1 Unit 731 and the Japanese Imperial Army's biological warfare program

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The Ishii Network

Unit 731 was the common name of a secret unit of Japan's Manchuria-based Kwantung Army whose official name was the Epidemic Prevention and Water Supply Department. The leader of the unit was Ishii Shiro (1892–1959), who held the rank of lieutenant general at the end of World War II. The unit epitomized the extensive organization for the development of biological weapons within the Imperial Army, which was referred to, beginning in the late 1930s, as the Ishii Network.

The Network itself was based at the Epidemic Prevention Research Laboratory, established in 1932 at the Japanese Army Military Medical School in Tokyo. Unit 731 was the first of several secret, detached units created as extensions of the research lab; the units served as field laboratories and test sites for developing biological weapons, culminating in the experimental use of biological weapons on Chinese cities. The trial use of these weapons on urban populations was a direct violation of the 1925 Geneva Protocol, which outlawed the use of biological and chemical weapons in war. It was also understood by those involved that the use of human subjects in laboratory and test site experiments was inhumane. This was why it was deemed necessary to establish Unit 731 and the other secret units.

Lt. General Ishii Shiro

The Epidemic Prevention Research Laboratory was created under the initiative of Ishii Shiro after he returned from two years of field study of American and European research facilities. It was set up, with the approval of top-level army authorities, as a facility to develop biological weapons. It is said that Ishii first became convinced of the need to develop biological weapons with the signing of the Geneva Protocol in 1925.

The biological weapons Ishii sought to develop had humans as their target, and Unit 731 was established with this goal in mind. In order to produce biological weapons as quickly as possible, Ishii considered it essential to have a human experimentation site at the disposal of his research laboratory. Japan had occupied northeastern China, and in 1932, the puppet state of Manchukuo was established.

Within this "safe zone," Ishii set up what was called the Togo Unit, based in the village of Beiyinhe, about 100 kilometers south of Harbin. Human experimentation began there in the fall of 1933. The Togo Unit was a secret unit under the vice-chief of staff of the Kwantung Army. It was set up to determine whether it was possible to conduct human experiments in northeastern China and, if it was possible, whether the experiments would produce useful results. The launching of this feasibility study reflects the deliberate nature of Ishii as the organizer of the research. All of those involved in this research and development were military doctors, but they all used false names. At this stage, the scale of the project involved about ten doctors, along with a staff of about 100.

The inauguration of Unit 731

Unit 731 was officially established in 1936. Its establishment is reflected in a memo dated April 23, 1936, entitled "Opinion Regarding the Reinforcement of Military Forces in Manchuria," from the chief of staff of the Kwantung Army to the vice-minister of the Ministry of War (contained in the Ministry of War Journal for the army in Manchuria, Rikuman Mitsu-dainikki). Under the heading "Establishment and Expansion of the Kwantung Army Epidemic Prevention Department," the memo states that the department will be "newly established" in 1936, and "one part of the department will be expanded in fiscal 1938." This is the oldest official document concerning Unit 731 that has been found to date.

In addition to inaugurating Unit 731, this memo also laid the foundation for establishing two other units. It called for the establishment of an additional biological weapons development unit, independent of Ishii's unit, which was called the Kwantung Army Military Horse Epidemic Prevention Workshop (later referred to as Manchuria Unit 100), and for preparations to set up a chemical weapons development unit called the Kwantung Army Technical Testing Department (later referred to as Manchuria Unit 516).

Several months later, the memo's recommendations were approved by Emperor Hirohito, the two units were established, and preparations began for creating the Testing Department. The Ministry of War Journal for May 21, 1936, recorded this development under the heading "Imperial Hearing on Military Force Improvement Consequent upon Budget Approval." The journal noted, "Units concerned with epidemic prevention: One unit each is established for epidemic prevention among humans and horses."

Having been officially established, Unit 731 moved its facilities from Beiyinhe to a newly established laboratory at a hospital in Harbin. This laboratory served as a front-line headquarters while the unit's permanent facilities were being built in Pingfan, outside of the city of Harbin. These facilities were completed and capable of conducting research in the fall of 1939, after the hostilities at Nomonhan (on the border between Manchuria and Mongolia) had ended.

With the construction of the Pingfan facilities, the primary research staff changed in composition from the military doctors of the Togo Unit to private-

sector medical researchers affiliated with universities and other institutions. The first group to be posted to the unit was a team of eight assistant professors and instructors from Kyoto Imperial University in the spring of 1938. The group consisted of two bacteriologists, three pathologists, two physiologists, and one researcher specializing in experiments using animals. Within a year, a second group had arrived at the facility, and the research staff had expanded considerably. The prominence of researchers in pathology and physiology in the development of biological weapons reflected the need for specialized judgment in assessing the results of human experimentation.

With the expansion of the war front throughout China after 1937, sister units affiliated with Unit 731 were established in major Chinese cities. These units were also called Epidemic Prevention and Water Supply Departments. Then Unit 1855 was established in Beijing on February 9, 1938; Unit 1644 in Nanjing on April 18, 1939; and Unit 8604 in Guangzhou on April 8, 1939. Later, after Japan occupied Singapore, a similar unit (Unit 9420) was established there on March 26, 1942. These affiliates comprised the scope of the Ishii network through the end of the war. As of the end of 1939 (that is, before the establishment of the Singapore unit), the network had a total staff of 10,045, of which 4,898 were assigned to the core units in Tokyo and Pingfan.

Human experimentation

Human experimentation took place at all the units of the Ishii network, but it was conducted systematically by Unit 731 and Unit 1644. Of these two, there are extant reports from a U.S. Army survey of human experimentation by Unit 731, so the general outline of its program is known.

Table 1.1 was compiled from two sources: a report to U.S. occupation authorities dated December 12, 1947 by Edwin Hill and Joseph Victor, concerning human experimentation by Unit 731 and related facilities; and a list of specimens brought back to Japan by a Unit 731 pathologist in July 1943. Aside from Ishii and another unit leader, Kitano Masaji, the names of individual researchers do not appear; they are identified as military personnel: (M), primarily military doctors, (C), civilian technicians conducting research within the military, and (PT), part-time researchers working outside of the military.

The number of specimens reflects the number of subjects who died as a result of human experimentation as of July 1943. Consequently, the total number of victims of human experimentation at the time of Japan's surrender two years later would be higher than these figures. The figures also do not include victims of germ bomb tests at the Anda field test site or from other experiments.

Technicians who were civilian employees of the army were treated as officers. The status of civilian employees ranged from infantry class to general class, but technicians were treated as lieutenants and above. Ranking below the technicians were operators, clerks, and staff. For the most part, the Ishii Network took on university researchers as technicians. The part-time researchers were part-time employees of the Military Medical School Epidemic Prevention Research

Table 1.1 The number of specimens in human experimentation by July 1943

Subject	*Researcher*	*Total specimens*	*Medically usable specimens*
Anthrax	M	36	31
Botulinus	Ishii	2	0
Brucellosis	Ishii, M, C, M	3	1
CO	poisoning	1	0
Cholera	C, C	135	50
Dysentery	M, M, PT, PT, M	21	12
Glanders	Ishii, C	22	20
Meningitis	Ishii, C	5	1
Mustard gas		16	16
Plague	Ishii, C, M, C	180	42
Plague (from the Shinkyo [Changchun] epidemic)		66	64
Poison		2	0
Salmonella	M, C	14	11
Songo (epidemic hemorrhagic fever) C, Kitano, C		101	52
Smallpox	Ishii, C	4	2
Streptococcus		3	1
Suicide		30	11
Tetanus	Ishii, PT, C	32	14
Tick encephalitis	C, Kitano	2	1
Tsutsugamushi (scrub typhus) C		2	0
Tuberculosis	C, Ishii	82	41
Typhoid	C, C	63	22
Typhus	C, M, C, Kitano, C	26	9
Vaccine		2	2
Total		850	403

Laboratory; they were professors at Tokyo and Kyoto imperial universities who were contracted to perform research in their own laboratories. In short, a large number of civilian researchers were mobilized.

Biological warfare trials

For the most part, the use of the biological weapons developed by the Ishii Network amounted to field trials. The first of these trials took place during the Nomonhan Incident in 1939. In August, toward the end of the hostilities, pathogens that cause gastrointestinal disease were placed in the Holsten River, a tributary of the Halha River that the Soviet Army used as its source of water. It is not clear how many Soviet soldiers suffered from this attack, but it is thought that casualties were not widespread. This was because the typhoid bacillus and the other pathogens that were used lose their infectivity when placed in water. This fact was known to Ishii's group. It is thought that they nonetheless carried out the attack because they wanted to conduct a field test of biological weapons in combat. While there were likely few Soviet casualties, at least one Japanese soldier

became infected when he spilled liquid from a drum filled with contaminated water while dumping it into the river. He died of typhoid fever at an army hospital in Hailar.

During the following year, 1940, larger-scale field trials were conducted in central China, using biological weapons dropped from airplanes. The pathogens were cultivated by Unit 731 and shipped to Unit 1644 in Nanjing, which served as the forward base for the attacks through 1942. During the first two years, these attacks were carried out in cities along the Yangzi River. Of these, the large-scale attack on the city of Ningbo on October 27, 1940 is well documented and has also been thoroughly investigated by the Chinese.

The attack took place at 7 a.m. from heavy bombers flying a low-altitude run at 200 meters. The bombers dropped fleas, grain, and strips of cotton on the streets in the center of the city. The fleas were infected with the plague. They had ingested blood from plague-infected rats and were called "plague fleas." The plague bacteria were not dissipated directly, as it was considered more effective to infect the carrier fleas and release them, in order to target a specific area with a focused attack. It was also expected that the bacteria would live longer in the bodies of the fleas. The fleas were dropped with grain and cotton to ensure that they reached the target area, and it was also thought that the cotton would absorb some of the shock of impact on the ground.

The first death was recorded on the fourth day, October 30, and casualties increased rapidly in the days that followed. By November 2, it was clear that the disease was an epidemic, and the area was sealed off as disease-contaminated. The following day, it was determined that the disease was the plague. By then 37 deaths had been reported. The quarantine imposed on the area slowed down the spread of the epidemic.

The plague epidemic ended on December 2, with the death of the last two victims. Deaths totaled 106 people. These figures were reported in a survey, conducted by two Ningbo researchers and published in March 1994 by Dongnan University Press. This historical account of the epidemic tracked down all of the victims and listed them by name, and it is thus a very valuable document. This attack, killing more than 100 people, was the most lethal in this series of attacks on Chinese cities. However, when one considers that the attack was carried out by heavy bombers on a risky low-altitude run, these results have to be considered a military failure.

There were two primary reasons for this failure. First, the bacteria used was so infectious that it immediately set off alarms among its victims. Second, there were exaggerated expectations of the ability to artificially spark an epidemic. In February 1941, Ishii reported to his superior officer, Lt. Gen. Kajitsuka Ryuji, chief of the medical department of the Kwantung Army, "plague epidemics arose easily under natural conditions, but that it was not easy to induce them artificially. A study of the reasons for this showed . . . that it was not enough to have the pathogenic agents to start an epidemic; it was necessary to have a good knowledge of physiological conditions and the physiological properties of human beings." (The Khabarovsk Trial 1950: 299) It was expected that pathogens dropped in a

densely populated area like Ningbo would quickly spread from person to person, but these expectations were unfulfilled.

Great failures

In November 1940, the month after the attack on Ningbo, the Chinese began to take countermeasures in response to biological warfare attacks on urban populations. On November 28, the central Chinese city of Jinhua was the target of a failed attack. According to a Chinese Ministry of Health document

> At the time that the plague epidemics were continuing in Ningbo and its vicinity, three Japanese airplanes flew over Jinhua and dropped a large number of small granules the size of small shrimp eggs. These strange objects were gathered and examined at a local hospital. . . . They showed the physical characteristics of the bacteria that cause the plague. In any case, the plague did not break out in Jinhua and as far as this town was concerned the Japanese experiment in germ warfare ended in failure.

No effort was made to collect the material dropped from the airplanes on Ningbo, but one month later the objects dropped on Jinhua were gathered and analyzed. There had been rapid progress in securing evidence in response to the attacks. It is also likely that townspeople were warned to stay inside their houses. As a result, the Japanese experiment was deemed a failure.

Biological weapons are not only useful as potent instruments of war. Their use can also be accompanied by an important element of strategic disinformation, if it is claimed that the enemy itself used them, or if it is implied that they were used in retaliation. In this sense, when biological weapons are used, one tactic is to cause confusion as to whether they were used or not, but if the enemy deems the trial use a failure, the tactic itself fails decisively.

Nonetheless, the trial use of biological weapons on central Chinese cities continued in the fall of 1941. One of the targets was the city of Changde, about 1000 kilometers west of Shanghai in the Chinese interior. The Chinese applied the lessons they learned the previous year and were able to keep casualties in the single digits. Thus the results of the trials through the end of 1941 indicated that dropping plague fleas from airplanes as a means of attacking urban areas was some what ineffective.

Beginning in 1942, Japan began dropping pathogens from airplanes into battlefield zones, on a scale that amounted to a combat operation. In April, Japan launched the Zhejiang campaign. During this campaign, Ishii and company carried out massive biological weapons attacks. Cholera bacteria was the main pathogen employed, and the attacks resulted in more than 10,000 casualties. It has also been reported that some victims contracted dysentery and the plague. More than 1700 soldiers died, mostly from cholera. This would have been considered a great success for the Ishii group, save for the fact that all of the victims were Japanese soldiers.

A Japanese medic captured by American forces at the end of 1944 described the casualties among the Japanese Army during his interrogation:

> When Japanese troops overran an area in which a [biological weapons] attack had been made during the Chekiang [Zhejiang] campaign in 1942, casualties upward from 10,000 resulted within a very brief period of time. The Diseases were particularly cholera, but also dysentery and pest [bubonic plague]. Victims were usually rushed to hospitals in rear. . . . Statistics which POW saw at Water Supply and Purification Dept Headquarters at Nanking showed more than 1,700 dead, chiefly from cholera; POW believes that actual deaths were considerably higher, "it being a common practice to pare down unpleasant figures."

A new type of bomb

Following the 1942 failure, the Japanese army general staff lost all confidence in the efficacy of biological weapons. The pressure was on to find a new approach that would ensure the safety of friendly troops and deliver a more reliable, more devastating blow to the enemy.

The new approach developed was to pack the pathogens in bombs or shells, which would be dropped from airplanes or delivered by artillery. This would satisfy both of the requirements to deliver massive carnage while maintaining the safety of the attacking troops. At the same time, the only way to prevent disasters like that of the Zhejiang campaign was to improve communication among the troops.

Two hurdles confronted the effort to load bombs with pathogens. The first was the need to keep the pathogens alive for long periods of time. The second was the need to develop a bomb made of materials that would break apart upon impact using little or no explosives; this would prevent the pathogen from being destroyed by heat. Alternatively, if a bombshell could not be made of fragile material, a pathogen that could withstand the heat of an explosion would have to be selected. When a bomb or a shell lands, people do not immediately gather at the point of impact, so it was necessary to convey the pathogen from that spot to wherever people were located. Again a live host like a plague flea that would physically carry the pathogen and infect people was considered the best solution to this problem.

A bacteria bomb using the plague bacteria was developed to satisfy most of these requirements. The bomb used plague fleas packed in a shell casing of unglazed pottery made from diatomaceous earth (a soft, sedimentary rock containing the shells of microscopic algae). This same material was used in a water filter that Ishii had developed and patented. Since this bomb would break apart using minimal explosive, it was expected that the plague fleas inside would survive the heat and scatter in all directions, to bite people and spread the disease. This bomb, called the Ishii bacterial bomb, was perfected by the end of 1944. At the beginning of 1945, the collection of rats went into high gear, and Unit 731 went to work cultivating fleas to be infected with the plague.

Japan's defeat

The main force of Unit 731 left the unit headquarters by train soon after the Japanese surrender and returned to Japan between the end of August and early September 1945. Some members of the unit and officers of the Kwantung Army were captured by the Soviet military. Twelve of these POWs were tried by the Soviet Union at a war crimes trial in Khabarovsk in December 1949. In addition to members of Unit 731, officers of the Kwantung Army and the Army's chief medical officer were also charged as responsible parties. All of those charged were given prison sentences ranging from two to 25 years, but aside from one man who committed suicide just before returning to Japan, all had been repatriated by 1956. The record of the Khabarovsk trial was published in 1950 as Materials on the Trial of Former Servicemen of the Japanese Army Charged with Manufacturing and Employing Bacteriological Weapons (Foreign Languages Publishing House, Moscow).

On the other hand, not one of the members of Unit 731 who safely returned to Japan immediately after the defeat was tried as a war criminal. Instead, the American military began investigating the Unit in September 1945, and Unit officers were asked to provide information about their wartime research, not as evidence of war crimes, but for the purpose of scientific data gathering. In other words, they were granted immunity from prosecution in exchange for supplying their research data. The American investigation continued through the end of 1947, and resulted in four separate reports. The investigation took place in two phases.

The first phase resulted in the Sanders Report (dated November 1, 1945) and the Thompson Report (dated May 31, 1946). These two reports contained information on the Unit's bacteria bombs, but did not address the subject of human experimentation or the trial use of biological weapons. Kitano Masaji, who was in Shanghai at the time of Japan's surrender, was interrogated in January 1946. However, he was instructed by Lt. Gen. Arisue Seizo, the Japanese chief of intelligence, that he should not talk about "human experimentation and biological weapons trials," Kitano later told the author of this chapter. In other words, until that time, these two subjects had been effectively concealed.

Body disposal at Unit 731

However, at the end of 1946, American authorities received notice from the Soviets that they intended to try cases involving human experimentation and biological warfare. Ishii and others were interrogated again, and they confirmed the general content of the Soviet claims. The American investigation began anew, headed by new investigators. Two additional reports were produced: the Fell Report (dated June 20, 1947) and the Hill and Victor Report (dated December 12, 1947). These documents described the human experiments conducted by Unit 731 and its related units, based primarily on the interrogation of researchers involved in the experiments.

