up without peculiarities except an early interest in science. They lead the normal family lives of well educated, upper-middle-class society.

Sociological Factors. Scientific advance is most likely when society is in sympathy with scientists and their effort and does not create artificial restraints or barriers to their intercommunication or try to make them the mere providers of comforts. The favorable economic situation is one in which adequate funds can be made available for basic research—not necessarily times of greatest prosperity, which may be too busy developing previous discoveries to feel the need for further basic work. Politically also, the need for basic research must be recognized, whatever the circumstances that bring it to attention. Some nations foster scientific research in time of war (the United States) and some do not (Nazi Germany). Some governments favor research in time of depression and forget about it in time of prosperity. One country (the USSR) incorporates it into its national philosophy, and another (the United States) fosters it to keep ahead of the other. Finally, scientific advance is most likely when education is widespread and scientific education broad, not a mere training of technicians for the development of applications.

Check-List of Criteria

The five most critical of the conditions described above might be listed in abbreviated form as a kind of prospector's wand to be tested by intelligence analysts for its value in locating a subsurface breakthrough in any current field:

1. New experimental evidence that cannot be satisfactorily explained by present theories is being discovered at a rapid rate.
2. New techniques, new materials, and new or improved equipment are being brought to bear on an old problem.
3. A group of scientists is assembled to make concentrated attack on the problem.
4. This group is composed of relatively young men well qualified in this specific field.
5. The group has adequate technical and financial support and professional encouragement.

A unit of the Department of Commerce now serves the scientific public with an intelligence community product.

PUBLICIZING SOVIET SCIENTIFIC RESEARCH

Shortly after Sputnik I jarred the nation on 4 October 1957, people began looking for someone to blame; they rapidly settled upon the Government and charged it with a total neglect of Soviet scientific information, spreading the tall tale that Soviet scientific periodicals were gathering dust on the shelves of the Library of Congress. If the nation's shock could indeed be laid to some fault of the Government, that was the wrong charge, as previous articles in the *Studies* have shown.¹ Some half million pages of translations, condensations, and abstracts from Bloc—mostly Soviet—scientific literature had been issued by the intelligence community since the beginning of 1949.

The Government's fault, if there was one, with respect to this literature, aside from its general disposition to encourage public disrespect for propagandistic Soviet emanations, was the lack of vigorous measures to acquaint the U.S. scientific public with the published results of Soviet research. The intelligence community, however, for all that its responsibilities lie in the opposite direction from publicity, had for its own selfish reasons begun efforts to repair this omission even before the epochal earth satellite was launched. In 1958, thanks to the cooperation of the Department of Commerce and the Sputnik's lubrication of Congressional purse strings, these efforts reached full fruition.

Intelligence Doffs the Veil

The history of the community's treatment of information from Soviet scientific literature is one of progressive relaxation of restrictions, ending almost in an active peddling to the public. Up through 1949 this material was stamped *Restricted*

¹ George A. Pughe, "The Dust That Isn't There," II 2, p. 71; J. J. Bagnall, "The Exploitation of Russian Scientific Literature for Intelligence Purposes," II 3, p. 45.

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when it was pure dead-pan translation, *Secret* when it was tailored to meet intelligence requirements. It was not just from force of habit that such stamps were applied: the Soviet security laws of 1948 throttled the flow of Soviet scientific periodicals to the United States until it reached an all-time low of 69 titles in the winter of 1949-1950, fewer than forty of them of intelligence value, while a full hundred unclassified Soviet periodicals were unobtainable outside the USSR.

In 1950, however, this trickle began the steady increase which has brought it to its present flood tide, and the intelligence community now recognized the periodical literature as its major and indeed only encyclopedic source of information on Soviet scientific organization, activities, and personnel. The need for classification faded with the softening of Soviet security practices, and it began to be more and more desirable for community purposes to issue this information in unclassified reports. The reasons an unrestricted availability is desirable lie in the difficulties of scientific intelligence production: the range of subjects that must be covered is all out of proportion to the number of scientific hands available in the community. A tremendous number of pin-point specialists in numerous divergent disciplines are required to evaluate the foreign data. Scientific intelligence, in fact, seems to be best served when *all* U.S. scientists are well informed about research conducted abroad, notably in the USSR, in parallel with their own specializations.

The reports were therefore declassified in 1950, and in 1953 came the first diffident move to make them publicly available: they were anonymously deposited in the Library of Congress, the Department of Agriculture Library, the Crerar Library in Chicago, and some others. This was a step in the right direction, but the producers of scientific intelligence, whether in Air Force, Army, Navy, AEC or CIA, still had difficulty getting the translated data to all the many scientists and contractors assisting them. Two or three years later the National Science Foundation, acting for the U.S. scientific community, began to help: in cooperation with several learned institutions it sponsored translations to be sold by subscription at a modest fee. The National Institutes of Health began a parallel program for medical translations, and together the

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two now offer more than 50 Soviet scientific periodicals translated from cover to cover. The intelligence community advised and assisted in setting up both these programs.

The OTS Solution

In the search for a more comprehensive solution a meeting of the various processors and users of Soviet scientific data was held under National Science Foundation auspices on 3 October 1957, one day before Sputnik I. The Department of Commerce, which has the legal responsibility for disseminating technical information to the public but had no appropriation to handle the massive quantities of Soviet scientific literature, was invited to send a representative. It was unanimously agreed at this meeting that the intelligence community should make the material available, unclassified, to Commerce's Office of Technical Services, and that the Department should request from the Congress the funds to publish and disseminate it. In due course, with help from the Sputnik, OTS got the money, and since 1958 U.S. scientists have at a nominal cost had access through this channel to large volumes of data translated from Bloc sources.

The OTS intake, in its second year now, is a huge and growing one. The intelligence community's product has grown seven-fold from its low in 1948 to nearly 150,000 pages of abstracts and translations in 1959. To this flow contribute eight principal intelligence components—Air Force's Air Information Division in the Library of Congress and its Air Technical Intelligence Center, Army's ACSI, Corps of Engineers, Signal Corps, and Ordnance Corps, the Atomic Energy Commission, and CIA's Foreign Documents Division. Yet another 50,000 pages are supplied from outside the community by the translation programs of the NSF, the NIH, the Joint Publications Research Service, the Consultant's Bureau, Pergamon Press, and others.

For controlling and researching this total of some 200,000 pages of translated Bloc studies arriving annually, OTS sells a semi-monthly listing of "Technical Translations" done in and out of government and the semi-monthly "Scientific Information Report" produced by CIA, which presents the highlights of research published in nearly a thousand Sino-Soviet Bloc periodicals. Complete tables of contents of Bloc periodicals

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are contained in the "Monthly Index of Russian Accessions" and "Monthly Index of East European Accessions" available at the Library of Congress and in the "Current List of Medical Literature," at the National Library of Medicine. Finally, CIA still produces the venerable "Consolidated Translation Survey," now in its eleventh year. Not generally available to the public, to be sure, it is nevertheless unclassified and may be sent to individual scientists when government needs are thereby served.

The intelligence community, which has neither the function nor the funds to publish reports for the general public, has thus in its own interest done the next best thing—helped arrange and supported appropriations for others to disseminate the information, making available all its unclassified production on a regular basis for public use.

A historical object-lesson on the consequences of letting ill-considered intelligence assumptions determine a course of action.