The Hill and Victor Report concludes with the following evaluation:

> Evidence gathered in this investigation has greatly supplemented and amplified previous aspects of this field. It represents data which have been obtained by Japanese scientists at the expenditure of many millions of dollars and years of work. Information had accrued with respect to human susceptibility to those diseases as indicated by specific infectious doses of bacteria. Such information could not be obtained in our own laboratories because of scruples attached to human experimentation.

The above account makes clear the nature of the crimes committed by the Ishii Unit. At the same time, it is necessary to question the responsibility of the American forces who provided immunity from prosecution in exchange for the product of these crimes.

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2 Medicine-related war crimes trials and post-war politics and ethics

The unresolved case of Unit 731, Japan's bio-warfare program

Suzy Wang

Introduction

The International Military Tribunal (IMT) held in Nuremberg, and the International Military Tribunal for the Far East (IMTFE) held in Tokyo, were meant to be, as their titles suggest, *international* in nature, and in both cases they included judges, investigators, and prosecutors from multiple nations (four in the German case and 11 in the Japanese case). Military, civilian, and economic leaders charged primarily with Crimes against Peace, but also including Crimes against Humanity and Conventional War Crimes, made up the list of defendants: 24 in the German case and 25 in the Japanese case.

In addition to these international tribunals, provisions were made with Control Council Law No. 10 which also allowed occupying authorities to prosecute war criminals who committed conventional crimes. The official website for the Museum of Tolerance provides a postwar estimate of 80,000 Germans and tens of thousands of local collaborators convicted for their crimes in Europe during World War II. Between 1945 and 1949, over 500 Nazi criminals were convicted in the American, British, and French zones alone. Similarly, between October 1945 and April 1956, over 2200 trials were held in 49 locations in Asia and the Pacific simultaneously with and subsequently to the IMTFE by various authorities, including those of the U.S., China, Australia, and Britain. According to a 2002 report by the Interagency Working Group of the United States National Archives, of the 5700 war criminals charged,[1] 4300 were convicted, with 984 sentenced to death and 475 sentenced to life imprisonment. Investigations into war crimes were conducted on a wide range of issues over a vast territory occupied by Japanese forces.[2] Politics also dictated which crimes would be tried and by whom. These were known as B and C class trials, as opposed to the IMT and IMTFE trials, and they received far less international attention. A review of these trials permits a better understanding of issues surrounding contemporary trials and controversies taking place in Japan.

International Tribunal for the Far East (Tokyo Tribunal)

By the time the IMTFE (May 3, 1946 to November 12, 1948) was created as the Asian counterpart to the IMT, Cold War tensions had begun and politics played a

much larger role in how the tribunal was run.[3] Although the number of participating nations at the Tokyo Tribunal was 11 compared to the four in the German case, General Douglas MacArthur, the central figure in the U.S. occupation, controlled many decisions pertaining to the legal proceedings, much to the exasperation of investigators from other nations.[4] The goal of the United States to contain communism and quickly rebuild Japan governed many of the decisions made by SCAP even before the tribunal convened in early May 1946.

Various declassified archival materials and testimonies reveal that Japan's BW program, headed by Ishii Shiro, had conducted inhumane experiments – including vivisections, freezing experiments, BW, and chemical warfare (CW) experiments as well as aerial tests and bombing of Chinese, Korean, Manchurian, Mongolian, and Soviet subjects (which were conducted in a controlled environment at Unit 100) from as early as 1932 to the end of the War.[5] While most of the victims were Chinese, some testimonies have also claimed that U.S. prisoners of war were subjects of such human experimentation (The Khabarovsk Trial 1950).

The numerous declassified government documents lay to rest any doubts about the U.S. government's postwar cover-up of Japan's BW program. Not only did the Japanese scientists receive 250,000 yen in payments in exchange for their data, but immunity from prosecution of war crimes was also granted to all those associated with the program.[6] The deal was struck with full knowledge that the data collected were from human subjects, almost all of whom were killed in the experiments. Although internal memos indicate otherwise, the United States government continues to maintain that no U.S. prisoners of war were victims of the experiments conducted under the BW program.[7]

The issue of the Japanese BW program was virtually excluded from the IMTFE with the exception of comments made on record by an American Associate Prosecutor of the International Prosecution Section (IPS) assigned to the China case, David Nelson Sutton. This, together with the Khabarovsk Trial conducted by the Soviet Union, would become the starting point for international research on the issue.

Significance of the IPS documents

While discussing the Nanjing Massacre on August 29, 1946, Sutton shocked the IMTFE court when he mentioned the Tama Detachment of Nanjing (also known under the designation of Unit 1644) and the human medical experiments conducted by their detachment during the Japanese occupation of the city.

> Mr. [David Nelson] Sutton: The enemy's TAMA Detachment carried off their civilian captives to the medical laboratory, where the reactions to poisonous serums were tested. This detachment was one of the most secret organizations. The number of persons slaughtered by this detachment cannot be ascertained. . . .

> The President [Australian Chief Judge William Flood Webb]: Are you going to give us any further evidence of these alleged laboratory tests for reactions to poisonous serums? This is something entirely new, we haven't heard before. Are you going to leave it at that?
>
> Mr. [David Nelson] Sutton: We do not at this time anticipate introducing additional evidence on that subject.[8]
>
> (IMTFE 1946, 4546–4547)

The prosecution case remained firmly on the Nanjing Massacre, and thus the opportunity to include the issue of Japan's BW experiments was lost and never brought up again in the IMTFE proceedings. This exchange between Sutton and Webb is nevertheless significant, as it left a written record of early U.S. awareness of the program.[9]

Sutton's comments during the IMTFE proceedings are all the more surprising since Sutton, on April 25, had recommended to Chief of Counsel Joseph B. Keenan that "no attempt be made to establish the use of bacteria warfare by the Japanese against China" due to lack of evidence.[10]

Interestingly, a month before the group's departure to China in April 1946 for collecting evidence, Colonel Thomas H. Morrow, Sutton's colleague at the IPS, had written a series of reports concerning the BW and chemical warfare (CW) issues for Keenan. His recommendations indicated that the responsibility lies in "the Tokyo Government and not field commanders," thus implying the inclusion of this issue within the scope of war crimes to be raised in the IMTFE. Sutton's interest in collecting evidence of individual atrocity and Morrow's search up the chain of command for culpability led to their different recommendations. In his final report, handed to Keenan on the same day as Sutton's report on BW, Morrow concluded that there is enough evidence to charge Japan with the use of poison gas in China (Williams and Wallace 1989, 173).

The possibility of a Nanjing trial?

The difficulties of collecting evidence in China in the midst of a civil war became evident to the IPS. Sutton's mention of the Tama Detachment alerted researchers to the fact that the IPS may have known more than they were willing (or allowed) to let on. John W. Powell points out that "the Chinese procurator at Nanking [had] sent a report on the TAMA Detachment's activities to the IMTFE, in Tokyo, asking that it be included in the war crimes charges against the Japanese" (1980, 5). Perhaps the new evidence compelled Sutton to mention the use of poison gas by the Japanese.

A search into the materials held in Nanjing does reveal the existence of three indictments against 14 former members of the Tama Detachment dated October 22, 1946.[11] Xie Fusheng of the Nanking Central Hospital charged Nagayama (長山) with using Chinese Nationalist prisoners as subjects for experimentation, injecting them with various germs and drugs. The second

indictment charged Senior Captain Hiromoto (広本) and First Lieutenant Morita[12] (森田) with choosing 100 prisoners of the Laohuqiao Camp in October 1942, to be sent to the Tama Detachment for experimentation, causing the death of all prisoners. The third indictment was based on the testimony of Xie Jinlong, a former laborer recruited from Taiwan, which charged First Lieutenant Morita with ordering Xie in January 1942 to transport over 100 prisoners to the Tama Detachment, where no one survived (Fujii 1997, 432–433). According to Zhang Lianghong, the historian and Director of the Nanjing Massacre Study Center at Nanjing Normal University (email correspondence, February 10, 2007), in addition to Xie's testimony, two others regarding human experiments committed by the Tama Detachment may be found in the Nanjing archives. Among them, the one by Chimba Osamu 榛叶修 (榛葉修) is especially significant, its being a rare testimony provided by a former member of the Tama Detachment who defected to China during the War.

Williams and Wallace (1989), in their archival research, also found the Chimba testimony among the IPS documents,[13] but under a slightly different name: Hataba Osamu (hereafter referred to as Chimba). Taken on April 17, 1946, Chimba describes the 1942 Zhejiang Campaign in which Ishii had solicited the support of the Tama Detachment. After reading reports of the spread of epidemics during 1942 and 1943 in the areas that had been targeted, Ishii was known to have touted the campaign as a major success (Harris 1994, 111). Chimba, however, insisted that the winds had changed course during the summer maneuvers and poisoned soldiers from the Tama Detachment were hospitalized well into September of the following year. Chimba's testimony corroborates previously gathered intelligence reports,[14] and Sutton's claim in court that poison was used by the Tama Detachment may have come from Chimba's statement in the affidavit that Japan's research was not confined to BW but to poisons as well (Williams and Wallace 1989, 176–177).

These materials, collected for the IMTFE or a subsequent trial, provide the first material evidence of the activities of the Tama Detachment as well as partial data indicating the specific number and location of Chinese prisoners taken from one camp to be killed by experimentation. More importantly, the materials serve as an early indication that Japan's BW program extended at least as far south as Nanjing and was not confined to Manchuria (present-day Northeast China).

Beginning in December 1945, military tribunals in postwar China ended in late 1947 due to "heavy court costs," while "mounting Communist rebellion diverted attention" away from the tribunals (Cady 1980, 172). According to John F. Cady, charges were brought against 41,000 Japanese war criminals; however, a Chinese source indicated that only 2435 were tried (of which 110 were executed) (*Zhongguowang* 2005). Currently available materials do not confirm whether those of the Tama Detachment charged with war crimes were ever brought to trial in China. As we will see later, U.S. investigators, hindered in their search for truth by SCAP directives protecting the Japanese scientists, missed opportunities to put the BW researcher under scrutiny. Investigators were stonewalled.

Subsequent U.S. Army and Navy trials – *USA vs. Karl Brandt et al.*

Among the more infamous cases tried in Europe after the end of World War II was that of *United States of America vs. Karl Brandt et al.* Held between October 1946 and November 1947, "the Doctor's Trial," as it was commonly known, was the first of 12 cases to be brought before the Nuremberg Military Tribunal (NMT). The defendants included senior doctors and administrators in the armed forces and SS, charged with conducting a series of medical experiments (see Appendix A) during the course of the War within the context of genocide and the systematic elimination of those deemed "life unworthy" (United States Holocaust Memorial Museum).

PostWar discourse of medical atrocities committed by Imperial Japan often refers to the Doctor's Trial – citing it as an example of justice served in Europe but "denied" in the Asian case. Indeed, no case was filed against Japan comparable to that of *USA vs. Karl Brandt et al.* given the decision to protect the Japanese BW scientists from prosecution in exchange for their data.

Subsequent Japanese trials

Initial regulations governing the scope and procedures of trials to be conducted by the U.S. military commissions in the Asian Theater were set by General Douglas MacArthur on September 24, 1945, with subsequent changes implemented through SCAP. Japanese war criminals (including Koreans and Formosans serving the Japanese military) were tried by the US military commissions in Army and Navy courts.[15] The Army courts were held in China, Japan, and the Philippines and generally followed more relaxed SCAP regulations on evidence. However, according to Glazier (2003), the Navy, while recognizing the relaxed SCAP regulations, adhered to the stricter regulations found in the *Naval Courts and Boards*[16] and brought in Japanese lawyers as part of their defense team (p. 2070). Since this would be the Navy's first experience holding war crime tribunals, great efforts were made to ensure fair trials. The Navy also wanted to distinguish its trials from those of the IMTFE and the Army trials, which were being criticized for displaying "victor's justice."

Imperial Japan was not the only nation to have conducted research on BW. Others include Germany and the United States (For a list of U.S. experiments, see Appendix A). What stands out in the Japanese research, as in the case of Germany, is the extensive use of humans as experimental subjects with death as the prescribed outcome of the experiments. Given the extent of the cover-up by the U.S. government during and after the IMTFE proceedings, it is interesting that trial-related materials reveal at least three cases of human experimentation.

USA vs. Iwanami Hiroshi et al. and *USA vs. Asano Shimpei et al.*

There was much postwar destruction of evidence and elaborate cover-ups designed to hide crimes by the Imperial Japanese Navy stationed at Dublon Island, Truk

Atoll, Caroline Islands. In the following case, it took an undercover operation to eventually reveal what had occurred during the War on this military installation.

The case file records of *United States of America vs. Iwanami, Hiroshi et al.* indicate that the atrocities committed went beyond the starvation and beatings of POWs and locals,[17] and included shocking details of experiments conducted on American airmen. On June 10, 1947, charges were brought against 19 Japanese defendants for murdering eight American POWs. According to William H. Stewart (1986), a Japanese defendant named Nakamura whose job was to take notes during the various experiments provides the fullest account.[18] Nakamura explained that Iwanami Hiroshi, the Commanding Officer of Fourth Naval Hospital on Dublon Island, Truk, requested eight American POWs from the Commanding Officer of the Naval Guard Unit, where the prisoners were kept, for use in experimentation. Details of the experiments were as follows:

> On 30 January 1944, two doctors, now deceased, and Iwanami performed shock experiments on four of the POWs by placing tourniquets on their arms and legs for long periods. The tourniquets were taken off of two POWs at the end of about two hours and off the other two at the end of seven hours, the latter died immediately from shock, the former survived. The four other POWs were injected with streptococcus bacteria to cause septicemia (blood poisoning). These four developed a high fever and soon died.
>
> *(USA vs. Iwanami, Hiroshi et al.)*

The two POWs who had survived the shock experiments were strangled to death the following day. This was after explosions of dynamite intentionally placed in shallow holes in proximity to the bound, naked POWs injured their legs but still left conscious and in pain. These, along with the bodies of the other two POWs, were taken to the hospital and all were dissected. The hearts and organs of the four POWs who were victims of the shock experiments were said to have been removed and placed in specimen bottles. Iwanami's files further indicate that he confessed to cutting off the heads of the shock experiment subjects and boiling them for specimens to be sent to Tokyo (*USA vs. Iwanami, Hiroshi et al.*).

During this trial, testimonies were given by two defendants in another case, *United States of America vs. Asano, Shimpei et al.* Ueno Chisato was the acting head medical officer of the Forty-first Naval Guard Unit and Nakase Shoichi was the acting executive officer of the same unit where Iwanami conducted his experiments. Five months after the experiments were conducted by Iwanami, a separate request for POWs came from Ueno Chisato.

Within the case file, a 1948 review of the trial by John D. Murphy[19] shows that the six Japanese defendants of *United States vs. Asano Shimpei et al.* were variously charged with cutting and wounding, beheading, and stabbing two American POWs. Among them, former Rear Admiral Asano Shimpei was charged with failing to control his subordinates and not protecting prisoners under his jurisdiction, while Ueno was charged with illegally mistreating and torturing one American POW (the other was spared vivisection but was killed as a target for bayonet practices).

The prosecution charged that Ueno had informed a surgeon lieutenant at the Naval Guard Unit that he was going to operate on the prisoners and that the operations would be of educational value for younger surgeons. According to the postwar review by Murphy, "The right toe nail was removed . . . the right thigh was incised and the femoral artery exposed . . . the right testicle was incised . . . and removed . . . an incision was made in the abdomen . . . and an incision was made in the right breast." Ueno, however, objected to the charges and claimed that the operation was to correct a paronychial (nail bed infection) condition and other incisions were made to check for internal bleeding *(USA vs. Asano, Shimpei et al.)*. Although not found in Murphy's review, Stewart, in his 1986 publication, stated that Ueno had killed "one prisoner by chloroforming him and dissecting him alive on the operating table" (p. 104). Iwanami, Asano, and Ueno were all sentenced to death by hanging and their sentences were carried out as part of a series of executions which began in 1949 (Stewart 1986). A point which warrants further scrutiny is the fact that while these individual cases brought to trial under the U.S. military ended up in the death of the perpetrators, the IMTFE failed to bring the Unit 731 scientists to trial – indeed, they received immunity and payments in exchange for their data.

The fact that two different naval doctors could at different times have access to POWs for use in experimentation indicates that these were not isolated acts. While Ueno's surgery may have been an isolated case of a medical surgeon seeing POWs as better utilized in experimental surgeries for "educational purposes," Iwanami's experiments point to a possible connection with the larger network under which Japan's BW program operates. It remains curious that the heads of the POWs were processed as skull specimens to be sent to Tokyo. What the review and memoranda do not indicate is where in Tokyo Iwanami sent the specimens.

Perhaps further investigation into related material would reveal whether the legal team pushed further for information regarding a possible connection between the Navy experiments in the Caroline Islands and Tokyo. So far, all indications are that the investigative style of the Navy investigators was similar to that of Sutton's, with the focus on the specific crimes rather than placing it within the larger context of the networks within the scientific community.

The Army trial: *USA vs. Kajuro, Aihara et al.*

In contrast to the two Navy trials that took place far from Japan, the case of *United States of America vs. Kajuro, Aihara et al.* was part of several that took place in Yokohama on the mainland and collectively referred to as the "Yokohama Trials" or the "B and C War Crimes Trials." The media on this case was short-lived and while there was almost disbelief that human experiments on POWs were conducted on Japanese soil, the headlines quickly moved on to other news. Over the early months of the occupation, SCAP received many anonymous and named tips asking the investigators to look into certain doctors connected to Unit 731 and to include their crimes in the IMTFE.[20] This, combined with the near exposure of Japan's BW program by Sutton during IMTFE proceedings and the continued Russian

insistence on interrogating Ishii, resulted in the transfer of much effort from the prosecution of criminals to cover-up.

On May 5, 1945, on their return flight to Guam, after having completed their mission to attack the Tachiarai Air Base in southwestern Japan, Captain Marvin S. Watkins and the rest of his B-29 bomber crew were attacked and had to abandon their airplane. Watkins, who was sent to Tokyo owing to his rank and possible knowledge of intelligence, was thus spared the same fate as that of his crew members. According to Fukubayashi Toru, a co-founder of the POW Research Network Japan, in May 1945, Army District Headquarters were ordered from Tokyo "to dispose of" the bodies of crew members and interpreted this as execution without trial. In fact,

> in or about June 1945, Japanese Kempeitai commander Lt. Gen. Sanji Okido secretly ordered each Army District Kempeitai commander that they should make contact with the Army District commander and strictly dispose [sic] of all the captured fliers. This order substantially meant to execute the captured fliers secretly without trial.[21]

Between May 17 and June 2, 1945, a series of experiments was conducted on eight American fliers who were held in detention barracks near and under the jurisdiction of the Western Army Headquarters. The first experiments were performed to explore respiratory conditions; the second series of two operations was on the brain and the stomach; the third series of operations was on the liver, artery, stomach, and heart; and the fourth and final series was on the lung and the brain. Aside from one crewman, who was injured in a scuffle with locals when he landed, the other seven "all appeared to be in good health and did not need medical or surgical treatment and the organs removed did not appear diseased" – all were noted to have been able to walk into the autopsy room, believing that they were there to receive medical care (*USA vs. Kajuro, Aihara et al.*).

Kamisaka (1979) and Landas (2004), in their postwar study of the Kyushu Imperial Medical University experiments, both question the use of a less experienced prosecution team for this case. Moreover, in his research of SCAP Legal Section case files, Landas (2004) found Kyushu Imperial Medical University to be one of three main research centers experimenting with artificial blood substitutes. The other two were Nagoya Imperial University and Niigata Medical College. Landas explained that:

> each research facility conducted its own experiments and pursued different types of substitutes. They only needed to report their data and conclusions to the Densenbyo Kenkyusho. In that sense, each university and research laboratory functioned semi autonomously.
>
> (Landas 2004, 146)

If the connection to Ishii's research had been pursued by the prosecutors, the larger network of the medical community, pharmaceutical companies, and the

military government would have been exposed. Ultimately, on March 25, 1950, "the Office of the Judge Advocate General (JAG) ruled that due to severe judicial errors on the part of the presiding commission members, the rulings were deemed questionable" and that "the president-law member 'exhibited a decided lack of judicial temperament and control' " (Landas 2004, 253–54). Finally, a rehearing was ordered but was never carried out due to the changing political environment at the start of the Korean War and the official reduction of most of the sentences in September 1950 by General Douglas MacArthur. None of the 30 defendants in this case were executed for their crimes (Easton 1995), and by 1958, all had been freed following reversion to the Japanese government of responsibility for Japanese war criminals (Landas 2004, 255).

Significance of the trials

In the early 1990s, when atrocities committed by former members of the Imperial Army came to be widely debated, there were those who, in order to separate themselves from negative media attention, proudly emphasized that they had served in the Imperial Navy during the War and not in the Imperial Army. It has long been argued that the Imperial Army and the Imperial Navy largely operated separately and oftentimes disagreed with the military maneuvers of the other – yet again adding to the distancing between the two. Within this context, the Navy trials were significant because, though they were not of the large-scale organized nature of those of Unit 731, they left a record that proved human experimentation was not confined to the Imperial Army and the medical facilities attached to them. Furthermore, both the Army and Navy trials ask us to reconsider what was previously only thought of as a hierarchical relationship between the military and the medical community.

The fact that Iwanami admitted to preparing the skull specimens to be sent to Tokyo provides a likely link between the medical communities in both places. Understood in the context of Landas' (2004) allegations of a relationship between Kyushu Imperial University and Tokyo's Densenbyo Kenkyusho (Center for Infectious Diseases), it is quite probable that Iwanami's experiments were not simply isolated cases conducted in the Caroline Islands.

On July 22, 1989, over 100 human remains (including complete skulls) were found at a construction site in the vicinity of the former Tokyo Imperial Army Medical University and Ishii's wartime research laboratory. Seventeen years later, on June 24, 2006, *Asahi Shimbun* published an article that confirmed the connection between the remains and the Japanese Army Military Medical School ("What is the Problem of Human Remains?" 2003). A former nurse who worked there disclosed that she knew of at least three locations where human remains were buried and, furthermore, that these remains – both Japanese and foreign (including Chinese) – had been dissected, made into specimens, and stored at that location. In one location she had helped to remove specimens from their glass containers and bury them after the War to prevent discovery by the occupying forces.

This dispels any doubts that Japan's BW program was operating solely under the Imperial Army – more specifically, the Kwantung Army located in Manchuria. The larger question that certainly warrants further research should then be which governmental or military organization controlled the medical research networks within the scientific community.

United States vs. Kajuro, Aihara et al. is significant because it provides material evidence that human experimentation was conducted on the Japanese mainland – against the long-held belief that the rush of Japanese doctors to fill jobs in the colonies was because human experimentation was not allowed on the Japanese mainland. Both trials indicate that doctors were able to procure human subjects through the military.

Whether Watkins's postwar effort to locate his missing crew members led to prosecution in the Faculty of Medicine of Kyushu Imperial Medical University case and not in the case of the Tama Detachment experiments is not clear. What *is* clear, however, is that the United States placed national interests over justice.

Frustrated by the stonewalling and non-disclosure of the Americans at every turn when it came to trying members of Japan's BW program at the IMTFE, the Russians decided to hold their own trial in December 1949. Although officially known as the Military Tribunal of the Primorye Military Area, the trial has since commonly been referred to as the "Khabarovsk Trial."

Military tribunal of the Primorye military area, "Khabarovsk Trial"[22]

According to Georgy Permyakov, the tribunal was rushed because Stalin was to re-introduce the death penalty early in 1950 (Working and Chernyakova 2001). Unfortunately, the rushed nature of the tribunal lent itself to the image of a "show trial." Postwar comments made by MacArthur's camp jumped at the opportunity to reinforce that image of Stalin's Russia, dismissing the short five-day trial as "just another show trial" reminiscent of those reported by the media in 1938, and discrediting it as "communist propaganda" (Working and Chernyakova 2001; Powell 1981, 48–49).

Since the 1990s, the works of Sheldon H. Harris (1994) and Jingbao Nie (2004) have given the 1950 Russian publication and the proceedings of the tribunal greater credence. Harris reiterated his belief that "the evidence presented at the trial was reasonably faithful to the facts" seven years after the publication of his book (Working and Chernyakova 2001). Further research by authors such as Kondo Shoji (personal communication, November 17–18, 2006) indicates the existence of interrogation records of at least 100 other members of Japan's BW program within the 18-volume trial record. Thus despite accusations that the trial was merely a "show trial," evidence shows that the Russian prosecutors as well as scientists conducted thorough investigations before the five-day tribunal in December 1949 and indeed, that they had captured many more than the 12 who stood trial.

The Russian charges suggested that Emperor Hirohito as well as other members of the imperial family knew about the BW program and allowed the experiments.

It is the only primary material we have that specifically places the BW program within a larger context, one that includes the scientific community, the military, the government, and the emperor (The Khabarovsk Trial 1950).

Of the approximately 600,000 Japanese captured by the Russians at the end of the War, only a minority were prosecuted, while many more did forced labor at various railroad construction sites, during which 10 percent died and the final prisoners returned to Japan in 1956. About 3000 were deemed to be war criminals, and 2000 of them were indicted in Soviet military court. Some 969 were deemed to have committed crimes in China and were not tried by the Soviets (Zhang et al. 2005, 6).

Despite long being out of print, *Materials on the Trial of Former Servicemen of the Japanese Army Charged with Manufacturing and Employing Bacteriological Weapons*, published in 1950 in Chinese, English, and Japanese, survived the years in various libraries and countries. The Chinese version served later as a reference to the tribunal held in China in 1956.

Superior people's court special military tribunal (Shenyang and Taiyuan trials)

On February 14, 1950 the leaders of the Soviet Union and the People's Republic of China (PRC) signed the Sino–Soviet Treaty of Friendship, Alliance and Mutual Assistance. As a token of goodwill, the Russians transferred to the newly formed Communist government in July of the same year the 969 Japanese war criminals believed to have committed crimes against the Chinese during the War. Camp records (Zhang et al. 2005) and trial records (Wang 1991) indicate that at least nine prisoners admitted to either being part of the Unit 731 network or to having conducted vivisections on patients in hospitals. These prisoners were taken to Fushun Prison in Changchun, the former Japanese stronghold in the Northeast. Together with the 140 Japanese prisoners already held in the Taiyuan Prison in Shanxi,[23] these prisoners were to wait six years before any of them saw prosecution.

There were several reasons for the six-year interval between initial incarceration and the eventual trial of the Special Military Tribunal of the People's Supreme Court. The main reason was obvious. This would be the first major war crimes trial for the newly created Communist government. The sheer responsibility of the new nation to allocate[24] and train people in the legalities pertaining to these cases necessitated the assembly of a new team, which came to be known as the Northeast Working Group on the Processing of Japanese Prisoners (NEWG). The legal significance did not go unnoticed by members of the young regime, and exhaustive preparations were made to ensure that this trial would place China, if not within the international community, then at least within the international legal community. To help achieve this goal, Chinese delegates who had returned from the IMTFE were called to assist in training this team in international law.

Zhou Enlai, then PRC Premier and Foreign Minister, had taken part in the Soviet transfer of the prisoners and had on previous public occasions repeatedly

instructed that they be treated humanely.[25] With those instructions, members of NEWG went about the difficult task of locating witnesses and collecting testimonies. As a result, in 1954, a series of simultaneous archiving of materials throughout the Northeast took place. After three years of substantial progress, the camp administrators were still faced with one of the biggest obstacles – despite repeated interviews, none of the prisoners had admitted to any wartime atrocities. In the beginning and well into the third year, most continued to deny personal responsibility for any crimes (Zhang et al. 2005, 32–37).

In late 1955, as the trials approached, Zhou again publicly stressed the government's policy regarding the Japanese prisoners.

> there will be no death penalty or life sentences given, and those who are sentenced should be few in number. The indictment should clearly state and verify the basic crimes [committed by the defendant] before it can be brought to court. There will be no charges brought against general crimes. This is the decision of the Central [government].[26]
>
> (Zhang et al. 2005, 227, Translated by author)

Zhou's statements were made available to the Japanese prisoners as reassurance from China's Premier. Emotions ran high during the trials (June to July 1956), and much publicity surrounded its proceedings and re-emphasized the humane treatment given to those who remained within the Fushun camp.[27] In a post-trial interview in the *People's Daily*, former IMTFE judge Mei Juao stressed the legality and fairness of the trial, stressing its legitimacy within the realm of international law.[28]

Collaboration between the military, medical universities and the pharmaceutical companies

Like other commanders stationed near the Russian border, Major Kamihara Toshio was given instructions to destroy all evidence of BW at his Unit 162 (an auxiliary of Unit 731) and evacuate before Russian troops entered Manchuria on August 8, 1945 (Zhang et al. 2005, 35). The immediate postwar destruction of evidence was so thorough that it was difficult to gauge the specific kinds of work conducted in any of the Units. The Chinese trial records, however, provide valuable information on the area of research as well as scale of production of the little known Unit 162, also known as the Linkou Unit, and the Chinese experts came to the same conclusion as the Russians – the fact that these BW units calculated the fleas in kilograms and bacteria culture in tons confirms that these materials could not be used for anything other than massive BW use (The Khabarovsk Trial 1950; Wang 1991, 466–85).

Moreover, Chinese trial records substantiate the Russian claim that the *Kempeitai* or military police supplied Japan's BW program with human experimental subjects, a claim documented at the Khabarovsk Trial proceedings. In Chinese custody were three former *Kempeitai* commanders who admitted to

their connection with Unit 731. Major Horiguchi Masao (堀口正雄) admitted in his testimony that during his time in Jinzhou, he sent nine people to Unit 731 (Wang 1991, 179–80), while Lieutenant Colonel Kamitsubo Tetsuichi (上坪鉄一) admitted to sending 22 people to Unit 731 during his time in Siping (Wang 1991, 181–85). Unlike the Khabarovsk Tribunal, we are not given the full picture of Japan's BW program due mainly to the fact that former unit members in custody were very few in number and low in rank. Nevertheless, by sifting through the trial records and contextualizing the relevant testimonies, we are able to better understand the vast networks between the military and medical community under the umbrella of science, of which Japan's BW program was an intricate part. This is an important contribution to the discourse of wartime medical ethics. Not only does it widen the scope to include non-military experiments, it also clarifies the relationships between hospitals, the military, and pharmaceutical companies both in Japan and overseas.

Some of the more disturbing information revealed in the trial records may be found in the testimony of Major Kobayashi Kiichi (小林喜一). Kobayashi had worked at *Kempeitai* headquarters for five years but stated that he could not specify how many people he had sent to Unit 731 and to various hospitals for vivisection. Kobayashi testified that they were simply too many to recall. This testimony not only hints at the sheer volume of human experimentation victims who passed through *Kempeitai* hands, but undercuts any argument that Unit 731 had exclusive rights to request prisoners from the *Kempeitai*. The fact that the *Kempeitai* provided human subjects for various organizations makes clear that use of human experimental subjects within China was far from limited to the BW program. The testimonies of two other prisoners, Tamura Yoshio (田村良雄) and Yuasa Ken (湯浅謙), who continued to speak out against the atrocities following their return to Japan, add credence to this argument. Tamura admitted, in a 1954 testimony, to amputating the legs of a young Chinese patient in the Manchuria Medical University (now the China Medical University located in Shenyang, northeast China) without anesthetics, leading to blood-loss-related death (Eda et al. 1991, 25).

Indeed, the medical community in Manchuria was equally guilty of conducting human experimentation. Yuasa was a medical doctor and Associate Director at the Luan Army Hospital in Shanxi province, China from 1942 until the end of the War. He had studied medicine under Kitano Masaji, who taught at the Manchuria Medical University and for a time headed Unit 731 in Harbin. Although not for use in bacteriological experiments, Yuasa admitted that during the three years and six months he was at the Luan Army Hospital, he "practiced vivisections for the purpose of practicing surgery and other methods seven times on fourteen conscious Chinese victims"' (Kokoro 1994, 44).

Yuasa recalls the time when the five hospitals assembled 40 medics for group training.

> We all had to go to the Epidemic Prevention Center in Taiyuan for lectures. The next day we were brought to the Taiyuan Jail. They took four Chinese

> men out, shot them each twice and told us to dissect them. I didn't want to do it, but the other medics told me, "Every military unit does it, you don't have to make such a big deal out of it."[29]
>
> (Kokoro 1994, 48; translated by author)

This testimony provides a picture of the far-reaching scope of this network within the Japanese scientific community,[30] which included not only units within Japan's BW program and medical universities/hospitals, but pharmaceutical companies as well.

> We received requests from a Japanese pharmaceutical company for brain-cortex tissue. They were making adrenocortical hormones. We cut tissue from the brains and sent it along. We sent one bottle. Then a second request came from the company for ten bottles, which we filled. This was a "private route." Everybody was involved.
>
> (Cook and Cook 1992, 150)

In addition to research on chronic adrenocortical insufficiency (also known as Addison's disease), pharmaceutical companies in Japan were also interested in studying the effects of steroid hormones on asthma and rheumatism (Kokoro 1994, 48). According to Matsumura Takao, a professor emeritus at Keio University, medical universities in China were not the only ones seeking the "private route." Knowing that human experimentation was not allowed in Japan, "many doctors put in requests to Unit 731 so as to obtain accurate results" (Kokoro 1994, 21). To make sense of the seamless collaboration between these industries, one must take into account the hierarchical nature of the Japanese university and medical system, within which fraternity between classmates was especially binding. Ishii astutely involved the medical community within Japan as a source of financial and technical support, buying their allegiance and their silence about the atrocities by concealing their tacit participation in experiments which allowed them to obtain and use materials gathered through inhumane means. Unfortunately for researchers interested in exploring this connection, while numerous captured military documents may now be obtained through archival research, those of the pharmaceutical companies remain locked up in private archives. Even retired pharmaceutical company employees are tight-lipped about their companies and their personal involvement in medical research during the War.

Political significance of the trials

The political significance of the Shenyang and Taiyuan trials was not overlooked by Chinese leaders. When the prisoners were handed over to the Chinese in 1950, both China and the Soviet Union were at war with the Americans in Korea and, while pressure mounted for it to remilitarize, Japanese industry supported the U.S. war, thereby jump-starting its postwar economy. By June 1956, China's leaders

were actively seeking to establish diplomatic relations with Japan. At the Third National People's Congress, Premier Zhou Enlai commented that

> even though both countries are still in a state of war, the Chinese government is taking its own initiative to adhere to the policy of leniency while processing the imprisonment and examination of Japanese war criminals. . . . The Chinese government has continued to make such efforts because of its correct appraisal that the people of both China and Japan not only want peaceful coexistence and friendly relations, but also the normalization of relations between the two countries.[31]
>
> (Zhang et al. 2005, 318; translated by author)

That same month, the Shenyang and Taiyuan trials took place. Of the 1108 prisoners, only 45 were charged in a series of tribunals that lasted two months. In the end, five of the nine who had ties with Unit 731 were sentenced to 12 to 15 years in prison. The other four were returned home on one of three repatriations of the remaining Japanese prisoners that took place in 1956.[32] As China and Japan had no formal relations at the time, the logistics for repatriation were handled by organizations including the Red Cross and the Sino-Japanese Friendship Association.