PORTUGUESE TIMOR: AN ESTIMATIVE FAILURE

The preparation of U.S. intelligence estimates has become an organized and methodical process. In response to a change in the international situation or in accordance with a more or less regular schedule, an estimate is laid on by the USIB. Terms of reference are circulated to members of the intelligence community, agency contributions are made, and a composite draft is produced by an estimates staff. After consideration and revision by representatives of the agencies, a final draft is presented to the USIB for concurrence in the National Intelligence Estimate of a given situation, provided to guide American military and political policy. Under special conditions this process is shortened, but not essentially changed. A similar process goes on in the governments of a number of Western countries, and we can probably assume that equivalent joint intelligence exercises are undertaken by the Soviet Party and Government.

This unhurried and systematic mobilization of available intelligence resources to bear on a given problem is a relatively recent phenomenon, one which can be said to have begun during World War II. Before that time intelligence estimating in most countries was a pretty haphazard affair. Strategic intelligence as a function distinct from policy-making was usually regarded as superfluous to the extent that it was regarded at all. Accordingly, until well into World War II, intelligence estimates appear to have played only a very modest role in the making of political and military decisions.

Of the many examples that could probably be drawn from the earlier years of World War II to show the disastrous consequences that followed from operational plans based on inadequate intelligence consideration, one of the most poignant, it seems to me, was the Dutch-led occupation of Portuguese Timor, the isolated overseas territory of neutral Portu-

Portuguese Timor

gal. This rather sparsely inhabited eastern half of Timor, the easternmost large island in the Lesser Sundas, lies almost 2,000 miles southeast of Singapore but only about 500 miles from the north coast of Australia. Its proximity to Australia gave the otherwise remote and unimportant territory a disproportionate strategic value which, in the fall of 1941 and early 1942, brought it an unwelcome prominence not known before, or since.

The "Estimate"

The nature and extent of Japanese interest in Portuguese Timor in 1941 are not fully known. At that time, however, Japanese interest in the East Indies was primarily attracted to Sumatra, Borneo, and Java, where major sources of strategic raw materials were to be found; and the fact that Japanese operational plans in Southeast Asia prepared in 1941 did not originally envisage a landing in Australia removed what would have been the principal attraction for them in the Portuguese territory.

Dutch archives for this period are not open to the public, and we are therefore thrown back on official histories to shed some light on this recondite corner of the history of World War II strategic planning. A Dutch official history of the period, *Nederlands-Indie Contra Japan*,¹ states that Japanese interest in an air service with Portuguese Timor

aroused great concern among the Allies. Timor, indeed, formed a very important link in the defense chain which linked Malaya, the Netherlands Indies, and Australia. A Japanese air base in Timor could form a very dangerous starting point for further actions against Dutch and Australian territory.

The Dutch history goes on to note that Dili, the capital of Portuguese Timor, "which lent itself so well to the establishment of a base for amphibious aircraft, was only weakly held by the Portuguese, largely with native troops." The Portuguese "garrison," in fact, consisted of a company of indigenous scouts—*cazadores*—and a platoon of "Frontier Police" apparently assigned to immigration duties along the Dutch territory border.

¹ Historical Section, General Staff of the Royal Netherlands Army (Bandung, 1950) Vol. II, pp. 230-232.

Portuguese Timor

The Dutch history continues:

These troops were not in a secure enough position to undertake with their own small strength to oppose a Japanese attack. The Netherlands Indies Government was thereby faced with a difficult decision. On the one hand was the danger of a Japanese occupation of Portuguese Timor, on the other hand occupation of this territory by us meant aggression against the territory of a friendly power. Since it could be foreseen practically with certainty that Japan would not hesitate to aim at Timor-Dili as a point of support, it was decided in November, 1941, to occupy the place with Dutch and Australian troops and thereafter to offer the Portuguese Government protection for that territory.

This November decision was apparently contingent upon an actual outbreak of war in the Pacific.

The Dutch history does not make clear whether any more detailed intelligence estimate was formulated on this point. Given the relatively primitive development of intelligence estimating at the time, it seems unlikely that the question was considered at any great length. Faced with an imminent Japanese assault in great force on the Netherlands Indies—which seemed virtually inevitable following the failure of the Dutch-Japanese trade talks in June 1941—the Dutch appear to have assumed that the Japanese would opt simultaneously for all the strategic alternatives open to them and attack across the board, from Sumatra to Timor.

Yet in the economic and trade negotiations of 1940 and 1941 the Japanese had shown little interest in Timor, emphasizing rather their desire to obtain additional supplies of the raw materials produced in Sumatra, Borneo, and Java. The few signs of Japanese interest in Portuguese Timor cited by the Dutch history hardly constitute convincing evidence of Japanese intent to occupy the territory. Nor do other available sources provide such evidence in recording Japanese economic interests there. A semi-official Portuguese source, *Timor Portugues*,² states that Japanese firms began to invest capital in Portuguese Timor in 1934 and that in 1938 a Japanese Consulate was opened in Dili. There is no indication that these Japanese interests were more than purely commercial. Portuguese Timor was and is a producer of modest consequence

² By Capt. Helo Felgas, *Agencia Geral do Ultramar* (Lisbon, 1956) pp. 287-288.

Portuguese Timor

of high-quality *Arabica* coffee. After the opening of the Japanese Consulate in Dili an Australian Consulate was also established there.

Even the efforts made by the Japanese to obtain landing rights in Dili need not have been considered particularly ominous, for an air route from Japan to Australia via the Palaus and Portuguese Timor is fairly direct, avoiding the long detour to the west through Hong Kong, Singapore, and Batavia. Moreover, an airline operating from Japan to Australia via Singapore and Batavia would have faced heavy competition from the British-owned Imperial Airways, particularly on the Singapore-Australia segment. The Dutch estimate of Japanese intentions towards Portuguese Timor, therefore, appears to have been both hurried and poorly done. The extent of Australian participation in this estimate and the consequent decision to occupy the neutral territory is not known, but Australian agreement to the action must have been obtained.

The Action

If the estimate was poorly done, the operational response was even worse. After the outbreak of hostilities on December 8, the Royal Netherlands Indies Army prepared to occupy Portuguese Timor. The action was carried out on December 17 by a combined force of about 600 Dutch-led Indonesian troops and some 300 Australians. The combined force was equipped with four 75-millimeter field guns, six sections of machine gunners and three squads of light mortars, in addition to the usual small arms with which infantry companies were then equipped. The force had no tanks, no anti-tank guns, no provision for air or sea support.

This action was undertaken at a time when the forces available for the defense of the far more important islands of Java, Sumatra, and Borneo were already much too slender to oppose the avalanche of Japanese troops pouring into Southeast Asia. The size and weight of the forces already poised to attack the Philippines, Malaya, and the Netherlands Indies were reasonably well known to the Dutch and the other Allied countries, and against this background the absurdity of the unsupported and ill-equipped 1,000-man expedition to occupy Portuguese Timor stands out clearly.

Portuguese Timor

The Portuguese response to the Dutch-Australian invasion was non-violent, but the Portuguese Prime Minister, Dr. Salazar, immediately protested to the British government. He apparently sought British assurances that the Allied invasion forces would be withdrawn upon arrival of Portuguese East African troops to be dispatched from Lourenco Marques in Mozambique to reinforce the Timor garrison.

The Aftermath

Whatever the arrangements between the Portuguese and the Allied nations, the presence of an Allied force in Portuguese Timor inevitably drew the attentions of the Japanese. As their invasion forces moved deep into the Netherlands Indies in late 1941 and early 1942, they undertook preparations for the assault on Timor. On February 20, 1942, simultaneously with a landing near Kupang, capital of Dutch Timor, Japanese troops of the 228th Infantry Regiment, supported by destroyers, went ashore near Dili and met only light resistance. The Dutch troops withdrew towards Dutch Timor, where they were eventually forced to surrender, and the Australians retreated to the center of the island. From there they carried out guerrilla operations throughout 1942, but in February 1943, after suffering heavy casualties, they were withdrawn to Australia by submarine.