In 1957, former prisoners of the Fushun camp who had been returned to Japan formed the organization "Chukiren."[33] Members of the group published memoirs and books on wartime atrocities. They also criticized the remilitarization of Japan despite numerous threats to their lives by right-wing organizations. However, most of postwar Japan was eager to leave the War behind, and thus many of these publications as well as other discussions of the War were marginalized by the mainstream public discourse until the 1970s.

Recent trials in Japan

Zhou Enlai's 1956 speech at the National People's Congress foreshadowed the normalization of the Sino–Japanese relationship which was finally achieved in a series of communiqués and treaties in 1972 in the wake of the US-China opening.[34] These treaties would later be used by Japanese courts as proof that China had given up its claims for compensation for wartime atrocities. By 2007, at least 27 cases in Japan (Kang 2007),[35] 15 cases (including appeals) in the U.S., and one each in Korea and China sought compensation for victims for various wartime atrocities including those of forced labor, comfort women, and abandoned chemical weapons, as well as the BW case. The majority of the cases were filed on behalf of Korean and Chinese victims.

While most of the above-mentioned cases were not filed until after the death of Emperor Hirohito in 1989, a 1965 textbook screening lawsuit against the Japanese Ministry of Education brought by Ienaga Saburo, a Japanese historian, would lay the foundation for future World War II-related lawsuits. However, in a 1997 verdict, Ienaga was ordered to delete all descriptions related to Military Unit 731

"on the ground that no reliable academic study, paper or publication was available for reference by then, therefore it was too early to address this issue in a textbook" (Judgments of the Supreme Court 1997).

Ienaga's lawsuit spurred scholarly research into issues concerning Japanese wartime atrocities including the BW program. Ienaga enlisted the help of Japanese scholars to collaborate with Chinese scholars in order to collect victim testimonies and visit local Chinese archives for primary documents. The collaborations resulted in the publication of scholarly works that were later entered into evidence for the case.[36]

The Ienaga case and the 1989 discovery of buried human remains sparked the interest of citizen activist groups, Japanese lawyers, and scholars, who began recording the testimonies of former members of Japan's BW programs. According to Gold (1996), while the national government continued to deny wartime atrocities, some Japanese local governments were more responsive. Between 1994 and 1995, the efforts of various local governments and citizen activists resulted in a 61-location "Unit 731 Exhibition." A subsequent book by Gold contained the testimonies given by former Unit 731 members at the exhibit, many of whom were speaking out for the first time.

Two years after the first lawsuit of Chinese war victims was filed, a group of Japanese lawyers[37] sued the Japanese government on August 11, 1997 on behalf of 180 Chinese plaintiffs – all victims of Japan's bacteriological warfare. *Chinese Sufferers and Bereaved of the Victims by Bacterio-weapons of the 731 Corps of Japan Army v. Japan* or the "Unit 731 Lawsuit" was the first lawsuit specifically targeting Japan's wartime BW program filed in Japan.[38] Due largely to the scope of Japan's BW program and given the lack of Chinese primary materials and testimonies, the lawyers decided to limit their case to certain localities rather than filing a general lawsuit. The decision was made to focus on Changde (Hunan) and Yiwu (Zhejiang), two areas that were described in detail in the IPS documents submitted by Sutton to Keenan as well as submitted to IPS by the Chinese procurator in Nanking in 1946. Those documents as well as local newspaper reports during the 1941 and 1942 attacks corroborated that the two areas would yield the highest possible number of witness testimonies.

The Japanese courts, however, ignoring the evidence of atrocities, have repeatedly invoked the "statute of limitations" or "state immunity" to dismiss the cases. Nevertheless, five years after the Unit 731 trial was filed on June 12, 2001, in a case brought by Liu Lianren, a former Chinese forced laborer, the Tokyo District Court rejected the "statute of limitations" defense (Kang 2007).

In August 2002, the Tokyo District Court recognized for the first time that Japanese Army units had engaged in bacteriological warfare. Moreover, it recognized the responsibility of the State for its actions. However, the court dismissed demands for compensation on the ground that foreign individuals do not have the right to sue for war damages. With courts rejecting former defense arguments, in 2001 the Japanese government began using the argument of "abandonment of the right to claim" as its main defense. This argument maintains that the San Francisco Peace Treaty, the 1952 Sino–Japanese Peace Treaty (or

Treaty of Taipei),[39] and the 1972 Joint Communiqué of the Government of Japan and the Government of the People's Republic of China had already resolved the issues regarding war compensation (Kang 2007). In refutation of the Court's decision, the Chinese plaintiff's legal team cited a March 1995 statement made by China's Vice-premier Jiang Chunyun during the National People's Congress: "What China gave up was not compensation between individuals and nations, but only between nations. The government should not interfere with compensation matters, since each individual has a right to claim it" (Anti-Saikinsen Website 2002).

On July 19, 2005, the final verdict of the High Court was read by presiding Judge Ota Yukio who acknowledged that the Imperial Army had violated the Geneva protocol of 1925, which explicitly prohibits the use in war of asphyxiating, poisonous gases, and of bacteriological methods of warfare. Judge Ota also acknowledged that the use of bacteriological weapons ultimately caused the deaths in the two provinces that the cases covered. However, the judge affirmed the District Court's ruling of August 27, 2002 to dismiss the demand for direct compensation and apology from the Japanese government.

While it may still be too soon to determine the overall implications the trials will have for Japan and its neighbors, lasting legacies have already been made. Because of the trials, first- and second-hand witness testimonies of the remaining few living victims are being recorded in multiple areas in China for use in future court cases. Former Unit 731 members, mostly in their late eighties and nineties, now have a forum to leave behind a record of truth. Finally, the cases prompted the research and production of scholarly work on BW and Unit 731 within China, Japan, and internationally.

Conclusion

These court cases have proven that in the face of Japanese government intransigence, there are lawyers, citizen activists, and former imperial soldiers within Japan who are interested in seeing their government acknowledge its past atrocities and compensate its victims.

China has, on a number of occasions, brought up war issues in the context of criticizing official Yasukuni Shrine visits by successive Japanese Prime Ministers. Moreover, Chinese anger culminated in massive, simultaneous anti-Japanese demonstrations that occurred within various provinces in 2005. The focus of reparation efforts, according to Underwood (2007), may well shift to China. Chinese leaders announced in 2006 that they will not only permit non-profit organizations and the Non-governmental Fund to Support Lawsuits by Victims of the Japanese Army's War of Invasion, but also that they may allow lawsuits of former forced laborers to take place in Chinese courts. The significance of the latter has not gone unnoticed by major Japanese corporations with investments in China.

On January 15, 2007, Japan's Supreme Court decided to hold back on all decisions regarding wartime atrocity lawsuits – including the Unit 731 lawsuit –

and instead scheduled a March 16 debate on the "abandonment of the right to claim" issue. This historical debate is part of the forced laborer lawsuit that resulted in a 2004 victory for the plaintiffs in the Hiroshima High Court and was being appealed by the company sued, namely Nishimatsu Construction Company.

However, celebrating the road to legal justice, and the prospect for a sincere, official apology from the Japanese government to the victims of their wartime atrocities, may still be premature. Touted by the Chinese Embassy as a historic "ice-thawing" visit by Chinese Premier Wen Jiabao (the last visit to Japan by a Chinese premier was in 2000) to promote "political trust and expand reciprocal cooperation and friendly exchanges so as to push forward Sino–Japanese relations to develop in a long-term, healthy and stable way," Wen's public relations campaign followed Japan's Prime Minister Abe Shinzo's denial that there was any evidence that the military coerced women into sexual slavery.

On April 27, less than three weeks after Wen's visit, the Japanese Supreme Court deliberated on two landmark hearings – the Nishimatsu Forced Labor Case[40] and the Comfort Women Case – both of which resulted in defeat for the plaintiffs. The Supreme Court's debate ended with the ruling that the 1972 Joint Communiqué signed by Japan and China had settled all compensation issues, including those of individual claims (Kim 2009).

In a meeting called by lawyers of the plaintiffs of the two cases (and other pending cases) later that same day, citizen activists learned that lawyers of five other pending cases had been notified by telephone that their cases had been dropped by the Supreme Court. There was outrage expressed when no representatives from the Nishimatsu Corporation (or their lawyers) showed up for the verdict, while one of the plaintiffs, blind, hard of hearing, and in his nineties, had traveled all the way from rural China. During the meeting, the irony of the Comfort Women verdict was also emphasized. It was given on the same day as Abe Shinzo's apology to the United States president – not the victims – for his public remarks on the comfort women issue. Abe's goal was to weaken support for House of Representative Resolution H-121 calling on Japan to formally apologize and compensate the women,[41] which passed three months after his trip on July 10, 2007.

To say that we have a full understanding of Imperial Japan's wartime BW program and all its implications may still be premature, and a shift in focus from that of the International Tribunals to local trials may reveal a different perspective on events as well as offer new revelations of postwar politics. Furthermore, rather than understanding the most recent (2007) verdict of dismissal of the Unit 731 trial as just another failed lawsuit, the focus should be the Tokyo Supreme Court's first recognition that Japan's Unit 731 did indeed engage in bacteriological warfare and that the victims' testimonies and legal proofs given by the Japanese lawyers representing the plaintiffs prove that these were victims of Japan's bacteriological warfare program. Given the non-prosecution in the IMTFE, the marginalization of the Khabarovsk Trial by the West, and the relatively understudied other trials, this is no small feat. Most importantly for historians, the records of the testimonies should be collected and kept for future research.

Acknowledgment

Suzy Wang would like to dedicate this chapter to the memory of Attorney Tsuchiya Koken, former President of the Japan Federation of Bar Associations, and Chairperson of the Japan Committee of the International Solidarity Council for Redress of World War II Victims by Japan who passed away on September 25, 2009. Attorney Tsuchiya and his team of lawyers were very generous in supporting interested researchers by providing opportunities as well as primary sources. Despite battling kidney cancer for the last four years of his life, he continued his work in seeking compensation for the victims of Japan's wartime crimes until the end.

Notes

1 Of the defendants, five were sentenced to death by hanging, while 16 were sentenced to life imprisonment and two were given lesser jail terms. Other than those who were hanged and the six who died in prison, all were released by April 1958 (Interagency Working Group 2002).
2 According to Stratford, the British alone conducted investigations and trials in Burma, British North Borneo, the Netherlands East Indies, French Indo-China, Singapore, Hong Kong, Tianjin, Shanghai . . . etc., and by early 1948, 931 Japanese war criminals had already been tried by the British (Stratford 2007).
3 For an excellent article comparing the rules of evidence and procedure applied in the International Military Tribunal and the International Military Tribunal for the Far East, see Wallach 1999.
4 There were similar criticisms made concerning the IMT: critics, including some judges, charged that the trials exemplified victor's justice due to the ex-post facto nature of the trials, and that the U.S. "ran the show." The fact that the legal procedures protected Japan's imperial family from prosecution for war crimes was another issue raised by a number of the judges.
5 According to Guo (Anqing City 2005), Japan's BW program consisted of seven main units and 63 subunits, employing up to 20,000 personnel, and which claimed to have successfully employed BW 36 times.
6 A December 12, 1947 report written by Dr. Edwin V. Hill, Chief of Basic Sciences at Camp Detrick, Maryland, pointed out that 250,000 yen was "a mere pittance by comparison with the actual costs of the data" which the U.S. government was to purchase. These data, according to Hill, "have been obtained by Japanese scientists at the expenditure of many millions of dollars and years of work" (Powell 1981, 47). It has also been established that those involved in the cover-up included top leaders of the United States government and SCAP (Powell 1980, 1981; Harris 1994).
7 In a declassified May 23, 1995 memo titled "DOD Q's &A's Regarding Unit 731," the U.S. Department of Defense stated that "no documentary evidence could be found to support the claims that American POWs were used for Japanese BW experimentation and research." Provided by Wang Ao, President of the Mukden Prisoner of War Remembrance Society (MPOWRS) on August 25, 2009.
8 Copy of the Record of the Proceedings for August 29, 1946 provided by the Hoover Institution on War, Revolution and Peace.
9 The IMTFE was in session for 404 days and its more than 3000 court exhibits and 40,000 pages of the records of trial proceedings cover crimes committed between 1928 and 1945 (Liu 1948, 168). In his article, written before the verdict of the IMTFE was delivered, Liu stressed the importance of the IMTFE materials as offering a complete overview of Japan's history and urged the preservation of these materials. A year later, Delmer A. Brown wrote that within the IPS alone, 2200 of the 4336 exhibits were

submitted by the prosecution, but the numbering system indicated that there were at least 8279 documents within the IPS (Brown 1949, 1013). This material, which was published in the early 1990s (Awaya and Yoshida 1993), revealed further the extent of IPS knowledge of Japan's BW program in China (Williams and Wallace 1989, 176).

10 Sutton's 36-page report to Keenan included expert testimonies by Chinese and foreign observers such as Dr. P.Z. King, Director General of the National Health Administration of China, and Dr. Robert Pollitzer, who has been involved in public health and plague prevention work in China for 25 years. Their testimonies included autopsy reports on plague outbreaks in the cities of Chongqing (Sichuan), Ningbo (Zhejiang), and Changde (Hunan) – cities reportedly bombed with BW in the early 1940s. While reports of the plague outbreaks coincided with sightings of Japanese planes flying at low altitudes dropping globules and other matters, Sutton concluded that no direct correlation could be made without further investigation into the matter (Sutton 1946).

11 Author Fujii Shizue dates the handover of the report to Sutton as October 22, 1946, "to be presented at the IMTFE. But, because the Americans had already decided to cover up the issue, it was not taken up as evidence in the IMTFE" (1997, 43). The discrepancy between the dates may, however, be due to the fact that several of the reports sent to members of the Chinese prosecution team in Tokyo required follow-ups with the addition of new information.

12 First names not available in the document.

13 "Affidavit of Osamu Hataba, on Bacterial Warfare carried on by Ei 1644 Force in China, 1943" cited as IPS Evidentiary Document 1896, Files Unit of IPS Document Division (Williams and Wallace 1998, 176).

14 A December 18, 1944 U.S. Army G-2 intelligence report entitled "Japanese Chemical & Bacteriological Warfare in China," by the Sino-translations and Interrogation Center (SINTIC), noted that a Japanese captive revealed that "a BW attack . . . made during the Chekiang campaign in 1942, [Japanese] casualties upward from 10,000 resulted within a very brief . . . time. Diseases were particularly cholera, but also dysentery and [plague]. Statistics which POW saw at Water Supply and Purification Dept. Hq. at Nanking [TAMA Detachment headquarters] showed more than 1700 dead" (Powell 1980, 6).

15 Most trials were held to try war criminals for atrocities against Americans, but there were also cases where U.S. military tribunals tried war criminals for atrocities against the British or other local natives. There were also regulations for specific areas such as the China Theater which allowed for the "creation of mixed inter-Allied military tribunals" (Bradsher 2007, 186).

16 Timothy Maga's (2001) research showed that Rear Admiral John D. Murphy, the Navy's Director of War Crimes, "sought to protect the Navy's 'good name' against the backdrop of criticisms regarding IMTFE and Army trials, by emphasizing fairness and avoiding what he saw as Army and international tribunal mistakes." The Navy followed standard court martial procedures, allowed for Japanese counsel, and obtained live witnesses and physical evidence whenever possible (Glazier 2003, 2069–2070; Navy Department 1937).

17 According to Stewart (1986), "evidence was collected on war crimes committed against ten Americans, twelve Nauruans, five Australians, one British, one French, one Swiss, four Trukese and thirteen white victims whose nationality could not be established" (p. 103).

18 Nakamura committed suicide after having testified and thus his name was not included among the 19 charged.

19 A retired Rear Admiral of the U.S. Navy and Director of the War Crimes Commission, Pacific Fleet to the Commander in Chief of the Pacific, the United States Pacific Fleet, and the Commander of the Marianas Area.

20 For example, Nishimura Takeshi, in his 1946 letter to SCAP, accused three named veterinary surgeons of being connected with Unit 100 where Nishimura claimed that Allied POWs were dissected (Nishimura 1946). In the same year, Ueki Hiroshi, a former army doctor, also wrote to SCAP and specifically to General MacArthur that

Ishii had established in Harbin a laboratory where Allied POWs were executed through human experimentation (Ueki 1946). The major concern of Washington at the time was whether American POWs were used as human experimentation subjects of Japan's BW program. Despite various indications and charges to the contrary, it was officially concluded that no Americans were experimented on, thus paving the way for a deal. As a response to the postwar pleas by former U.S. POWs of Camp Hoten in Mukden, Manchuria, for medical care for illnesses related to experiments by the Japanese, the U.S. House Committee on Veterans' Affairs, Subcommittee on Compensation, Pension and Insurance held a hearing on September 17, 1986 and continued to officially state that no experiments were conducted on American POWs of Camp Hoten (Yang 2007).

21 Private email correspondence with Sasamoto Taeko, co-founder of the POW Research Network Japan, on August 10, 2007.

22 See Boris Yudin (Chapter 3, this volume) for an in-depth analysis of the Khabarovsk trial and its ethical implications.

23 Many of the prisoners in the Taiyuan Prison were either captured after the 15-year war as holdouts waiting for the remilitarization of Japan or those who had gone underground and mixed with the Nationalist troops during the civil war between the Nationalist (KMT) and Communist (CCP) forces. Because of this, many of them were regarded by the Communist government as having committed "double atrocities."

24 In 1949 a large number of professionals trained in law and government administration fled to Taiwan with Chiang Kai-shek.

25 Because many of the Chinese within NEWG suffered directly at the hands of the Japanese, there was repeated emphasis from government leaders that "though there may be personal hatred, the Party's enterprise may not be violated" and that "individual sentiment cannot replace the Party's policy" ("个人仇恨不能违背党的事业, 个人感情不能代替党的政策," Zhang et al. 2005, 19). Their goal was to make sure that these prisoners would move from their previous ideology of militarism to that of peace.