From a faulty intelligence estimate to an ill-considered operational plan, the Allied occupation of Portuguese Timor presents a sorry spectacle. Much the worst of it is the fact that this performance probably brought on the Japanese invasion of the territory. It cannot be said with certainty that the Japanese would otherwise not have taken action, but it should be noted that they respected the neutrality of another Portuguese territory in the Far East, Macau, which remained wholly in Portuguese hands throughout the war. Although a British consul was resident in that territory during the war years, no Allied troops were ever stationed there. Given its relatively few attractions, it seems reasonably plausible that the Japanese would have left Portuguese Timor alone also, if the Allied nations had not been the first to occupy it.

For the balance of the war a fairly large Japanese occupation force remained in Portuguese Timor. This force, in turn, presented an attractive target to Allied bombers, based less

Portuguese Timor

than 500 miles away in Darwin, Australia: Dili was virtually flattened by Allied bombardments. Late in 1942 the Governor of the territory, Sr. Manuel Ferreira de Carvalho, ordered Portuguese citizens (as distinguished from the indigenous "protected persons") in Timor to concentrate in an area west of Dili, on the north coast. There, he felt, he could provide them some measure of defense against the depredations of the occupation force and the indigenous bandit gangs encouraged by the Japanese. While this move gave them some protection, their supplies of food, medicine, and clothing steadily dwindled in quantity and quality throughout the rest of the war, and eventually 50 of them, out of a total of some 300 in the territory, died. Several thousand indigenous inhabitants died from causes directly or indirectly connected with the Japanese occupation.

Although the certificates of death issued for these people (if, indeed, any certificates were made) may have given malaria, beri-beri, or complications of dysentery as the immediate cause of death, the real cause they might have cited was "Bad intelligence estimate."

INTELLIGENCE IN RECENT PUBLIC LITERATURE

MILITARY INTELLIGENCE IN WORLD WAR II

THE LONGEST DAY. By *Cornelius Ryan*. (New York: Simon and Schuster. 1959. Pp. 350. \$3.95.)

D Day. By *David Howarth*. (New York: McGraw-Hill. 1959. Pp. 251. \$4.95.)

INVASION: 1944. By *John Froyn Turner*. (New York: G. P. Putnam's Sons. 1959. Pp. 248. \$3.95.)

The fifteenth anniversary of the greatest triphibious assault in history was marked by the publication of these three books devoted exclusively to the events of that sixth day of June, 1944. By far the best written, most concerned with intelligence aspects of the action, and most skillfully put together is Ryan's *The Longest Day*. Like Howarth, Ryan bases his story largely on the personal accounts of participants, but by concentrating on fewer individuals and developing some new material he has produced a better narrative.

The Longest Day tells how the senior German commanders were scheduled, ironically, to attend a *Kreigsspiel* at Rennes on 6 June to war-game the theoretical invasion of Normandy. It devotes a chapter to the two-part signal broadcast by the BBC to notify the French underground that the invasion had begun—how Admiral Canaris had learned of the code phrases in advance and correctly interpreted their meaning, how Lt. Col. Hellmuth Meyer, intelligence officer of the German Fifteenth Army, picked them up when broadcast, and how the Fifteenth Army was thus put on the alert while the Seventh Army, which held Normandy, was not. It shows how, after the action had begun, the German High Command was split on its evaluation, some believing it a feint to draw the defenders away from the Pas de Calais, the real objective of the main assault.

Howarth's *D Day* describes in greater detail the individual battles fought at the sites of air drops and on the beaches, supplying fewer personal anecdotes than Ryan's book. Al-

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though Howarth pays less attention to intelligence, he gives several pages to a description of British beach reconnaissance: in the preceding months men had been secretly landed on some 30 French beaches to determine the precise characteristics of the landing areas.

Turner's *Invasion: 1944*, "The First Full Story of D-Day in Normandy," is much more detailed than the other two, but far less interesting. Turner concentrates on logistic aspects of the operation, devotes the first half of his book to planning and preparations, and has little to say about intelligence.

BATTLE: The Story of the Bulge. By *John Toland*. (New York: Random House. 1959. Pp. 400. \$5.00.)

This is a superbly organized and excitingly written book about the battle in the Ardennes, from 15 December 1944 to 23 January 1945, in which three German armies smashed through a lightly held Corps sector of the United States First Army and were ultimately thrown back by the First and Third U.S. Armies plus a British Corps. Mr. Toland indicates that he travelled a hundred thousand miles and talked to more than a thousand participants in order to write this hour-by-hour account of the engagement. He has done a magnificent job in making a cohesive picture of the multitude of clashes (between units ranging in size from patrols to armored divisions) that collectively were the Battle of the Bulge—a struggle in which there was seldom a defined front and where knowledge of the enemy's location was certain only upon contact with him.

The author gives short shrift to the controversial question of whether the initial success of the Germans in the Ardennes was the result of a major breakdown in the Allied intelligence effort. At the beginning of his story he notes that on the night of 15 December "no Allied commander seriously feared a major German attack." A woman who came through the lines of the 28th Division did report having seen a mass of German tanks behind the Siegfried Line, and she was sent to Corps and then to Army to tell her story. Col. Dickson at First Army predicted there would be an all-out German offensive, and in the Ardennes; but his associates said he was a notorious pessimist, and overworked. The 12th U.S. Army

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Group said attrition was sapping the German strength. Montgomery was of the opinion that the Germans "cannot stage major offensive operations," and the SHAEF G-2 said the Germans were all but finished.

After describing the 38-day battle that caused 75,000 casualties, Mr. Toland concludes:

Much has been written of the failure of American G-2 officers to foresee the battle. The rather primitive, naive American intelligence system, based largely on procedures used by the Pinkertons in the Civil War, was not at fault; the sophisticated British system was just as blind. The blame should not even fall on Hodges, Bradley and Eisenhower, nor on the architects of strategy, Roosevelt and Churchill. The entire Allied world must share the blame. On the night of December 15, 1944, it breathed the air of complacency, optimism and self delusion.

Although Mr. Toland's graphic description of one of the decisive battles of movement in modern warfare is fascinating reading, particularly for those who fought in the Bulge, its intelligence interest is limited to this brief treatment of the estimative failure and a presentation of some challenging situations for the combat intelligence officer.

THE CLOCK WITH FOUR HANDS. By *James Leasor*. (New York: Reynal & Company. 1959. Pp. 314. \$5.00.) Published in England under the title, "War At The Top."

With some interpolations by Mr. Leasor, this book is in effect the diary of Sir Leslie Hollis, who was in an exceptionally advantageous position to observe the making of high British policy before and during World War II: as one of the secretariat of the British Joint Chiefs of Staff he attended some 6,000 meetings of that body. Unfortunately, the book does not live up to the potential of that experience, either in depth or in balance. It is rather a collection of anecdotes, some amusing but all highly opinionated, tied together by the thread of history. If Sir Leslie's diary contained more of what could be expected of it than appears here, or if he still had access to the Joint Chiefs' minutes, he would have done better to publish his own memoirs.

There are, however, some interesting tidbits here for the professional intelligence officer, telling for example how the British Government in the thirties refused to listen to intel-

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ligence reports on the growing strength of Germany, and how its surprise at the Japanese attack on Pearl Harbor equaled that in the United States. British intelligence correctly predicted the German attack on Greece. On the other hand, it so exaggerated German industrial production (which actually was less than British) that it seriously inhibited the planning for the second front.

A useful chapter devoted to topographical intelligence and the organization of the Inter-Service Topographic Department describes the way it had to scrounge for information. There was scarcely enough to brief the R.A.F. for a raid on the Dortmund-Ems Canal. When the army had to be evacuated from Dunkirk so little data was available about the beaches that travel agencies were asked for brochures, and then destroyers were sent for an on-the-spot look. The BBC broadcast an appeal for photographs taken by tourists, expecting to get eight or ten thousand, and were inundated by nine *million*.

“Know Thine Enemy.” By Captain *J. V. Heimark*. (U.S. Naval Institute Proceedings, Vol. 85, No. 8, August 1959. Pp. 65-71.)

Shows how good intelligence—primarily reconnaissance—on the part of the U.S. forces at Midway and ignorance of the enemy’s whereabouts at Pearl Harbor, in the Coral Sea, and in the Philippine Sea had a decisive influence on the outcome of these naval actions.

IN THE AMERICAN REVOLUTION

TURNCOATS, TRAITORS AND HEROES. By *John Bakeless*.
(Philadelphia: J. B. Lippincott. 1959. Pp. 406. \$6.50.)

In the past twenty years, since the publication of Morton Pennypacker's *General Washington's Spies on Long Island and in New York*¹ and Carl Van Doren's *Secret History of the American Revolution*,² more and more facts and documents concerning British and American intelligence in the American Revolution have come to light. Colonel Bakeless' misleadingly titled book is the first attempt to synthesize this new material with the old in a comprehensive intelligence history of the Revolutionary War.

The generally conceded fact that American intelligence on a large and organized scale dates only from World War II should not be allowed to obscure the wealth of espionage activity which the Revolution developed from casual and amateurish beginnings until it reached a point of considerable sophistication, with backed-up cover, secret writing, couriers, cut-outs, double agents, and deception operations. It is evident that George Washington himself was a masterful intelligence officer. He gave close personal attention both to the operational details of espionage and to the reports of his agents, whom he sometimes called "my intelligencers." He had a preference for spies "who live with the other side; whose local circumstances, without subjecting them to suspicions, give them an opportunity of making observations"; he noted that it was "necessary to be circumspect with double spies."

Washington had competent intelligence staff officers, but he himself planned many operations and made his own evaluation of the product. Colonel Elias Boudinot recalls how, after reporting some newly arrived intelligence, he repeated his own interpretation of it three times to the apparently uncomprehending General Washington, who then gave it a diametrically opposite evaluation. When the General proved

¹ Brooklyn: Long Island Historical Society, 1939.

² Garden City: Garden City Publishing Co., Inc., 1941.

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to have been correct, "I then said," wrote Colonel Boudinot in admiration, "that I never would again set up my judgment against his."

Washington initiated many intelligence deception operations, planting false strength figures and other information which he often compiled himself, advising his agents what could be safely passed along. The hero of the cherry tree legend could tell some whoppers. He made a practice of planting the same false story in several widely separated places, thus providing the enemy with "independent confirmations." One such plant was so successful that when a British intelligence officer laid the facts before General Howe, the British commander treated him "with contempt & Severity" for such bad reporting.

General Washington's view of intelligence as a matter to be kept "as secret as possible. For upon Secrecy, Success depends in most Enterprises of the Kind . . ." is illustrated in the realistic American use of cover. Agents sent into the British lines as Tories and deserters were officially listed as such, rewards were sometimes offered for their capture alive, and their families often suffered public opprobrium. In 1781, after five years of being hoodwinked, the British ordered no further protection for deserters; but then it was too late.

Turncoats, Traitors and Heroes attempts with indifferent success to tell its history chronologically, beginning in the fall of 1774 with Paul Revere and his friends in the Boston area, "the first American intelligence net," real amateurs. A little later, the Americans in Georgia are shown perpetrating a deception: they intercepted a letter from the Royal Governor there to the British commanders in Boston and substituted forged documents of contrary purport before sending it on. At Lexington and Concord, American intelligence was not bad; the British was probably better. And even the French introduced a couple of agents into the Boston area to see how the American cause was progressing.

By 1776, when the American Army had suffered many reverses, intelligence was improving; and an espionage-deception operation now brought a victory. John Honeyman, sent by

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Washington into Trenton as a butcher and horse trader,³ daringly brought back critical intelligence on the defenses of Trenton. Then, "escaping" from Washington's headquarters, he returned to Trenton and assured the Hessians that no action was to be expected from the Americans. It was with this intelligence preparation that Washington crossed the Delaware on Christmas night to the victory at Trenton.

General Washington's most important intelligence net was probably that of the "Culpers" in British-occupied New York City and Long Island. From the City the merchant Robert Townsend (Culper, Jr.) sent reports by courier (usually Austin Roe) to Samuel Woodhull (Culper, Sr.) on Long Island. There they were transferred to Caleb Brewster, whose whale boats took them across Long Island Sound to Fairfield, Connecticut, to one of Washington's finest intelligence officers, Major Benjamin Tallmadge, a Yale classmate and friend of Nathan Hale.

These reports, Colonel Bakeless indicates, were handled also by Alexander Hamilton, on Washington's staff. The book gives nothing further on Hamilton's intelligence activities, the extent of which has yet to be revealed. They may in fact have been negligible; but some historians say he served as an intelligence staff officer, and this reviewer has seen one document which reports the dispatching of spies, "Agreeable to Colo: Hamilton's request." The identity of the Culpers was a well-kept secret for a century and a half, until Pennypacker established it. Culper, Jr., continued to masquerade in New York as a Tory merchant until the war's end. The British knew that intelligence was leaking from New York, that many of the reports were written in secret ink, and that Caleb Brewster's whale boats ferried them across the Sound, but were unable to catch Brewster or discover the sources.

Colonel Bakeless adds comparatively little to what Pennypacker wrote about the Culper net, and he contributes nothing material to the history of Hercules Mulligan,⁴ the Arnold-André affair, or the case of Nathan Hale. But he does help

³ See "A Spy for Washington," in *American Heritage*, Vol. VIII, No. 5, August 1957, pp. 58-64.

⁴ O'Brien, *Hercules Mulligan: Confidential Correspondent of General Washington*. New York: P. J. Kenedy & Sons, 1937.

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unravel the threads of another American intelligence net, that established from New Jersey by Joshua Mersereau to operate behind the lines in Staten Island, showing among other things that there was a third Mersereau in addition to the two previously known. Joshua Mersereau is cited in General Washington's account books as paid "for Exp. & rewards of himself & others (whom he was obliged to employ) to open & carry on a Correspondence with persons within the Enemy Lines by the way of Staten Island." But money was sometimes short and agents complained. One wrote to Mersereau from Staten Island:

. . . as soon as you fulfil that Request of mine, a regular Correspondence shall take place & unless you indulge me in that, I could not resume my Pen on a Subject of this Nature with any degree of Propriety; for give me Leave to remark that altho my Breast throbs with the purest & most fervent Love to my country, that can inspire to Noble actions, & banishes from my Soul every *lucrative* Passion; Yet a laudable Ambition requires that I Should Secure the Approbation of my Country; e'er I enter on So dangerous an Undertaking . . . Before I bid you farewell, I must beg it as a particular favour that you will be careful of my Letters, as you value the Safety of your Friend . . .