26 Original quote cited in pp. 432–433 of Liu and Tie (1993).

27 The conditions were designed as a model among Chinese prison camps – the Japanese prisoners were not forced to work and were well fed. They were treated promptly for illness and given expensive medical care to which the locals did not have access. These factors convinced the prisoners that execution may not be the only sentence in their future and that there was hope that they would eventually see their families in Japan. After confessions among the prisoners were completed and before sentencing began in 1956, the prisoners were taken on group trips around the Northeast to interact with their former victims as well as witness Chinese economic progress. Even after the trial, those who were sentenced were allowed visits with family members who had traveled from Japan (Zhang et al. 2005).

28 Judge Mei Juao stated in the article that "not only did we provide witness testimony and documentary evidence, each defendant was given the opportunity to defend themselves. This was completely in line with international regulations and international law. [The trials] were in the spirit of humanity and at the same time fulfilled the requirement of legal justice" (Wang 1991, 756; translated by author).

29 Yuasa recalls his first experience with vivisection:

> I was trembling with fear the first time, but the second time, the third time, I got more daring and I just did as if it were a normal procedure. During that time, I was trained as a soldier. I even remember calling the *Kempeitai* myself once to ask for a victim. I gave the Chinese victim anesthesia, opened him up and showed the younger soldiers, "this is the liver, this is the kidney, and this is the heart."
>
> (Kokoro 1994, 48)

30 Collaboration between pharmaceutical companies and the military is not particular to the Japanese case. Although the circumstances under which American experiments

were conducted differed, ethical questions surround both cases. See Appendix B for a preliminary list of experiments conducted by the U.S. military in conjunction with pharmaceutical companies and state prisons.

31 Original quote found in Central Chinese Archives, File Record 119–1, Record 584.

32 The first repatriation took place on June 21, 1956; the second on July 15, 1956, and the last on August 21, 1956 (Zhang et al. 2005). All Japanese prisoners held in China were repatriated to Japan by 1965.

33 中國歸還者連絡會 (Network of Returnees from China). The group, made up of former prisoners of the Fushun camp, is now officially run by younger support members due to the passing of most of its original members. <http://www.ne.jp/asahi/tyuukiren/web-site/index.htm> (February 15, 2007).

34 The Joint Communiqué of the Government of Japan and the Government of the People's Republic of China signed on September 29, 1972 and the Treaty of Peace and Friendship between Japan and the People's Republic of China signed on August 12, 1978.

35 The Center for Research and Documentation on Japan's War Responsibility numbered the trials taking place in Japan as 61, but that number includes appeals. According to Kang (2007), Chinese war victims have filed lawsuits in Japanese courts not only in Tokyo, but in "Sapporo, Kyoto, Nagano, Fukuoka, Niigata, Gunma, Yamagata, Miyazaki and Kanazawa."

36 For an example, see Matsumura et al. 1997.

37 The number of sponsoring lawyers listed in the most recent court document is 175. Court records, case number 4815 regarding appeals for case numbers 16684 and 27579. Final verdict from the High Court delivered on July 19, 2005.

38 An August 1995 lawsuit filed by a separate group of Japanese lawyers on behalf of the victims of the Nanjing Massacre included eight victims of Unit 731. This lawsuit was dismissed in September 1999 (Center for Research and Documentation on Japan's War Responsibility 2003).

39 Although most of the cases involved plaintiffs from the People's Republic of China and not Taiwan, the Court had on occasion used the Sino–Japanese Peace Treaty or Treaty of Taipei signed in 1952 between Japan and Taiwan as grounds to dismiss claims made by Chinese plaintiffs. Kang (2007) and other lawyers claim that the Japanese courts, by invoking this treaty, violated the 1972 Peace Treaty signed between the People's Republic of China and Japan, which recognizes one China. The actions of the Court, while trying to maintain the attitude of denial of wartime atrocities by the government, have contributed to more tension between the two nations.

40 Two years after the Court ruling, an illegal donations scandal related to bid-rigging involving the former Nishimatsu president Kunisawa Mikio and former Democratic Party leader Ozawa Ichiro led to a change in the company's top management. Along with this change came the voice of social responsibility, and the company's representatives began talks of a settlement for the former Chinese forced laborers (Kim 2009). On October 23 2009, Nishimatsu Construction Company agreed to 250 million yen (2.74 million U.S. dollars) to its Chinese victims as well as issuing an apology and building a memorial for them (Xiong 2009). This news brought about renewed hopes that while legal routes may have been effectively cut off, there may be other routes available to seeking compensation for the victims.

41 The resolution stipulated

> that the Government of Japan should formally acknowledge, apologize, and accept historical responsibility in a clear and unequivocal manner for its Imperial Armed Force's coercion of young women into sexual slavery, known to the world as "comfort women," during its colonial and wartime occupation of Asia and the Pacific Islands from the 1930s through the duration of World War II.
>
> (U.S. House 2007)

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3 Research on humans at the Khabarovsk War Crimes Trial

A historical and ethical examination

Boris G. Yudin

This chapter deals with the trial of Japanese biowarfare scientists which took place in Khabarovsk, in the Russian Far East, on December 25–30, 1949. One of the points of indictment against the 12 Japanese military defendants referred to "criminal experiments on living humans" performed during the Second World War in Manchuria. This was the first time these experiments, which had been carried out with extreme cruelty over a 15-year period, had been investigated by a court. Aspects of the trial, such as its setting, timing, its rapid execution, and the leniency of the sentences handed down by the court, are discussed.

At the end of 1949, on December 25–30, in Khabarovsk, one of the biggest cities in the Soviet Far East, a trial took place of Japanese biowarfare scientists. Up until now the trial has been rather poorly covered in the literature of the Second World War in the East. This is true notably for Russian sources – despite the fact that the trial was organized by the Soviet authorities and was intended to achieve a number of political and ideological goals.

In this chapter, I present data which provide a window on the Russian perspective to the lead-up to the Khabarovsk Trial, the trial itself, and its outcome. The primary focus of inquiry is the medical experiments performed on human subjects by Japanese scientists that were elucidated at the trial. I also discuss the premises and efficacy of the Japanese wartime program of bacteriological warfare. In addition, I pose the question: How was it possible – from the moral point of view – to carry out such experiments?

The road to Khabarovsk

The final months of 1949 were marked by a number of events, played out in the international arena as well as the Pacific region, which were relevant to the Khabarovsk Trial. On August 23, the Soviet Union successfully carried out its first nuclear weapons test. On October 1, the People's Republic of China was created. The flame of the Cold War, which had been set alight with Winston Churchill's speech of March 1946, burned more and more brightly. On December 21, Josef Stalin, the Soviet dictator, marked his seventieth birthday. His jubilee was commemorated far and wide, and some traces of the celebration can even be found in the published materials of the Khabarovsk Trial. Yet, the most influential event

had occurred the previous year. The trial at Khabarovsk was preceded by the International Military Tribunal for the Far East, carried out in Tokyo from May 3, 1946 to November 12, 1948. The Tokyo Tribunal had conducted its affairs in the international arena, with the participation of prosecutors and judges representing 11 powers which had been involved in the war against Japan.

Some signs of the growing conflict between the two superpowers – the U.S.S.R. and the U.S.A. – were revealed at the Tokyo Tribunal. For instance, in his speech at the Khabarovsk Trial, State Counsel for the Prosecution L. Smirnov noted:

> the prosecutor of the Nanking city court presented information to the International Military Tribunal in Tokyo, in which it had been specifically mentioned that Unit "Tama" – one of the most secret divisions of the Japanese Army – had systematically carried out experiments on living humans, inoculating them with poisoned serum.

This information about Japanese atrocities attracted the attention of the International Military Tribunal, which requested that American prosecutors, representing the Kuomintang government of China at the Tokyo trial, submit further evidence on the criminal activities of the "Tama" Unit.

Soon afterward, the Soviet prosecutor at the International Military Tribunal transmitted written testimony by [Major General] Kawashima [Kiyoshi] and [Major] Karasawa [Tomio] regarding the malicious experiments performed on living human subjects to the American Chief Prosecutor, Joseph Keenan.

It seemed, however, that some influential figures were attempting to prevent disclosure of the monstrous crimes committed by Japanese military personnel, and documents describing similar experiments carried out by the "Tama" and Ishii Units were not presented to the Tribunal (The Khabarovsk Trial, 1950: 441–442).

Investigators from a number of countries, including Russia, agree that in the course of the Tokyo Tribunal, the United States, which played a decisive role in the trials, took steps to prevent the airing of war crime charges against those involved in human experimentation. The Japanese historian of science, Tsuneishi Keiichi, notes that the American military began investigating these activities in September 1945. However, this initial investigation was aimed not at amassing evidence for prosecutions but at gathering scientific data acquired in the course of Japanese biological and chemical weapons research. None of the Japanese military personnel who had provided such information were subsequently tried as war criminals. "In other words, they were granted immunity from prosecution in exchange for supplying their research data" (Tsuneishi, 2005).

However, at the end of 1946, the Soviets gave notice of their intention to investigate claims of human experimentation and biological warfare. In response, the Americans began a more comprehensive study of the issues. One result of this new investigation was the Hill and Victor report, dated December 12, 1947. Tsuneishi reproduces the conclusion of the report, where the emphasis fell once more on the scientific value of the Japanese experiments:

> Evidence gathered in this investigation . . . represents data which have been obtained by Japanese scientists at the expenditure of many millions of dollars and years of work. Information had accrued with respect to human susceptibility to those diseases as indicated by specific infectious doses of bacteria. *Such information could not be obtained in our own laboratories because of scruples attached to human experimentation*.
>
> (Hill 1947, emphasis added)

According to G. Permyakov, the chief Russian-Japanese interpreter at the Khabarovsk Trial, the Soviet authorities were disappointed with some aspects of the Tokyo International Tribunal. He recalled that in 1946, the Soviet prosecutor at the Tribunal, S. Golunsky, had proposed the submission of a large number of documents describing the bacteriological crimes of the Kwantung Army in Manchuria. Yet, U.S. prosecutors had opposed adding these materials to the file. Consequently, once the Tokyo Trial ended in November 1948, the Soviet authorities decided to institute further proceedings.

The Soviets were also keen to study the Japanese biowarfare program for their own military purposes. After the war with Japan was over, the Soviets and Americans engaged in sharp competition to obtain Japanese research data. This story, however, is much better known from the U.S. than from the U.S.S.R. side. Up until now, publications on Soviet biological weapon programs have been few. Ken Alibek, one of the leading Soviet specialists in bacteriological weapons (now living in the U.S.), states that evidence supplied by former Japanese prisoners and documents seized by the Soviet Army was sent to Moscow for detailed study. These documents included working drawings of factories for the production of biological weapons; these factories were

> bigger and more advanced than those in our country at that time. In Sverdlovsk [a major industrial center in the Ural mountains, now Ekaterinburg], a new military research complex was built by order of Stalin. In its construction, Soviet engineers and designers were indebted to drawings and knowledge gained from the Japanese.
>
> (Alibek, 2003: 60)

The Russian historian of science Eduard Kolchinsky writes of the reluctance of the Soviet scientists involved in these developments to make public their activities in the field, and notes that their silence cannot be fully explained by the secrecy required by their research activities:

> Like their American colleagues involved in the development of biological weapons . . . Soviet scientists, remembering the fate of Japanese and German experimenters on humans, preferred to keep silent about their contributions to the advancement of the country's defense capability. In this respect they differed sharply from the domestic and Western creators of atomic and hydrogen weapons, missiles etc.
>
> (Kolchinsky, 2007: 397)

During and after the War, the Red Army imprisoned about 600,000 Japanese military personnel. The KGB had the immense task of seeking out those prisoners involved in bacteriological warfare research. Their success was considerable and even some of the gendarmes whose task was to dispatch prisoners for experiments were identified (see Supotnitzky, 2006). Military interpreter Georgy Permyakov recalled:

> In 1946, cipher messages from Moscow were received. We were requested to gather materials on bacteriological warfare. At the same time we were "digging up" Unit 731 and we ascertained that there were three generals in our prisoners-of-war camp who were in charge of these activities [Kajitsuka, Kawashima, and Takahashi]. They began giving evidence, but it did not come all at once.
>
> Altogether we talked with 1000 prisoners. Starting with evidence gleaned from the lower ranks, we proceeded to interrogate the senior ranks. Once this evidence was gathered, we were able to confront these three generals and force them to give further evidence. We went to Harbin and interrogated the Chinese. We gathered a huge amount of data and were proud of this achievement. All this data was prepared for the Tokyo Tribunal – the Eastern "Nuremberg". However, none of it was used.
>
> (Permyakov, 2000)

Then, on October 20, 1949 Permyakov, along with 20 other experienced interpreters, was ordered to a meeting convened by Colonel [first name unknown] Karlin, who had been empowered by the Ministry of the Interior of the U.S.S.R. to bring legal charges against a number of officers of the Japanese Army who had used bacteriological weapons during the war. Permyakov noted that, for reasons of personal safety, the identities of Karlin and himself were kept secret. This explains why Permyakov, unlike other interpreters, was never mentioned by name in the published version of the *Materials*.

The preliminary investigation lasted a little over two months: "The Japanese were initially kept in the Khabarovsk prison . . . High-ranking investigators came from Moscow. . . . The Japanese told everything they knew, without pressure. The interrogations lasted from 9 a.m. till 12 p.m. Investigators, interpreters, prisoners – everybody was worn out" (Permyakov, 2000). As we shall see, the Soviet authorities had important reasons for expediting matters.

Setting the scene for the trial

At the Khabarovsk Trial, 12 Japanese military personnel were accused of the manufacture and use of bacteriological weapons during the Second World War. They were: General Yamada Otozo, former Commander-in-Chief of the Kwantung Army; Lt.-General Kajitsuka Ryuiji, former Chief of Medical Administration of the Kwantung Army; Lt.-General Takahashi Takaatsu, former Chief of the Veterinary Division of the Kwantung Army; Major General Kawashima Kiyoshi,

former Chief of the Department of Bacteriological Production, Unit 731; Major Karasawa Tomio, former Chief of a section in the Department of Bacteriological Production of Unit 731; Lt.-Colonel Nishi Toshihide, former Chief of Branch 673 of Unit 731; Major Onoue Masao, former Chief of Branch 643 of Unit 731; Major General Sato Shunji, former Chief of Medical Services, Canton Branch, 5th Army; Lt. Hirazakura Zensaku, a former researcher in Unit 100; Senior Sergeant Mitomo Kazuo, a former member of Unit 100; Corporal Kikuchi Norimitsu, a former medical orderly in Branch 643 of Unit 731; and Private Kurushima Yuji, a former laboratory orderly in Branch 162 of Unit 731.

The charges against them were based on extenstion to Japan of Article 1 of the Decree of the Presidium of the Supreme Soviet of the U.S.S.R., "On measures of punishment for German Fascist criminals guilty of the murder and torture of Soviet civilians and Red Army prisoners of war; also for spies and traitors to the Fatherland among Soviet citizens and their accomplices" (April 19, 1943). It is important to note the extreme severity of the Decree (see, for instance, Ulitzky, 2000: 29). Article 1 states that sentences handed down under previous instruments (which had included the death penalty) were of insufficient severity for "the most infamous evil deeds." In this context, a special means of capital punishment – hanging, which in some cases was to be carried out publicly – was introduced. The Decree also authorized punishments, such as terms of penal servitude lasting 15 to 20 years. It is interesting to note that despite the fact from 1943 until 1952 no fewer than 40,000 persons, including at least 25,209 foreigners, were sentenced under this Decree (Epiphanov, 2001: 73), the Decree itself was classified. Neither the accused nor their counsel were given the opportunity to become acquainted with it. However, on May 26, 1947, following the end of the war and cases entailed by it, the death penalty was canceled by the Decree of the Presidium of the Supreme Soviet of the U.S.S.R.

The timing of the trial deserves special comment. As we have seen, the Khabarovsk Trial began more than a year after the completion of the Tokyo Trials at the end of 1949. In Permyakov's opinion, it was necessary to end the trial before the New Year:

> Moscow forced the investigators to hurry. It was known in high quarters in the Ministry of the Interior that the death penalty would be restored the following year. That is why the people at the top requested the completion of the Khabarovsk bacteriological trial before the end of 1949 – at that time some awkward talks were planned between Moscow and Tokyo on the fate of Japanese POWs. And it is clear that Japan was especially concerned about [the status of senior] officers from the Kwantung and Korean Armies.
>
> (Permyakov, 2000)

The last evening session of the court, held on December 30, finished late at night when the verdicts were announced. We may conclude that, from the very beginning of the preparations for the trial, it had been predetermined that the defendants would not receive harsh punishments. Indeed, on January 12, 1950, the death

penalty was restored in the Soviet Union. On that day the Decree of the Presidium of the Supreme Soviet of the U.S.S.R., "On use of the death penalty for traitors to the Fatherland, spies, and subversive saboteurs," was issued. In a departure from the Decree of May 26, 1947, this Decree permitted the use of the death penalty for those who committed especially heinous crimes against the State.

In Khabarovsk, the cases were heard by the Military Tribunal of the Primorsky Military District, presided over by Major General of Justice D. Chertkov. The bill of indictment, dated December 16, 1949, was signed by the Military Prosecutor of the Primorsky Military District, Colonel of Justice A. Berezovsky. As mentioned above, L. Smirnov, State Legal Advisor third class, was State Counsel for the Prosecution at the trial. Although each defendant was provided with a Soviet defender, these defenders played secondary, mainly decorative roles – a situation characteristic of the Soviet juridical system in general.