Colonel Bakeless also relates in detail for the first time the role of an intelligence agent at the Battle of Saratoga. It will be recalled that the first battle for Saratoga was fought with inconclusive results in mid-September 1777. Then on October 7 the British attacked at Bemis Heights, were repulsed, and withdrew to the plain at Saratoga, where they surrendered ten days later. There has now come to light an affidavit made in 1852 by one Daniel Bryan, recounting the role played by his father, Alexander, in the battle of Saratoga. Alexander Bryan is said to have been asked by the American commander, General Gates, to go into General Burgoyne's lines and get information "as to the heft of the artillery" and the strength and contemplated movements of the enemy. Inside the British lines, he "purchased a piece of cloth for a trowsers when he went stumbling about to find a tailor and that thus he soon learned the strength of the artillery and the number of the Army . . ." as well as the plan to take Bemis Heights the next day. With this intelligence, General Gates was able to fortify himself on Bemis Heights and then counterattack and defeat the British.

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There seems little reason to doubt this story, and if it is reasonably correct Bryan's venture was a one-shot espionage job which may have changed the course of history. Saratoga is generally considered one of the decisive battles in world history: had the British won, the colonies would have been split in two at the Hudson River, and the American victory was an important factor in the French decision to enter the war. It is nevertheless difficult to go along with Colonel Bakeless' nomination of Bryan as "the most successful spy in history" and "the man who really won the American Revolution." The author, in this reviewer's opinion, also errs in dating Bryan's espionage in September before the first inconclusive battle of Saratoga. The internal evidence seems to place it before the second battle, fought on October 7. And Benson J. Lossing, in his *Pictorial Field-Book of the Revolution*,⁵ describes how a sergeant arrived at the headquarters of the American commander, General Gates, just before the British attack of October 7, "with intelligence of the movement of the British army." This sergeant may have been Alexander Bryan.

Turncoats, Traitors and Heroes also treats the activities of British intelligence in America during the Revolution. There were many (including Benjamin Franklin's son William, Royal Governor of New Jersey) whose loyalty to the British Crown was not shaken by rebel activities, and many loyalists were fruitful sources of intelligence. Even before the Revolution broke out, the British had established a high-level penetration of patriot activities in Boston. Their agent was Dr. Benjamin Church, Jr., a member of the Massachusetts Provincial Congress, privy to the patriots' innermost councils, and ultimately General Washington's Director General of Hospitals, whose long successful operations show up the early lack of American counterintelligence. But finally an indiscreet ciphered letter from him fell into patriotic hands; his courier-mistress, "an infamous hussy" but "subtle, shrewd jade," was interrogated by Washington himself and forced to reveal her principal's name; and the cipher was broken by Washington's specialists.

Historians of the period have noted before that Dr. Church must have begun to feel shaky, for he had found out that an American spy deep in Cabinet levels in London, whose name

⁵ New York: Harper Brothers, 1851. Vol. I, p. 60.

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has never come to light, was learning the identities of British agents in America. In November 1774, Paul Revere had been advised that there was a leak somewhere high in the patriot group. Still suspicion was not fixed on Church, even when it was observed in 1775 that he was spending beyond his apparent means and keeping a mistress. When he showed Revere his blood-stained stocking the day after the battle of Lexington, Revere was fully convinced of his loyalty; he didn't stop to think that the Doctor had had twenty-four hours to change to clean stockings. American security had not come of age, and the full extent of Church's treason was not known until General Gage's papers became available in the Clements Library at the University of Michigan in 1930. Much of Colonel Bakeless' account had already been told in Allen French's *General Gage's Informers*.⁶

General Gage had numerous agents working out of Boston, and his intelligence for Lexington and Concord was good. "There is one evil that I dread," wrote General Washington of the British, "and that is, their spies." And again of the British commander in New York: "General Howe has every Species of Intelligence he can wish for . . ." One of Howe's best agents was James Moody, who doubled as a guerrilla raider in New Jersey and published a book about himself afterwards.⁷

Women were not overlooked as agents by either side in the Revolution. One of the most successful was Ann Bates, who worked for the British under peddler cover. (This was also the cover occasionally used by the American spy Enoch Crosby,⁸ the prototype of James Fenimore Cooper's Harvey Birch in *The Spy*). Colonel Bakeless' superlatives for Ann—"the most successful female spy in history"—are attributable to the fact that she remained anonymous until his own researches identified her as "the Woman" in British General Sir Henry Clinton's intelligence files.

⁶ Ann Arbor: University of Michigan Press, 1932.

⁷ *Lieut. James Moody's Narrative of his Exertions and Sufferings in the Cause of Government, Since the Year 1776*. London: 1782.

⁸ Barnum, *The Spy Unmasked; or, Memoirs of Enoch Crosby, alias Harvey Birch*. . . . New York: J. & J. Harper, 1828.

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Much of the intelligence work for General Clinton was directed by Major John André, whose ability in this field seems to have been high until he took to the road himself and was hanged for his pains. Clinton's spies were quite effective, but two of them turned out to be captains in the American Army, working for the British on Washington's orders. Even at this late date they were hard to detect; Colonel Bakeless wrote to a friend who had seen an early draft of his book:

I have had to do a great deal of re-writing since I saw you—part of it because one of Sir Henry Clinton's prize agents turned out to have been working for Washington with the rank of Captain, all the while. If my face is red (and it is!) think of Sir Henry's.

Colonel Bakeless is well qualified in the subject of his book. He had military experience in both World Wars, much of it in intelligence work; he is a good scholar and writer; he spent four years of intensive research on this work, and his examination of primary sources appears to have been fairly exhaustive. It is too bad that he did not have access to the extensive files which the late General William J. Donovan had amassed in the hope of writing on intelligence in the American Revolution.

Yet the most evident weaknesses of *Turncoats, Traitors and Heroes* stem not from scarcity of sources but from the wealth of insufficiently integrated material. "It was . . . a surprise to find," Colonel Bakeless writes in his preface, "how embarrassingly abundant the supposedly lost documents really were . . . it became necessary to reduce the scope of the work five times." The author sensibly eliminated the story of British and American espionage overseas, another volume in itself. (The British intelligence penetration of Benjamin Franklin's mission in Paris was very thorough;⁹ and no one has satisfactorily done the story, for example, of James Aitken—John the Painter—the only American to commit an act of sabotage in Great Britain during the Revolution, who was tried and hanged in 1777 for setting fire to naval stores and

⁹ See Bemis, "British Secret Service and the French-American Alliance," in *The American Historical Review*, Vol. XXIX, No. 3, April 1924, pp. 474-495.

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the Rope House in Portsmouth Navy Yard).¹⁰ He also has limited his coverage of well-known figures like Nathan Hale and of the André-Arnold affair, on which a good book already exists.¹¹

Even so, the book is often choppy and uneven; at times it becomes almost a mere catalog, as the author crams in names and incidents in indigestible profusion. It wavers uncertainly between the chronology of the War and the sequence of action in different espionage operations; perhaps it might have been more easily organized around General Washington's headquarters, as a focal point from which most of the remaining material would drop into place. Nevertheless it is an important book, the first to deal comprehensively with the material now available on its subject; and future treatments of this material should be the better for it.

¹⁰ [AITKEN]. *The Trial (At Large) of James Hill*. . . . London: G. Kearsley and Martha Gurney, [1777].

¹¹ Flexner, *The Traitor and the Spy*. New York: Harcourt, Brace and Company, 1953.

THE SOVIET INTELLIGENCE SERVICES

THE SECRET WORLD. By *Peter Deriabin* and *Frank Gibney*.
(Garden City, N.Y.: Doubleday. 1959. Pp. 334. \$4.50.)

Here is another book about Soviet intelligence, about the men who make it tick, and about those who—for one reason or another—get tired of the ticking and defect to the West. Its world is really not so secret any more, thanks to books like this which publicize its objectives and techniques, reminding any readers who need it that the KGB is still very much with us, whatever we may think of Mr. K's real intentions. Lay readers having no special knowledge of Soviet operations, if they have not been habitual devotees of cloak-and-dagger stories, may derive a good bit of new information from this book. Certainly they will be impressed, even if they realize that no intelligence service falls in the Sunday school category, with the repulsiveness of the Soviet system of *internal* intelligence; and the achievement of this effect was apparently the main aim of the authors.

The book describes Deriabin's early life in the Altai region of southwest Siberia, traces his teen-age career in various Soviet youth organizations, crowned by appointment to a political post with the Army, shows him in action in the Battle of Stalingrad and, after the war, working for State Security in Siberia. In a chapter entitled "The Shape of Terror" there is factual material which the professional reader will recognize as authentic on the internal structure of the KGB and the scope of its activities.

Deriabin's transfer to Moscow occasions some good passages describing life in the Soviet capital from the vantage point of a security officer. A list of numerous security installations in Moscow is also conveniently supplied, and something is told about Soviet interrogation techniques. Soviet foreign intelligence is portrayed as the "cleanest" part of the security organization, being staffed by "some of the most intelligent, technically accomplished and sophisticated members of Soviet society."

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A chapter on the "Hidden War in Germany" tells of the Linse kidnapping and the Otto John case, and one entitled "Cold Storage Agents and Satellites" devotes quite a bit of space to Allen Dulles. Deriabin is said to have noted, in a pamphlet on American intelligence he edited, that "in 1944, Dulles already foresaw the breakdown of the anti-Hitler coalition and . . . began to make plans for intelligence activity against the Soviet State." Another old Soviet pamphlet is said to treat the CIA, the CIC, Naval and Air Force Intelligence, and even the FBI as components of a single organization.

There are a number of chapters on the misdeeds of the Soviet upper crust—"Moscow Executive Suite," "The New Class," "Soviet Immorality," and the struggle of the Stalin succession. Khrushchev is pictured as no great improvement over Stalin, it being suggested that Malenkov might have made a more reliable co-existence partner. A chapter on "Vienna" has much authentic quadripartite flavor, and one entitled "Agents and Escape" tells about Austrian operations involving émigrés and would-be returnees. Deriabin himself escaped in 1954.

The book has four appendices, one illustrating the development of a Soviet surveillance case, one on provocation techniques, one a lengthy and tedious discussion of "some pitfalls of Socialist 'legality,'" and a fourth giving the organizational diagrams of the several elements of the State Security organization.

For the professional reader the shortcomings of *The Secret World* are obvious—the sensationalism of its "terrifying report," its deceptive cloak of authorship, its exaggerations and misstatements of fact. It isn't a book by Deriabin and Gibney or even one by Deriabin "as told to" Gibney. For all Mr. Gibney's protestations to the contrary, it is a book by Frank Gibney *about* Deriabin and several other things, including what Mr. Gibney thinks of the Soviet Union—which evidently isn't much.

Here are some examples of his purposeful extravagances. On Soviet morality:

[On] the high level of the "New Class" Soviet society . . . debauchery is organized and beyond criticism. . . . A clinical study of Soviet social life might easily dwarf *The Lost Weekend* and make the *Kinsey Report* look like a *Parents Magazine* anthology.

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Describing Stalin's exits from the Kremlin:

The only warning . . . would be the amber lights blinking . . . and the sudden screaming cavalcade with Colonel Kirilin of the Guard shrieking obscenities and frequently spitting in the faces of passers-by.

On the right of the Soviet voter to cross out names of candidates he doesn't like:

Compared to the Soviet voter, even a Negro voter in Mississippi could be said to enjoy a thoroughly democratic franchise.

Of the Ukraine:

. . . this huge and sensitive Russian subsidiary.

On housewifely Mrs. K.:

It is doubtful if Mrs. Khrushchev has seen the working end of a kitchen for a good many years.

The author's sense of mission also leads him into oversimplifications and some substantial errors in fact:

At the beginning of the Revolution and for some years thereafter . . . the reins of leadership were held by intellectuals of bourgeois or even noble background, like Lenin and Trotsky.

Trotsky a Russian nobleman!

Admiral Canaris' Abwehr . . . was strongly anti-Hitler until it was absorbed by the Gestapo after Canaris' arrest and execution.

One of [Deriabin's] teachers . . . had managed to keep a large library from the old days. . . . So it was that The Last of the Mohicans, Tom Sawyer, and Huckleberry Finn became a part of one young Russian's education, although he scarcely included them on his Komsomol reading lists.

The exceptional Russian student would be the one *not* acquainted with these books.

The decision to "de-sanctify" Stalin was probably taken late in 1955 by Khrushchev, who was aware of the void left by the great dictator. Just as people in the early Stalin period had grumbled that "things wouldn't be like this if Lenin were alive," a tendency had grown to look wistfully back to the Stalin era whenever the regime showed shortcomings.

A nostalgic concept, the good old days of Stalin.

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Mr. Gibney's views on foreign policy and estimate of the Soviet Union can be illustrated by two final quotations from his work:

[During] the Time of Troubles, from 1953 to 1956 . . . had the USSR been faced with an aggressive American diplomatic policy on the international scene, the Party leaders might have been in real trouble.

American tourists can come back from Moscow with stories of a society straining at its old controls. Cultural exchanges can multiply. The Soviet people can inch a few more steps forward toward a better and freer life. But in the last analysis, all efforts to produce a real thaw in the USSR will fail as long as State Security maintains its position as the ultimate executive arm of the regime.

History will have to tell us whether even Soviet-style intelligence can so decisively govern a nation's course.

THE MIND OF AN ASSASSIN (The Man Who Killed Trotsky).

By *Isaac Don Levine*. (New York: Farrar, Straus and Cudahy. 1959. Pp. 232. \$4.50.)

THE GREAT PRINCE DIED. By *Bernard Wolfe*. (New York: Scribner. 1959. Pp. 398. \$4.50.)

Whether assassination is the same thing as murder depends, as the saying goes, on where you are sitting and what cards you hold. For those who hold Communist Party cards, the assassinations which have been carried out all over the civilized world by the "organs of State Security" have merely executed the sentences of competent judicial organs without benefit of the legal nicety of extradition. But even the Communist who sees them in this light must admit that there have been some spectacular remote-controlled executions in the history of Soviet jurisprudence.

The execution of the death sentence passed by the Soviet organs on Ignace Reiss, the Soviet senior spy in Western Europe who broke in revulsion over the Moscow show trials of the late thirties, brought an exaggerated bit of Chicago to a quiet Swiss country road. Reiss' body was literally cut to pieces by heavy machine-gun fire. The case of General Walter Krivitsky, Soviet espionage boss in Western Europe who fled to safety in the United States after breaking at about the same time as Reiss, is a classic illustration of the homely proverb

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of the State Security *apparatchiks* that anyone can commit a murder, but it takes a real artist to arrange a good suicide. Krivitsky was found dead in a Washington hotel room, a suicide note by his side, shortly after he had told a friend never to believe any evidence of suicide on his part, because he would never kill himself. Lev Davidovich Trotskiy is probably the only man in history to die by ice axe in execution of a death sentence passed by a court.