An expert commission on bacteriological and medical issues, headed by Nickolay N. Zhukov-Verezhnikov, also participated in the trial. The commission comprised six members, experts in epidemiology, immunology, microbiology, parasitology, and veterinary science. Nickolay Zhukov-Verezhnikov, a microbiologist and immunologist, had been an Academician of the Academy of Medical Sciences of the U.S.S.R. since 1948 and, at the time of the Khabarovsk Trial, was Vice-President of the Academy. He was researching methods of prophylaxis against plague and cholera, research which was set against a background of controversy and debate. In August 1948, only about a year before the Khabarovsk Trial, a dramatic Session of the All-Union Academy of Agricultural Science, named after Lenin (VASHNIL), had been held. At the Session, genetics was sharply criticized and rejected by Trofim Lysenko and his followers as a "bourgeois pseudo-science." Some rather exotic "scientific" theories were promulgated in the years of Lysenko's domination over Soviet biology. One of them, on the potential transformation of the plague pathogen into pseudo-tuberculosis, was proposed by Zhukov-Verezhnikov, who was an active supporter of Lysenko's theories (see Domaradsky, 1995).

Officially, the trial was carried out "with open doors." The hearings took place in the District House of Officers of the Red Army. According to G. Permyakov, attending the sittings of the court was relatively easy: it was only necessary to buy an entrance ticket. However, the journalist Evg. Sholokh claimed that special permission was necessary to observe the trial – which seems more plausible, given accepted practice at the time. Many who could not obtain tickets gathered near the House of Officers, where the trial took place, to hear radio broadcasts of the proceedings.

The indictments handed down at the Khabarovsk Trial fell into four areas: the organization of dedicated units for the preparation and implementation of bacteriological warfare; the commission of criminal experiments on living human subjects; the use of bacteriological weapons in the war against China; and activities undertaken in preparation for bacteriological warfare against the U.S.S.R. (The Khabarovsk Trial, 1950: 7–27). Only the second of these areas, human experimentation, will be discussed in this chapter. Charges of "personal

participation" in the human experimentation program were brought against four of the defendants (Kawashima, Karasawa, Nishi, and Mitomo). Three others (Yamada, Kajitsuka, and Takahashi) were accused of knowingly permitting the experiments to proceed.

Crime and punishment

Nine of the accused were charged with crimes committed while they were serving with the notorious Unit 731. The Unit was created in 1936 by a secret decree of the Japanese Emperor and organized by Lt.-General Ishii Shiro. For security reasons, its predecessor had been named the "Water Supply and Prophylaxis Board of the Kwantung Army." Unit 731 was located near Pingfan railway station, 20 kilometers from the city of Harbin in northeastern China. According to the bill of indictment, by early 1939 a large-scale military camp with many laboratories and service buildings had been constructed. The staff numbered around 3000 personnel (The Khabarovsk Trial, 1950: 8).

Unit 731 consisted of eight divisions. Human experimentation was carried out within Division 1, the main function of which was the investigation and growing of pathogens for bacteriological warfare. In the course of this research many experiments on animals and humans were carried out. For this purpose – experimentation on human subjects in a "laboratory setting" – a prison compound was constructed inside the camp with the capacity to hold between 300 and 400 people. The object of these experiments was the production of bacteria capable of infecting humans with plague, cholera, gas-gangrene, anthrax, typhoid, paratyphoid, and other diseases.

According to evidence provided by one of the accused, Kawashima Kiyoshi, who headed Division 1 for some time, approximately 3000 people were killed in Unit 731 between 1940 and 1945 through infection with deadly bacteria. Kawashima claimed not to know the number of prisoners killed before 1940 (The Khabarovsk Trial, 1950: 19). For the most part, the experiments were directed toward the development of bacteriological weapons intended to infect humans. However, other experiments were also carried out, including depriving subjects of food and water, inducing frostbite to the hands, and the injection of animal blood into humans. During his preliminary testimony Kawashima stated:

> Constant experiments on living human subjects – Russian and Chinese prisoners – were conducted. They were transported to Unit 731 by Japanese gendarmerie in Manchuria – to test bacteriological warfare samples as well as to investigate ways of treating epidemic diseases in the Unit. Unit 731 had a dedicated prison for these detainees, where "experimental humans" were kept in stringent conditions including isolation; these subjects were habitually known as "logs" [*maruta* in Japanese]. I myself heard such names for test subjects used many times by the commander of Unit 731, General Ishii.
>
> (The Khabarovsk Trial, 1950: 55–56)

When interrogated at the trial, Kawashima once again referred to these subjects as "logs." When asked why Manchuria had been chosen as the site for bacteriological warfare research, he answered that Manchuria was most suitable for experimentation into bacteriological warfare because of the plentiful quantity of "test material" – people who could be used for experiments and were referred to as "logs." Kawashima also explained that these subjects were not held in the Unit's prison under their names, but were listed as numbers (The Khabarovsk Trial, 1950: 259).

In another case, Kawashima was cited as saying that the name "logs" was used "for security reasons" (The Khabarovsk Trial, 1950: 15). We shall return to this point below.

Alongside the experiments conducted in a "laboratory setting," trials were also carried out on testing grounds administered by Unit 731 and under battle conditions. In his testimony, Kawashima stated:

> In June 1941, I . . . took part in the testing of bombs filled with plague fleas at the Unit's testing ground near Anda railway station. In the course of the experiment, bacteriological bombs delivered from the air were tested on 10 to 15 prisoners who were tied to stakes in the ground.
>
> (The Khabarovsk Trial, 1950: 56)

When interrogated at a preliminary hearing, another accused, Nishi Toshihide, stated:

> It was known to me that (planned) experiments involving compulsory infection with deadly bacteria took place on Russian and Chinese subjects (including prisoners of war from the Unit's prison). . . .
>
> These experiments were carried out throughout the year; after the research subjects died, they were burned in a crematorium created for this purpose.
>
> Also, I know that . . . between January and March 1945, experiments exposing Russian and Chinese prisoners to typhus were carried out in the prison. In a separate experiment, five Chinese prisoners were exposed to the plague utilizing infected fleas at a testing ground near Anda in October 1944. In addition, frostbite experiments on human extremities were conducted at Unit 731 in the winter of 1943–44.
>
> Furthermore, in January 1945 ten Chinese prisoners were exposed to gas gangrene with my participation. The goal of this experiment was to ascertain the potential impact of exposure to gas gangrene under conditions of –20 °C frost. Ten Chinese prisoners of war were tied to individual stakes 10 or 20 meters away from a shrapnel bomb contaminated with gas gangrene.
>
> To prevent the immediate deaths of the prisoners their heads and backs were protected with special metal shields and thick quilts, leaving the legs and buttocks exposed. After an electric current was switched on, the bomb was exploded and the area where the prisoners were placed was saturated with shrapnel contaminated by gas gangrene. As a result, all of the test subjects

> were wounded in the legs or buttocks and lived an additional seven days before dying in severe pain.
>
> (The Khabarovsk Trial, 1950: 61–62)

During the hearings of arguments at the trial, State Counsel for the Prosecution L. Smirnov stated:

> It has been proved that, in Unit 731, inhuman experiments on living human subjects were carried out not only for research into bacteriological warfare. There were also other, no less inhuman and painful experiments, which . . . were carried out on a larger scale. These experiments were aimed at determining the limits of a human organism's endurance under specific conditions, and at studying . . . the prevention and treatment of non-infectious diseases. . . .
>
> To carry out such experiments . . . Unit 731 was equipped with a pressure chamber in which the limits of the human organism's endurance of high altitudes were ascertained. . . . People placed in this pressure chamber died a slow death involving unimaginable torment.
>
> (The Khabarovsk Trial, 1950: 431)

The indictment prepared for the trial described the fate of those prisoners who happened to survive an experiment:

> If a prisoner recovered following his or her contamination with lethal bacteria, it did not save them from repeat experiments, which were continued until their death as a result of further contamination. Contaminated persons were treated, and different methods of treatment were subsequently studied. They were normally fed and, *following their full recovery*, they were used for a subsequent experiment, utilizing another kind of bacteria. In any case, no one left this death factory alive.
>
> (The Khabarovsk Trial, 1950: 17, emphasis added)

Three of the 12 Japanese military personnel indicted were accused of conducting human experiments while members of Unit 100, which was located in Mogaton, 10 kilometers south of Changchun city, also in northeastern China. Unit 100 was charged, among other duties, with researching new military uses for bacteria and developing acute poisons for the mass extermination of people. Experiments for these purposes were carried out on both animals and living human subjects.

At the Khabarovsk Trial, defendant Mitomo Kazuo, formerly of Unit 100, testified that experiments on living humans were carried out between August and September 1944. These experiments, using Russian and Chinese prisoners, consisted of giving test subjects imperceptible amounts of soporifics and poisons. There were seven or eight Russian and Chinese test subjects. Among the medications used in these experiments were Korean bindweed, heroin, and castor oil seeds. These poisons were mixed in with their food. Each test subject received

food poisoned in this way five or six times for a period of two weeks. Within the fortnight, all the test subjects became very weak and it was impossible to use them for further experiments. In order to maintain secrecy, they were all killed.

Mitomo was then subject to detailed questioning by the court:

Question: How was [the killing] done?
Answer: By order of researcher Matsui, one Russian test subject was killed by an injection with one tenth of a gram of potassium cyanide.
Question: Who killed him?
Answer: I injected him with potassium cyanide.
Question: What did you do with the corpse of this Russian?
Answer: I dissected the corpse at the Unit's cattle cemetery.
Question: What did you do with the corpse afterwards?
Answer: I buried it.
Question: Where was the grave dug?
Answer: In the cattle cemetery behind the Unit's buildings.
Question: In the same place where cattle carcasses were buried?
Answer: In the same place, but in another burial site (Stir, buzz of indignation in the hall.)
Question: Tell us, how did you accomplish the murder?
Answer: As a result of previous instructions issued by Matsui, the test subjects already had diarrhea. This diarrhea was the basis for the injection of potassium cyanide.
Question: Does that mean you deceived the test subject? After telling him you were giving him an injection for the sake of treatment, in reality you were injecting him with potassium cyanide?
Answer: Correct.

(The Khabarovsk Trial, 1950: 322–323)

During its session of December 28, 1949, the Court put four questions to the Forensic Medical Expert Commission. The Commission concluded:

> all studies [carried out by Units 731, 100, and 1644] were concluded with evaluations of the experimental effectiveness of different kinds of weapons or delivery systems. In these experiments . . . living human subjects were used as "guinea pigs." Bacteriological weapons were regarded as suitable for testing in battlefield conditions . . . if the experiments conducted in the testing grounds led to . . . the forcible contamination and deaths of people. Hence, bombs filled with plague and anthrax bacteria infected many test subjects. The efficacy of bombs filled with plague fleas was studied.
>
> (The Khabarovsk Trial, 1950: 396)

The verdict of the Court was announced on the evening of December 30, 1949. All 12 defendants were found guilty and sentenced to various terms in labor camps. In his closing speech, the State Counsel for the Prosecution requested

sentences of 25 years of imprisonment (the maximum sentence at that time) for Yamada, Kajitsuka, Takahashi, Kawashima, and Sato, with sentences ranging from 15 to 20 years for Karasawa, Nishi, Onoue, Hirazakura, and Mitomo. He demanded up to three years' imprisonment for both Kikuchi and Kurushima. The usual practice of the Soviet justice system at that time was that the Court's verdict just rubber-stamped any recommendations made by the prosecution. In this case, however, there was some divergence from these unspoken practices: Sato (20 years), Onoue (12 years), Hirazakura (10 years) and Kikuchi (two years) were all given lighter sentences than those demanded by the prosecution.

Many observers have sought explanations for the unusual leniency of the Khabarovsk Court decision. It became clear to G. Permyakov that, when the death penalty was reinstated in early 1950, those convicted of bacteriological warfare crimes during the trial would be spared capital punishment, even though it was richly deserved. Permyakov remarked that the temporary exemption provided by the earlier Decree had been necessary to keep them alive (Permyakov, 2000), but why was such lenient treatment felt to be necessary? In 2001, journalists R. Working and N. Chernyakova put forward this explanation: "Clearly, Stalin was afraid that Japan would kill Soviet POWs if the Japanese military physicians were executed" (Working and Chernyakova, 2001). However, there are problems with this theory. During the War with Nazi Germany, Stalin had categorized all POWs (including his own son) as traitors. Soviet POWs liberated by the Red Army were, for the most part, dispatched from German prison camps straight to Soviet labor camps. Thus, it would be difficult to imagine Stalin harboring fears about the fate of Soviet prisoners in Japan. Furthermore, it is hard to imagine that there were any Soviet POWs still detained by Japan by the end of 1949.

More recently, E. Sholokh has offered another reason for the lenient treatment: the reason was the same as for the Americans, who had also managed to capture leaders from the Unit. The light sentences were handed down in exchange for the very useful information disclosed by the Japanese prisoners. "Otherwise," writes Sholokh, "it would be difficult to understand such humaneness shown by the Soviet justice and special services systems" (Sholokh, 2004). This seems the most convincing explanation – the unusually light sentences handed down at Khabarovsk were a form of barter. The Japanese convicts would receive only light punishment in exchange for information about bacteriological weapons – information that could prove invaluable to the Soviet Union's own developing biowarfare program.

Another fate was in store for those mid-level operatives of Unit 731 who were not convicted at the trial. M. Supotnitzky retells the story first told by G. Permyakov. On June 2, 1950, Permyakov received an order to come to Khabarovsk-2 railroad station where he was confronted by a huge number of red carriages. He was told that these carriages held Japanese POWs who had worked at Unit 731 and other sites involved in bacteriological research. The Soviet Union had decided to pass these individuals on to China, and Permyakov was to accompany them as he was fluent in both Japanese and Chinese. It turned out that the Japanese did not know that they were en route to China. In all, there were 1002

people on the train. For 16 years, Permyakov knew nothing of their fate. However, following the shooting incident on Damansky Island (March 1969) which took place in the period of severe tensions between the USSR and China, Permyakov read in the English communist newspaper, the *Morning Star*, that these Japanese prisoners had been placed on probation. With their help, the Chinese had opened their own research center for the development of bacteriological weapons. Since the *Morning Star* was supported with Soviet money, Permyakov concluded that this information had been deliberately fed to the newspaper from the U.S.S.R. (Supotnitzky, 2006: Book 2, 569).

The reliability of data and evidence disclosed at the trial

The Khabarovsk Trial has turned out to be one of the most controversial episodes in the history of the Second World War in the East. Some authors are inclined to dismiss it as nothing more than an example of Soviet propaganda, the kind of rhetoric which was so widespread during the Cold War. Thus, in his review of the first edition of one of the best-known books on Japanese biological warfare, *Factories of Death* by Sheldon Harris, J. Vance reproached the author: "The one weakness in his evidence may be the extensive use of the proceedings of the Russian BW show trial at Khabarovsk in 1949" (Vance, 1995: 452). Later, when the second edition of *Factories of Death* was published, L. Fouraker expressed the same view:

> Harris relies . . . on a translated record of a Soviet trial of accused Japanese war criminals. . . . This suspect source is the basis for a great many of the details of Harris's narrative. . . . Without secondary substantiation, I would tend to put all of the Khabarovsk trial information in the questionable category.
>
> (Fouraker, 2004: 2)

An opposing point of view has gained ground recently, the proponents of which maintain that a great deal of irrefutable data was presented at the trial. According to bioethicist Nie Jing-Bao, "the trial established beyond reasonable doubt the basic facts about Japanese BW war crimes including systematic cruel human experimentation, and its conclusions turned out to be remarkably accurate" (Nie, 2006: 25). This second position seems most plausible, and I want here to propose some secondary substantiation for it, using a rather specific methodology.

Unlike the authors cited here, I can rely on my own personal experience of the Soviet system – for more than 40 years I lived in the Soviet Union and was submerged in a political and social reality which was to a great extent produced by Soviet propaganda. At that time, anything more than bare survival depended on a person's ability to develop and cultivate a peculiar skill, which would allow one to extract grains of more-or-less accurate knowledge from a huge body of deliberately distorted information. Even propaganda needs to be based on some real facts and events, which are then interpreted perversely. Aware that such

manipulation took place on a constant and predictable basis, Soviet citizens needed to develop corresponding "countermeasures" and to employ them systematically. There was a more-or-less limited set of methods and tricks used by the state to manufacture the disinformation it put out. Thus, if one knew, first, that a particular event had taken place (or even could have taken place), second, that the official information about it was inevitably distorted, and third, that some particular tricks from the state's restricted propaganda repertoire had in all likelihood been used, one would have some chance of extracting those few pieces of knowledge that had been distorted in the process. However, a couple of caveats should be mentioned at this point. While Soviet citizens grew very adept at deploying these deciphering skills they were not infallible. In addition, because such skills were based on subjective personal experience, it was difficult to make them reproducible and objective.

The trial took place in the extraordinary frame of reference which was the Soviet system of justice. Although this system included the roles of accused, judge, prosecutor, defender, and so on, their meaning had little in common with legal practices found elsewhere. For instance, as we have seen, the functions of a defender were negligible – it was never expected that a defender would try to convince the Court of a client's innocence. The task of a defender was mainly to seek out mitigating circumstances. At the same time, the actual status of a prosecutor placed him on a higher level than a judge, whose verdict usually faithfully reproduced the prosecutor's indictment. The verdict in the Khabarovsk Trial diverged somewhat from this norm. Bearing in mind that, for the Soviet authorities, the trial's chief importance lay in its political significance, it is at least possible to understand the function of much of the ideological rhetoric that colored the speeches of many its participants. The published materials of the trial, as well as the rather rare first-hand recollections of it, allow us to conclude that the behavior of its participants was to a considerable extent staged – first of all, in the ease with which accused as well as witnesses admitted almost all the charges. Nevertheless, such divergence from the legal standards accepted in Western countries does not necessarily imply falsifications and distortions at the level of fact.

While Nie Jing-Bao draws attention to the "many problems and shortcomings associated with the operation of the Khabarovsk trial itself" (Nie, 2004: 38) and notes such features as the deliberate exclusion of international observers and the use of propaganda, I support his views on the basic validity of the trial. We need to draw a clear distinction between all these details of the legal process on the one hand, and the great quantity of evidence and factual material presented at Khabarovsk on the other.