The tradition of this form of retribution against traitors to the movement is so strong that the widow of Richard Krebs (better known, since the publication of his book *Out of the Night*, as Jan Valtin) told a friend in 1958 that she was not at all certain Krebs had died the natural death officially pronounced by Maryland doctors at New Year's 1951. Clara Krebs was born and raised on the Eastern Shore and never had anything to do with Communism, but almost lost her mind in the year her late husband's friends, including some ex-Communists and some professional anti-Communists, spent looking for clues and speculating about an assassination in his case.

Those who would like to believe that assassinations of this sort belong to the age of Stalinism should note that the denunciation of Stalin crimes (or "errors") has been confined to those committed against good comrades, not against traitors. And they might usefully contemplate the mysterious death of Stefan Bandera, the legendary anti-Soviet Ukrainian partisan leader. Bandera was poisoned in Munich, Germany, in October 1959, in this age of peaceful coexistence.

The murder of Lev Davidovich Trotskiy, popularly known as Leon Trotsky, was not a case of "whodunit," but of "whobeit." The mystery was not who committed the murder, but who the murderer really is. The best published study of the Trotsky assassination has been that by Leandro A. Sanchez Salazar, the Mexican police official who conducted the investigation.¹ Latterly the impending release of the killer, whose twenty-year sentence will have been served on 20 August 1960, is apparently at least partly responsible for the appearance of these recent books by Isaac Don Levine and Bernard Wolfe.

¹ *Murder in Mexico* (London: Secker and Warburg. 1950).

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Don Levine is a vigorous anti-Communist and a man who makes his living by producing and ghosting books that will sell well, not necessarily ones characterized by objective and meticulous scholarship. Richard Krebs, after trying in vain to sell *Out of the Night* to a number of publishers in the United States, finally gave the manuscript and all American rights to Levine for a pittance. Later Krebs complained of a number of inaccuracies and errors in fact which stemmed from Levine, and it was not until shortly before Krebs' death that a personal reconciliation of the two men was effected. On the other hand, Levine has been responsible for the publication of a number of highly interesting memoirs by Communist defectors (among them Walter Krivitsky's *In Stalin's Secret Service*²) and for bringing some of these defectors together for the intellectual and moral stimulation of exchanging ideas. Krebs has spoken with enthusiasm of a fascinating night he spent at Levine's home talking without let-up through the night and into the morning with Walter Krivitsky after Levine had helped them overcome their mutual mistrust.

The Mind of an Assassin does not live up to whatever misgivings one may have about the author. It is a good story, well researched and interestingly told. The factual errors (insistence, for example, that Vittorio Vidali's real name is Carlos Contreras) are neither so frequent nor so glaring as to disturb the knowledgeable reader greatly. Levine makes too much at this late date of the mystery of the killer's identity, which has not really been a mystery for the past five years or so, but he does perform a useful job in pulling together some of the scattered material on the subject which has appeared over the years, and he makes an interesting new contribution in the final chapter, "The Mother Speaks."

This last chapter is a communication which Levine says he received unsolicited from Enrique Castro Delgado after the manuscript for the book had gone to the printer. Castro was a hero of the Spanish Communist movement, lived in Moscow after the Spanish Civil War, broke with Communism in 1944, and after a number of very precarious months managed to escape from the USSR. While in Moscow, Castro heard from

²New York: Harpers. 1939.

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the lips of the assassin's mother, an old-time Spanish Communist and Soviet agent, part of the story of the assassination. He says in his letter to Levine that he had never told it to anyone before.

It is evident from the title of the book that it deals more with the assassin than with Trotsky. Two of the chapters, "Prisoner against Psychologist" and "Portrait of an Assassin," deal with the years-long analysis of the murderer by Mexican doctors and psychologists. Here one is tempted to borrow a pun from a famous music commentator and critic: Levine played Freud, Freud lost. These chapters are boring and appear to a non-professional somewhat far-fetched (*e.g.*, the killer idolized his mother, hated his father, was able to kill Trotsky as a father-symbol). Not so, however, the story of the murderer, the role played by his mother and many others (such as Louis Budenz and Sylvia Ageloff), the State Security masterminding of the execution by Soviet General Leonid Eitingon, and related stories like that of the death of Trotsky's son Leon Sedov in Paris and of the Soviet penetration agents in the Trotsky movement, Jack Soble and Mark Zborovsky.

From former close associates of Trotsky we know that during the whole period of his exile in Turkey, France, Norway, and Mexico the father of the Red Army was a hunted man. After his son died mysteriously in Paris in February 1938, Trotsky seemed to wait more resignedly for his own end. His widow Natalia is quoted by Levine as having written, "Both . . . knew that the verdict of the Moscow court was not platonic and that it would be carried out in one way or another." The way it was carried out is well told in Levine's book, although the titular mind of the assassin has eluded him.

Bernard Wolfe, for reasons best known to himself, has chosen to tell parts of the story of Trotsky's Mexican exile in fictional form. This permits him, it is true, to deviate from the facts when he does not know them (as in places he obviously doesn't) or when the truth is neither stranger than fiction nor as interesting. Because its hero Victor Rostov is a so thinly disguised Trotsky, *The Great Prince Died* is both tantalizing and frustrating for a reader familiar with the story of the Mexican exile.

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Wolfe, who as a young man did spend some time at Trotsky's exile headquarters in Mexico, has developed the hypothesis that Trotsky's later years were plagued by a gnawing sense of guilt regarding his role in suppressing the Kronstadt uprising. Wolfe suggests that Trotsky was struggling with an increasingly strong awareness of his own betrayal of a revolution. It is interesting as a hypothesis, but others who were closer to Trotsky in this period have seen no traces of this struggle of conscience.

If *The Great Prince Died* could be read as straight fiction, it would not be a bad book. The story is well told, the writing tight and professional. There is plenty of suspense to hold the reader's attention. For this reviewer, however, it has not been possible to achieve the necessary detachment from his knowledge of true events to read it as straight fiction, and such a conflict within the reader spoils the whole book. The only part which could be read under these circumstances without any trace of annoyance is the section entitled "Author's Notes," pp. 383-398. This is not enough to compensate for the frustrations of the rest of the work.

ESPIONAGE AND PARAMILITARY TALES

LES DESSOUS DE L'ESPIONNAGE: 1939-1959. By *Robert Boucard*. (Paris: Editions Descamps. 1958. Pp. 249. 750 frs.)

M. Boucard, who has published several books on intelligence subjects and services, dedicates this one to the memory of René Dubois, formerly Attorney General of Switzerland, who took his own life in 1957 after the clandestine contacts of high Swiss officials with an attaché in the French Embassy were publicly exposed. The promise in its title of the inside story of espionage for the past twenty years, however, is poorly to indifferently fulfilled. Although it presents vignettes from many interesting cases, both details and material substantiating its purported revelations are sadly lacking.

In summarizing the story of the famous German agent Cicero, for example, the author says that the Turkish secret service arranged his employment by the British Embassy in Ankara and helped him in his project with the ambassador's secret papers. It would be good to know whether there is some evidence other than presumptive indications in his operations that Cicero worked for the Turkish service. Elsewhere, as when he offers "the truth about the Gleiwitz affair," wherein the Nazis had prisoners in Polish uniforms attack a German transmitting station to give pretext for the invasion of Poland, Boucard's exposés are sometimes quite old hat.

One of the most tantalizing stories in *Les Dessous* is that of a Japanese general, military attaché in Ankara, Sofia, Madrid, and Stockholm, whom Boucard calls Yamato Ominata. The American authorities, it is said, discovered in the Sicherheitsdienst archives a message, No. 392-B-M from Stockholm to Berlin, in which Ominata, under the cryptonym "Eierkopf," proposed to "Senior" (Himmler's *nom de guerre*) the sale of Brazilian, Portuguese, Turkish, Vatican, and Yugoslav codes for 28,000 Swedish crowns or 20,000 U.S. dollars. Boucard says that Ominata was also in contact with Admiral Canaris, the British service, and OSS. These bits of information strongly

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suggest that Yamato Ominata is none other than Major General Makoto Onodera, Japanese military attaché in Stockholm with responsibility for espionage in the Scandinavian countries from February 1941 to the end of the war. A Swedish newspaper article which appeared on 11 January 1953 when Onodera was on a business trip to Sweden mentioned that he had been known to the Germans as "Eierkopf" and had made a large amount of money selling foreign codes to the Germans.

A PERSON FROM ENGLAND (and Other Travellers to Turkestan). By *Fitzroy MacLean*. (New York: Harper. 1959. Pp. 314. \$5.00.)

Bokhara, Samarkand, Khiva and Merv are here brought back in a series of true episodes which make good bed-time reading for romantics, lay historians, and connoisseurs of bold and curious men. A rabbi's son who astounded the Emir of Bokhara by arriving from England to demand single-handed the release of two of his countrymen, a gifted Hungarian linguist disguised as a dervish from Turkey, a New York reporter who caught up with the Russian forces in time to enter Khiva with General Kauffmann, and a British correspondent elected Khan of Merv as human symbol of the British Crown to stay the Russians—these were four who lived to describe their adventures in forbidden territory during the Great Game between England and Russia in Central Asia.

The story of the fifth, a British colonel for whom Bolshevik Tashkent became too dangerous in the fall of 1918, is of particular interest to collectors of intelligence tales. After wearing thin an astonishing variety of disguises he enrolled as an Albanian lepidopterist in the Bolshevik intelligence service and was sent to spy on briefly independent Bokhara, where fifteen previous agents had vanished without a trace. He managed to obtain asylum there until he could escape with other refugees in a hazardous desert trek to the Persian border, where the Bolsheviks claimed to have killed him in a skirmish at the river crossing. He reported to the British command at Meshed in January 1920.

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THEY CAME IN THE NIGHT. By *Brede Klefos*. (Greenlawn, New York: Harian Publications. 1959. Pp. 207. \$3.75.)

This is the personal account of a young Norwegian cadet's contribution to his country's liberation from the Nazis. It includes what he could observe in Norway of the growth of resistance from spontaneous impudences to an organized and security-minded movement, his confession to a naive venture in military espionage in Stockholm, and details on his commando training in Scotland. Intelligence officers may find these items useful; more likely they will want to use them as an excuse to read an honest and unglamorized story of exalted human enterprise in the service of a cause, followed by inevitable disillusionment when the cause is won.

EVASIONS AND ESCAPES

BE NOT FEARFUL. By *John Furman*. (London: Anthony Blond, Ltd. 1959. Pp. 224. 18/—.)

This account of a British army officer's escapes and prolonged evasion in Italy during World War II, in some respects a story much the same as many previously published, is unique in its pertinence to organizational aspects of large-scale evasion activities and for the light it throws on wartime intrigues in and around the Vatican.

Mr. Furman was one of the many Allied prisoners of war who escaped from camps in Italy during the brief period of confusion in 1943 between the Italian surrender and the consolidation of German authority in northern Italy. Aided by sympathetic Italians, thousands of these men remained at large behind German lines, moving southward in the hope of reaching Allied-controlled territory. Opportunities for crossing the front were limited, however, and caution, inertia, and official directives encouraged the escapees to remain where they were until the front overran them: "It will only be a matter of days or at most a few weeks," they said. But as the weeks rolled into months and food became scarce, evaders found it increasingly difficult to keep alive and in hiding.

To meet the exigencies of this situation, a Roman Catholic priest, Mgr. O'Flaherty, organized from the Vatican a supply and billeting service in which the Italian-speaking Furman became a key Rome coordinator. At the peak of its activity this group provided aid to some 3,000 evading ex-POW's within a forty-mile radius of Rome, among other things dispensing subsistence money at a rate that reached some 4,000 *lire* per man per month. The records of the organization remained within the safety of the Vatican along with its director, an arrangement that raised and still raises some thorny questions of law, ethics, and policy. Eventually captured by the Gestapo, Furman escaped from a train conveying him to Germany and made his way back to Rome, where he resumed work for the O'Flaherty organization. He continued with this operation until Allied forces entered the city.

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Successful clandestine activities require luck; and Furman and his cohorts had a full, almost too full, share. Nevertheless, the author's two breaks from POW captivity, both of them conceived, planned, and carried to completion in a matter of hours, are classics of quick thinking and good timing. And it was not a matter of luck that he achieved fluency in Italian in a relatively short time by taking advantage of his residence in Italian households.

Be Not Fearful fills gaps in the open-source history of evasion during World War II. Its not having been published until fifteen or sixteen years after the events it describes is probably due in part to the delicacy of its revelations about the wartime use of the Vatican.

PIMPERNEL IN PRAGUE. By *Donald Campbell-Shaw*. (London: Odhams Press. 1959. Pp. 192. 18/—.)

Leisurely account, generous with relevant and irrelevant detail, of how the author arranged privately for the 1950 escape of his wife's relatives from Czechoslovakia, hoodwinking not only the Communists but also a number of would-be helpers, including officers of the American CIC. Of mild interest in illustrating the border-crossing activity of that time. Some of its solemn dissertations on peripheral matters—the evolution and functions of the several Soviet and U.S. intelligence services, for example—are amusing in their ingenuousness.

MISCELLANY

DIPLOMAT. By *Charles W. Thayer*. (New York: Harper and Brothers. 1959. Pp. 229. \$4.50.)

This casual compendium on the workings of diplomacy includes a quick look at intelligence as certain others see it. Chapters XII, XIV, and XV combine elements of a short history of intelligence—the Black Chamber, OSS, CIA, taken from standard sources—with the anecdotes and comments of a diplomat extraordinary. The author has reservations about intelligence in the hands of socio-anthropologists, with their new scientific methods. He sees the research and analysis experts in their isolated tower in State Department “chiefly engaged in gathering materials for high-level public speeches and re-analyzing foreign newspapers long since scrutinized in foreign capitals by our embassy staffs.” He asks how the new “scientific” expert can “take into consideration and evaluate a subtle smile he never saw or a handshake he never felt.” On the new concept of national estimates he quotes Churchill’s contempt of “collective wisdom” and concludes that “any attempt to synthesize the products of several minds must end by reflecting the product of none.”

But he concedes that specialists in intelligence are useful in support of the Diplomat, the only true intelligence officer. As the general practitioner in intelligence, the Diplomat has a requirement for specialists to bring the mass of information under encyclopaedic control by substituting numbers for mental capacity. Above all, he needs specialists in intelligence to safeguard his communications.

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Articles and book reviews on the following pages are unclassified and may for convenience be detached from the classified body of the *Studies* if their origin therein is protected. The authors of articles are identified in the table of contents preceding page 1.

The editors gratefully acknowledge the assistance of Mr. Walter Pforzheimer, Curator of the CIA Historical Intelligence Collection, in scanning current public literature for intelligence materials, and of the many intelligence officers who prepared book reviews for this issue of the *Studies*. Most noteworthy in this respect are the following:

Military Intelligence in World War II . . . Lyman Kirkpatrick
 In the American Revolution Walter Pforzheimer
 Deriabin's *The Secret World* J. R. Hogham
 Books by Levine and Wolfe on Trotsky Hans Andersen
 Boucard's *Les Dessous de l'Espionnage* Arthur Casberg
 Furman's *Be Not Fearful* Louis Thomas

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