My personal experience gained over a long period immersed in the Soviet propaganda system convinces me that it would have been impossible to fabricate, without any real grounds, the vast amount of evidence presented at the trial. Soviet history was rich in *causes célèbres* which received a great deal of publicity. It is instructive to compare the Khabarovsk materials with the famous political trials of the 1930s, which were widely reported in Soviet newspapers, when so-called "enemies of the people" were on the docket. The materials produced at these trials

contained many more unfounded invectives and much less factual material than was the case at Khabarovsk. Moreover, many of the alleged crimes of these "enemies of the people" simply defied credibility and common sense.

In fact, I have been able to confirm only one factual error from among the many alleged by those who dismiss the significance of the Khabarovsk Trial – an anecdote that was supposedly "taken from the trial record" concerning "the distribution of bacteria-laden chocolates to Chinese children" (Vance, 1995: 452; the same story is reproduced in Fouraker, 2004: 2). I could find no mention of this story in the Russian version of the "Materials"; it is included, however, in Chapter 1 of the memoirs of Morimura Seiichi, *The Devil's Gluttony* (Morimura, 1983: 6).

Offensive medicine

Having considered some examples of human experimentation presented at the Khabarovsk Trial, we turn now to the rationale behind such practices developed by the medical arm of the Japanese military – pre-eminently by Ishii Shiro, head of Unit 731. The Soviet jurist Mark Raginsky presented a striking piece of evidence at the trial. Describing the activities of the anti-epidemic laboratory in Tokyo, Raginsky produced evidence from "the former worker of the laboratory, a Captain of Medical Services, who spoke at the Khabarovsk Trial under the pseudonym Nakagava Posirii" (Raginsky, 1985: 166). According to Posirii, Ishii Shiro once told the laboratory personnel: "military medicine consists not only of treatment and prevention, but genuine military medicine is designed for offensive warfare" (Raginsky, 1985: 167).

This unorthodox understanding of medicine found its embodiment in a very extensive program of research, which included aggressive experimentation on humans. Yet Japan's efforts to develop effective bacteriological weapons were far from successful.

Russian biologist Mikhail Supotnitzky, the author of a two-volume history of the plague (Supotnitzky, 2006), discusses some of the difficulties in artificially inducing epidemic diseases in human populations. He argues that "the failure of Ishii lay not in the lack of the lethal potential of bacteria and viruses, but in the fact that it is too deeply hidden by nature." He added that the experimenters had chosen unrealistic scenarios for their trials:

> The Japanese succeeded in exploding ceramic bombs at preset altitudes over the geographically flat testing grounds, detonating them on prisoners bound to stakes. These prisoners, in their turn, "waited" until the plagues fleas crawled onto them. However, it would be impossible [to provoke an epidemic] against an actively resisting enemy, especially over large tracts of countryside.
>
> (Supotnitzky, 2006: Vol. 2, 547)

Indeed, according to Supotnitzky, Japanese efforts at inducing epidemics were far from successful:

> Official Chinese sources, which were inclined to exaggeration, noted that in total the Japanese subjected 11 major towns in different districts to bacteriological attacks. . . . In 1952, China estimated that 700 people had been the victims of an artificially induced plague between 1940 and 1944. . . . It turns out that this was a smaller number than those Chinese infected as "logs"! As for the Soviet troops, there were no cases of disease at all, despite the fact that they carried out military operations in natural strongholds of infection and entered cities enveloped in plague. Artificially induced bubonic plague "refused" to create pulmonary complications among the Chinese and did not form self-replicating foci within populations.
>
> (Supotnitzky, 2006: 539)

In a Web article reprinted in the journal *Japan Focus*, Tsuneishi Keiichi reaches similar conclusions on the limited effectiveness of Ishii's program. Describing one of its early stages, the large-scale attack on the city of Ningbo on October 27, 1940, Tsuneishi notes:

> This attack, killing more than one hundred people, was the most lethal in this series of attacks on Chinese cities. However, when one considers that the attack was carried out by heavy bombers on a risky low-altitude run, these results have to be considered a military failure.
>
> There were two primary reasons for this failure. First, the bacteria used was so infectious that it immediately set off alarms among its victims. Second, the effort suffered from exaggerated expectations of the ability to artificially spark an epidemic. . . . It was expected that pathogens dropped in a densely populated area like Ningbo would quickly spread [from] person to person, but these expectations were betrayed.
>
> (Tsuneishi, 2005)

Tsuneishi then gives a similar assessment of some of the subsequent stages of the program:

> In April [1942], Japan launched the Zhejiang campaign. In this campaign, Ishii and company carried out massive biological weapons attacks. Cholera bacteria was the main pathogen employed, and the attacks resulted in more than 10,000 casualties. It has also been reported that some victims contracted dysentery and the plague. More than 1700 soldiers died, mostly from cholera. This would have been considered a great success for the Ishii group, but for the fact that all of the victims were Japanese soldiers.
>
> (Tsuneishi, 2005)

It is worth noting at this point that some commentators have sought to uphold the effectiveness of the Japanese biological warfare tests. According to an estimate included by Sheldon Harris in *Factories of Death*, "By the end of 1942 the casualty count in the open tests surely fell into the six-figure range" (Harris, 2002: 104;

reproduced in Nie, 2004: 36). However, one of the reviewers of *Factories of Death* noted that Harris had borrowed casualty figures from an unreliable source, namely David Bergamini's journalistic and unscholarly book published in 1971 (Fouraker, 2004: 2).

Supotnitzky notes that Ishii regularly exaggerated the significance of his unit's work to the Kwantung Army's command. Indeed, during the Khabarovsk Trial one of the witnesses, Colonel Tamura, former head of the Personnel Department of the Kwantung Army, testified:

> Ishii told me about the effectiveness of bacteria on human test subjects in experiments in laboratory settings as well as in field conditions, and claimed that bacteriological weaponry was the most powerful weapon in the hands of the Kwantung Army. He informed me that Unit 731 was on full alert and if required . . . the Unit would be ready to deluge enemy troops with huge masses of deadly bacteria; and that the Unit could also use the air force to carry out military operations against the enemy's rear and over its cities.
>
> (The Khabarovsk Trial, 1950: 349)

Later, Tamura claimed to have reported on the Unit's preparedness for bacteriological warfare to the Commander-in-Chief of the Kwantung Army, General Yamada.

Supotnitzky's response to these reports is dismissive:

> While Ishii was talking about his 10 old airplanes, the Soviet Army was preparing for war against Japan with 3800 airplanes of the latest design.
>
> Let us now consider whether it really was possible to have harmed Soviet troops using Japanese bacteriological weapons. Let us suppose that a Japanese plane had forced its way through the air defense system and attacked Soviet troop emplacements. Suppose that the air temperature and humidity were at optimal levels for flea activity. Suppose that the fleas were adequately protected and that, when the bombs exploded, they were not blown to pieces. Suppose further that our soldiers failed to notice that these plague-infected fleas were biting them. Even under such optimal conditions, the Japanese military would not achieve the results they anticipated from bacteriological attacks. Even before the war, many Russian and Chinese inhabitants of Harbin were aware of the function of the "hospital" near Pingfan. The General Consulate of the USSR regularly received information about it. In 1945 it was no secret that Japan had carried out bacteriological warfare. . . . Thus, it is not surprising that the Soviet Army was thoroughly prepared for bacteriological attacks in advance. Personnel of the Far Eastern Military District were immunized with highly effective plague vaccine.
>
> (Supotnitzky, 2006: Vol. 2, 549–550)

We may conclude, first, that it was impossible for the Japanese to carry out the development of bacteriological weapons without a sustained increase in the

numbers of human test subjects, and second, that the whole project was doomed to failure.

Maruta technology

We turn now from the discussion of empirical data on the human experimentation conducted by Unit 731 to pose the question: What were the ethical values and moral premises that made it possible to perform *without scruples* these experiments on a mass – or even industrial – scale? The question can be reformulated: What understanding of a human being is held by those who regard it as permissible to subject large numbers of people to torture and atrocities? While a single act of atrocity might be ascribed to chance, we must assume that experimenters working on such a large scale had developed rationalizations that allowed them to approve this kind of research. Regrettably, this case is far from unique: human history abounds in examples of mass brutality. Yet it allows us to clarify some aspects of the technology of these practices as they were realized in the field of biomedical research.

First of all, the perpetrators need to find a way of drawing a distinction between "us" and "them." "Us" includes those who performed the experiments as well as those perceived by the experimenters to be in the same category. "They" belong to another category and may be treated as to some extent "non-humans." At the moral level, such a premise provides the pretext for setting aside or weakening the efficacy of the golden rule.

The most common ground for such a distinction is race and/or ethnicity. Indeed, in our case this ground was used. In his book *War Without Mercy*, John W. Dower describes the Japanese theory of a racial hierarchy prevalent at the time of the war. According to the theory, there were three levels of beings in Asia: "First the master race, which was Japan, second was the kindred races such as China and Korea, and third was the guest races that were made up of the island people like the Samoans. All the non-Japanese races were seen as lower life forms and should be subservient to Japan" (Dower, 1986: 8). Such a worldview meant that it was possible to sacrifice people who were members of "inferior" ethnic groups.

As we have seen, the question of race played an essential role in the choice of test subjects. There is no mention in the trial materials of any use of Japanese subjects; most of the experiments carried out by Unit 731 were performed on Chinese, members of one of the "kindred races." Thus the race criterion was not the only one used for categorizing people into "us" and "them." Another ground used by the Japanese military was the choice of test subjects from their national enemies, whether actual or potential. The so-called "laws of wartime" were very often interpreted as an excuse for atrocities of various kinds, including the Unit's hideous experiments. An additional justification was developed by Ishii in his view of military medicine as intended not only for the treatment and prevention of disease in humans, but for offensive attacks on them.

There was nothing unusual in the use of such criteria to distinguish between "us" and "them" (which included categories such as prisoners and criminals) in

the context of the Japanese biowarfare program. What is unique and deserves to be seen as an important innovation in the field of socio-psychological "technology" is the development of a new category – the use of the Japanese term *maruta* (wooden log) to designate a test subject.

As we have seen, Kawashima testified that the designation "logs" was used "for security reasons." It seems, however, that security or secrecy was far from being the only reason. In his book, Morimura recalled that a former officer from Unit 731 once told him:

> We did not regard "logs" as people – they were even lower than cattle. There was not one scientist or researcher who had even a minimal regard . . . for these "logs." Everybody in the Unit – military personnel as well as civilians – . . . regarded the destruction of these "logs" as something absolutely natural.
>
> (Morimura, 1983: 13)

In this way, the emphasis was placed on the "non-human" nature of the test subjects – they were perceived as nothing more than inanimate material to be tested. Certainly, we can interpret such a categorization in terms of the psychological protection of the researchers and personnel in the Unit. Akiyama, who was a soldier in Unit 731, recalled that it took him some time and a great deal of emotional turmoil before he could become indifferent to the sufferings of those whom he became accustomed to treating as "logs" (Akiyama, 1958: 67). Along with its psycho-emotional significance this "*maruta* technology" had a social meaning. It would be difficult for an individual to treat a human being as a log in only a single instance. However, if the individual (and those around him) were constantly forced to accept such identification, he (and those around him) could be persuaded that there is no real difference between the test subjects and logs.

As is known, in Unit 731 the Japanese resorted to such practice as using numbers – instead of names – for prisoners/research participants. We can designate such practice as *depersonalization*, in which a human being ceased to be perceived as an individual. *Maruta* technology goes further: in this case we can speak even about *dehumanization*, through which prisoners in some essential sense ceased to be perceived as human beings at all. This terminological innovation is a striking example of social construction; with this invention new entities, new objects came into existence. While those designated by the term did share some properties intrinsic to humans, they were not perceived as human in the true sense; rather they were seen as *not-quite-human*. To be sure, the use of a specific word to designate people belonging to some category of "them" is quite common. We may recall, for example, the use of the word "vermin" by Nazis to characterize Jews. What makes this case unique is that the term *maruta* was applied exclusively in the context of biomedical research and its participants.

Morimura provides some insight into this process of dehumanization: "Before they were sent to the Unit by the gendarmerie, despite the cruel interrogations they endured, they were still human beings with tongues who were forced to speak. But

once these people were . . . sent to the Unit, they became nothing more than raw material for research – 'logs' " (Morimura, 1983: 5). Among documents presented at the Khabarovsk Trial were excerpts from a set of guidelines on the interrogation of prisoners of war which describe the use of very severe methods of torture to extract accurate information (The Khabarovsk Trial, 1950: 231–233). Nevertheless, in such cases it was still necessary for the interrogators to perceive the prisoner, despite the fact that he was an enemy, as a person, a human being possessing knowledge, able to understand questions and give answers, and so on.

These specifically human traits were redundant when people were turned into logs as test subjects. It no longer mattered whether they were Japan's enemies or not. From that point on, the main – if not the only – quality which really mattered was the health of these subjects. As has been shown, the Unit's personnel went to considerable efforts to provide those who survived the experiments with the best available treatment and food so as to restore their health in order to prepare them for further trials. This gave rise to a paradoxical situation: actions which in normal, everyday life would be interpreted as expressions of genuine humanity – providing those in need with medical care and food – turned out to be their opposite: the commission of atrocities and preparation for further cruel experimentation. As Morimura wrote: "Healthy 'logs' were required for . . . research. Health became the only quality demanded of these test subjects. Any features more properly defined as human were simply not recognized" (Morimura, 1983: 6). Health and nutrition are among the most basic human needs; yet we can be certain that, if they had been properly informed and asked, the test subjects would not have given their consent to this treatment with its prospects of still further suffering. Thus, the "treatment" offered constituted an additional layer of inhumanity – the satisfaction of basic human needs in order to turn human beings into "logs" once again.

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Part II

Guilt and responsibility

Individuals and nations

4 Data generated in Japan's biowarfare experiments on human victims in China, 1932–1945, and the ethics of using them

Till Bärnighausen

Introduction

In 1932, the Imperial Japanese Military leadership decided to set up an offensive biological warfare (BW) program (cf. Leitenberg 2003; Tsuneishi 1986; chapters 1–3, this volume). Under the leadership of General Dr. Ishii Shiro,[1] Japan's Kwantung Army built research centers to develop biological weapons in several Chinese cities, including Beiyinhe, Harbin (Unit 731), Nanjing (Unit 1644), Beijing (Unit 1855), Mengjiatun (Unit 100), and Guangzhou (Unit 8604). In these centers, Japanese military scientists isolated viruses and bacteria that were thought to have potential as biological weapons, studied the natural course of the diseases caused by these pathogens, and attempted to increase pathogen lethality. They further tried to develop vaccines to protect against infection with the pathogens and investigated methods to produce the viruses and bacteria in large quantities and to disseminate them through weapon systems. In many of these experiments, the Japanese scientists used prisoners of war and other prisoners as experimental subjects. In order to conduct such human experiments, the research centers – in particular Unit 731 in Harbin – had the functional capabilities of both concentration camps and research laboratories. The victims of the human experiments were routinely killed, autopsied, and incinerated in the crematories of the Japanese BW units. Estimates of the number of victims killed by the units range from 3000 to tens of thousands (see Bärnighausen 2002; Han and Xin 1991; Harris 1994).

The history of the BW units of the Japanese Army has been chronicled elsewhere (Bärnighausen 2002; Han and Xin 1991; Williams and Wallace 1989). Here, I will describe and discuss the human experiments of the Japanese military scientists. The discussion of the relevance and scientific rigor of the experiments and the existence of ethical research alternatives is not intended to relativize that bestiality, but to inform the debate over whether or not the data obtained in the experiments may ever be used for purposes other than historical documentation and ethical condemnation. The technical characteristics of the Japanese experiments will be used to discuss three ethical stances toward the use of unethically obtained data: the "position of strict non-use" (unethically obtained data should never be used under any circumstances), the "position of conditional use" (unethically obtained data may be used in exceptional circumstances), and the

"position of unrestricted use" (unethically obtained data may always be used independent of the circumstances of its collection). This chapter draws on and expands previous work by the author (Bärnighausen 2002, 2005, 2007).

Different types of sources give accounts of the human experiments of the Japanese BW units (Bärnighausen 2002). A large number of documents written by American Intelligence officers between 1945 and 1947 provide detailed and scientifically exact descriptions of the human experiments (see, for instance, Bacteriological Warfare Experiments by Japanese 1947; Hill and Victor 1947; Thompson 1946). These descriptions were based on interviews with the Japanese scientists who conducted the experiments (see Bärnighausen 2002 for a detailed description of other publicly available sources on the experiments). The American intelligence documents based on interviews with Japanese military scientists provide the most comprehensive overview of the experiments conducted by the Japanese BW units. Since the interviews were conducted to further the BW knowledge of the American military, they contain detailed descriptions of the questions pursued in the experiments, the methods employed, and the results including data on the numbers of human subjects abused in the experiments, dosages of the infectious agents, the modes of infection, symptoms, and mortality rates. While the accounts are detailed and comprehensive, they lack information that one would expect to find in primary sources. The primary trial protocols, however, are not publicly available and it is unclear whether they still exist. It is thus impossible to confirm the validity of the Japanese reports, in many cases made years after the experiments were conducted. The Japanese military scientists may have distorted their accounts of the human experiments, either to downplay the bestiality of the experiments (in order to avoid prosecution) or to exaggerate the importance of the findings (to increase the interest of the American scientists in their research).

Examining the interview process and the content of the final rounds of interviews (led by Dr. Edwin Hill and Dr. Joseph Victor), it seems unlikely that the Japanese military researchers were trying to diminish the number of Chinese prisoners they had abused and killed. On the contrary, the researchers stated repeatedly that the human experimental victims died or "were sacrificed" during and after the trial – when such a confession did not add any information of scientific interest. For instance, Dr. Kitano Masaji and Dr. Kasahara Shiro, who reported on their human experiments investigating the natural course of epidemic hemorrhagic fever, state that the mortality among Japanese soldiers had been reduced from 30 percent to 15 percent through treatment with intravenous electrolytes, glucose, and insulin. The two researchers then state that "mortality in experimental cases was 100% due to the procedure of sacrificing experimental subjects" ("Songo – Epidemic Hemorrhagic Fever, Interview with Shiro Kasahara and Masaji Kitano" 1947: 42).

It seems more likely that some of the scientists exaggerated the success of their experiments. For instance, Dr. Ishii clearly exaggerated the success of one of his tetanus experiments. He stated that he infected 20 victims with *Clostridium tetani* (or *Bacillus tetani* in the nomenclature of the time) and then gave them a tetanus

antitoxin that he had produced. Ishii claims that he was able to cure all 20 victims of his experiment. In addition, he states that the serum was successful in curing symptomatic tetanus in all 30 cases that had occurred among Japanese soldiers ("Tetanus, Interview with Shiro Ishii" 1947: 51). Such a cure ratio is implausible. Given today's intensive care technology, including medication that did not exist at the time, such as modern muscle relaxants, diazepam and beta-blockers, the lethality of tetanus when treated with antiserum is about 20 percent to 30 percent once symptoms have occurred (Stille 1992: 889–890). Thus, Dr. Ishii is likely to have overstated the success of his treatment: "Serum therapy has effectively cured 100% of 50 cases" ("Tetanus, Interview with Shiro Ishii" 1947: 51). While we can only speculate why Dr. Ishii exaggerated the success of the treatment, it seems plausible that he intended to increase the value of the results of the experiments in the eyes of his American interrogators.

While the accounts of the experiments clearly contain some exaggerations, it is unlikely that such distortions were common. For one, the interviewers were medical and biological scientists with extensive experience in BW research, and would thus have questioned implausible claims made by the Japanese scientists. The interviewers were Dr. Murray Sander (a microbiologist who had taught at the College of Physicians and Surgeons at Columbia University before joining the Army where he conducted BW research at Fort Detrick, the BW research center of the U.S. Army Medical Command), Lieutenant Dr. Arvo T. Thompson (a veterinary physician and BW researcher at Fort Detrick), Dr. Norbert Fell (a microbiologist and head of Planning and Pilot Engineering at Fort Detrick), Dr. Edwin Hill (head of the Department of Basic Sciences at Fort Detrick), and Dr. Joseph Victor (a pathologist at Fort Detrick). During the interviews, the interviewers frequently probed statements by the Japanese scientists, but failed to detect implausibility. Moreover, in a number of instances the Japanese army scientists admitted freely that experiments had been failures when they could easily have claimed success, which suggests that the accounts were truthful. For instance, Masuda Tomosada, who researched vaccinations against bacterial dysentery, describes a number of vaccination methods, but admits that none of them had conferred any protection against the disease ("Report on Dysentery, Information by Tomosada Masuda" 1947: 33). Thus, while some Japanese scientists are likely to have misrepresented the success of their experiments (see Dr. Ishii's reporting of the results of his tetanus experiments above), others appear to have truthfully reported their results. This inconsistency suggests that there was no concerted effort by the Japanese scientists to exaggerate the success of their experiments in order to increase the perceived value of the information they shared with the American interrogators, even though individual scientists may have tried to do so.

The bestiality of artificially infecting human beings against their will with disease pathogens and killing them in the course of the experiments is self-evident. Of course, from a pacifist position rejecting any development of weapons to harm or kill people, the experiments conducted by the Japanese military scientists could never have been ethically justified, even if human beings had not been brutally victimized in the course of the experiments. While the Japanese researchers did

not succeed in developing a biological weapon that could be applied on a large scale, based on a range of sources (Chinese reports, testimonies during the Khabarovsk war crime trials, and U.S. military intelligence reports), it is clear that the Japanese Army did conduct a number of attacks in China (Deng 1965; Han and Yin 1986; "Intelligence Research Project No. 2263" 1945; "Japanese BW Units, Water Purification Units" 1944; Jia 1985; Jiang 1983; Lou 1987; Materials 1950; Shi 1985; Sun and Ni Weixiong 1984; Tang and Cheng 1985; G. Wang 1985; Z. Wang 1984; Williams and Wallace 1989). Table 4.1 summarizes the BW attacks that the Japanese Army is reported to have carried out in China between 1939 and 1944.

Technicalities: relevance, rigor, and research alternatives

Technical analyses play an important role in the debate on the ethics of using data generated in inhumane experiments (Berger 1990). The question whether data from an experiment should be used will arise only if the experiment was relevant (i.e., it investigated a research question that had not already been answered in previous studies and it had at least two outcomes that could plausibly occur) and conducted rigorously (i.e., it was executed such that the data it generated are both reliable and valid).

The question of ethical research alternatives to unethical experiments is important in the debate on the ethics of using unethically generated data because the benefits of using such data will differ substantially depending on whether ethical alternatives exist. If ethical alternatives do exist, the only benefits that can possibly arise from the use of the unethically obtained data are cost savings because ethical research to replace the unethical experiments does not need to be conducted. If, on the other hand, ethical alternatives do not exist, the benefits of using the unethically obtained data will be as high as the value of the information they contain (which could, for instance, be a life-saving treatment). The value of data will not influence the decision whether it should be permissible to use information generated in an unethical experiment, if decision makers adhere either to the "position of strict non-use" or the "position of unrestricted use." Yet, decision makers adhering to the "position of conditional use" are likely to take the value of the unethically obtained data into account in their evaluation of the ethics of data use.

Relevance

Many of the human experiments conducted by Unit 731 were not relevant because they investigated research hypotheses that had either already been proven to be true or were highly implausible. Irrelevant experiments included trials investigating the nature and effects of typhoid, paratyphoid, cholera, bacterial dysentery, smallpox, botulism, gas gangrene, tularemia, plague, anthrax, epidemic typhus, glanders, tuberculosis, brucellosis, and epidemic hemorrhagic fever. This is illustrated in the following paragraphs.

Table 4.1 BW attacks Japanese BW troops are reported to have carried out in China, 1939–1944

Date	*Place*	*Diseases*	*Dissemination mode*
July, August 1939	Western bank of the Hailar River	Typhoid, paratyphoid, bacterial dysentery	Bacterial suspension introduced into the rivers
Summer 1939	Western bank of the Hailar River	Anthrax	Bullets coated with *Bacillus anthracis*
June 1940	Ningbo, Zhejiang Province	Typhoid, cholera	Bacterial suspensions introduced into rivers and lakes
July 1940	Xinwu, Heilongjiang Province	Cholera	Bacterial suspensions introduced into rivers and lakes
October 1940	Zhuxian, Zhejiang Province	Plague	Rice and wheat grains coated with *Yersinia pestis* and infected with *Yersinia pestis* dropped from airplanes
October 1940	Ningbo, Zhejiang Province	Plague	Wheat grains coated with *Yersinia pestis* dropped from airplanes
November 1940	Xinhua, Zhejiang Province	Plague	Wheat grains coated with *Yersinia pestis* dropped from airplanes
December 1940	Shangyu, Zhejiang Province	Plague	*Yersinia pestis* disseminated from airplanes
December 1940	Tangxi, Zhejiang Province	Plague	*Yersinia pestis* disseminated from airplanes
Spring 1941	Changde, Hunan Province	Plague	Cotton balls contaminated with *Yersinia pestis* dropped from airplanes
April 1941	Xindeng, Hunan Province	Plague	Rice grains, wheat grains, and paper shavings contaminated with *Yersinia pestis* dropped from airplanes
November 1941	Changde, Hunan Province	Plague	Cotton balls contaminated with *Yersinia pestis* dropped from airplanes
December 1941	Zhuji, Zhejiang Province	Plague	Cotton and cloth balls contaminated with *Yersinia pestis* dropped from airplanes

(*continued*)

Table 4.1 (Continued)

Date	*Place*	*Diseases*	*Dissemination mode*
1942	Ningshan, Suiyuan, Shanxi Province	Plague	Rodents infected with *Yersinia pestis* released
1942	Wuji, Shanzi, Hebei Province	Plague	Mice infected with *Yersinia pestis* released
May 1942	Jiangxi Province	Typhoid	Dropped from airplanes
May 1942	Shangxiao, Zhejiang Province	Typhoid, cholera, bacterial dysentery	Dropped from airplanes
August 1942	Nanyang, Hunan Province	Plague	Grains coated with *Yersinia pestis* dropped from airplanes
August 1942	Hangzhou, Zhejiang Province	Anthrax, typhoid, paratyphoid, cholera, bacterial dysentery	N/A
September 1942	N/A	Typhoid, paratyphoid	Bacterial suspensions injected mantou (Chinese dumplings) distributed to Chinese prisoners of war before release from prison
Winter 1942	Yi'an, Heilongjiang Province	Plague	Fleas infected with *Yersinia pestis* released
November 1943	Changde, Hunan Province	Cholera	Dropped from airplanes
August 1944	N/A	Plague	Mice infected with *Yersinia pestis* released

Note
BW = biological warfare, N/A = not available.

Examples of irrelevant experiments with research hypotheses that had already been proven to be true

Dr. Ishii conducted the following smallpox experiment. He opened the skin vesicles of patients with smallpox, dried the vesicle content, and forced 10 human beings to inhale the dried substance. All 10 victims fell ill. They developed "large geographically shaped erythematous, swollen and hemorrhagic areas on the body measuring up to 20–30 cm [centimeters] in greatest dimension." None of the victims of the experiment developed vesicles. According to Dr. Ishii, "[a]bout four died" due to the disease ("Smallpox, Interview with Dr. Shiro Ishii" 1947: 50). No relevant research question could have been answered with the experiment. The mode of transmission of smallpox (via droplet infection) as well as the clinical appearance and incubation period were well known at the time (Zimmermann 1940: 157–158). The fact that the content of smallpox vesicles was infectious had been proven 1500 years before in China. The early Chinese scientists had drawn fluid from the pustules of patients with smallpox and had introduced the fluid into the nose cavities of healthy human beings. The healthy humans fell ill with a mild form of smallpox disease and were subsequently vaccinated against the disease (Zeiss and Rodenwaldt 1943: 242).

An experiment with *Francisella tularensis* was similarly irrelevant: "Experiments in M were conducted with 10 subjects who were injected s.c. [subcutaneously]. All developed fever lasting as long as 6 months" ("Tularemia, Interview with Dr. Shiro Ishii" 1947: 54). The mode of infection of tularemia and the symptoms of the disease were well known at the time.

Dr. Tabei Kanau, a former member of Unit 731, described another human experiment (with *Salmonella paratyphi* A (stem Kurokawa)) that could not have been expected to – and indeed did not – produce any research finding of value, because the symptoms of paratyphoid, the mode of infection, and the fact that during fever salmonella bacteria may be found in blood and stool samples were general medical knowledge at the time (Zeiss and Rosenwaldt 1943):

> Experiments in M:
>
> 30 mgm [milligram mass] wet weight were fed in 100 cc [cubic centimeter] 8% sucrose. After an incubation period of 3–6 days, fever and diarrhea appeared lasting five days. Blood and stools are positive during fever and stools remain positive for 7 days after fever subsided. The symptoms may recur over many months.
>
> The disease was highly contagious. When a patient was placed in a room with 3 normal people, the others invariably contracted the disease.
>
> ("Paratyphoid, Interview with Dr. Tabei" 1947: 31)

Another reason for irrelevant experiments was the lack of coordination between the different research groups of Unit 731. Three experiments concerning brucellosis are a case in point. Dr. Ishii conducted the following infection experiment with *Brucella melitensis*: "Experiments in M were carried out by the

subcutaneous injection of more than 20 subjects. Does not remember the result of such experiments except that undulant fever followed injection and persisted for many months" (Brucellosis, Interview with Dr. Shiro Ishii 1947: 10).

Dr. Hayakawa, on the other hand, undertook the following Brucellosis infection experiment:

> A subject was injected s.c. with 0.01 mgm of B. melitensis. After an incubation period of between 2–3 weeks, undulant fever appeared. With the fever, blood cultures became positive. The subject was followed for 6 months and had fever episodes throughout that period.
>
> ("Brucellosis, Interview with Dr. Kiyoshi Hayakawa" 1947: 11)

Finally, Dr. Yamanouchi injected 10 healthy human beings subcutaneously with different doses of *Brucella melitensis* (ranging from 0.05 to 5.0 milligram bacteria solution). All of the victims exposed to doses above 0.1 milligram contracted Malta fever, while only half of the patients who had been exposed to doses between 0.05 and 0.1 milligram fell ill. In all victims, the *Brucella melitensis* agglutinin titer rose to levels of about 1/10,000 following exposure ("Brucellosis, Interview with Dr. Yujiro Yamanouchi" 1947: 12).

If Dr. Yamaonouchi, who intended to determine the *dosis infectiosa minima* with his experiment, had known of the results of Hayakawa's experiment, he would have used lower doses in his trial. Dr. Hayakawa had succeeded in infecting an experimental victim with a dose that was one-fifth of the lowest dose used in Dr. Yamanouchi's experiment ("Brucellosis, Interview with Dr. Kiyoshi Hayakawa" 1947: 11). On the other hand, Dr. Ishii's experiment (in which 20 human beings were killed) could not have been expected to lead to any result that could not also have been obtained through Dr. Yamanouchi's experiment.

Examples of irrelevant experiments with highly implausible hypotheses

In order to test the infectiousness of different viruses and bacteria when they were suspended in aerosols, a 26-cubic-meter large gas chamber was built on the premises of Unit 731 ("Aerosols, Interview with Dr. Takahashi" 1947: 6). Bacteria and virus aerosols could be generated within the chamber or blown into the chamber through rubber tubes ("Aerosols, Interview with Dr. Takahashi" 1947: 6; Morimura 1985: 144). Researchers of Unit 731 investigated whether and in what doses the following diseases could be transmitted via inhalation of aerosols of the causative agents of the following diseases: plague, anthrax, epidemic typhus, glanders, smallpox, tuberculosis, bacterial dysentery, typhoid, brucellosis, gas gangrene, cholera, and epidemic hemorrhagic fever. For instance, Dr. Tabei exposed five people in the gas chamber for 10 minutes to an aerosol suspension of *Salmonella typhi* (or *Bacillus typhosus* in the nomenclature of the time). None of the victims developed any symptoms of typhoid, but all of them suffered from a heavy cough with sputum as well as malaise and headaches ("Aerosols, Interview with Dr. Takahashi" 1947: 6–7). At the time, it was well known that plague,

anthrax, smallpox, glanders, and tuberculosis were commonly transmitted via the airways, while epidemic typhus and brucellosis are rarely transmitted through inhalation of the causative agents. Finally, bacterial dysentery, gas gangrene, and typhoid cannot – as was well established – be transmitted through inhalation (Zinsser and Bayne-Jones 1939). Of the aerosol experiments with the pathogens causing the 12 diseases listed above, only the experiments with cholera bacteria tested an uncertain, plausible mode of infection. From 1914 to 1930, Professor Trillat from the Institute Pasteur in Paris had shown in a series of experiments that – given a certain ambient pressure, temperature, air velocity, and humidity – chickens could be infected with cholera through inhalation of the bacterium, while such infections in human beings had not been described (Hojo 1941: 19).[2]

It is likely that the Japanese military scientists conducted the above infection experiments in order to discover routes of infection which do not occur in nature (for instance, because naturally occurring doses are too low). Such new infection routes may have been used to construct weapon systems to deliver the BW agents. As we shall see, however, the Japanese scientists must have realized that many of their infection experiments could not reasonably be expected to yield any results relevant to their purpose of developing effective biological weapons.

Rigor

The Japanese military scientists conducted many experiments which lacked scientific rigor. For instance, Dr. Ikeda started to investigate the mode of transmission of epidemic hemorrhagic fever in January 1941 in the following experiment. He collected fleas and lice in an area in Manchuria in which epidemic hemorrhagic fever was endemic. He then let the fleas and lice suck blood from patients who had contracted the disease and placed the insects on the skin of healthy human victims. Two weeks after the exposure, a few of the victims showed symptoms of hemorrhagic fever. The experiment was of doubtful rigor because all experimental victims came from the area in Manchuria in which the fleas and lice had been collected, i.e., from an area in which the disease was endemic. Since the incubation period of epidemic hemorrhagic fever is 12 to 24 days it cannot be decided whether those victims of the experiment who showed signs of the disease had been infected by the exposure to the fleas or lice or had been previously infected via another, naturally occurring mode of infection (Tsuneishi 1986: 91).

Another example of an experiment of questionable scientific rigor is a study conducted by Dr. Kasahara and Dr. Kitano. The two scientists attempted to test the hypothesis of whether mites transmit epidemic hemorrhagic fever:

> 203 mites picked from field mice in that area were emulsified in 2 cc saline and injected s.c. in one man with positive results. Another emulsion containing 60 mites produced no effect in another subject. In this way, the subsequent human material was derived from the first case subject who had been injected with 203 mites. In general, the incubation period was between 2 and 3 weeks. Blood from the first experimental case was drawn during fever

> 20 days after injection of the mites. 10 cc were injected into a 3rd man as well as into white mice and monkeys. Subsequent cases were produced either by blood or blood free extracts of liver, spleen or kidney derived from individuals sacrificed at various times during the course of the disease. Morphine was employed for this purpose.
>
> ("Songo – Epidemic Hemorrhagic Fever, Interview with Shiro Kasahara and Masaji Kitano" 1947: 42–43)

Drs. Kasahara and Kitano concluded that mice transmit epidemic hemorrhagic fever. This conclusion, however, does not follow from the results of the experiment. Since a completely artificial route of infection had been chosen, the result can only validly indicate that mice carry the virus but not that they transmit it to humans. In spite of the invalidity of their conclusions, Dr. Kasahara and Dr. Kitano were able to publish part of the results of their human experiments. In their publication they hid the fact that they had used humans in the experiments by claiming they had used monkeys (Kasahara and Kitano 1943). Although the Japanese military scientists must have expected that the value of their publication would be lessened if they did not give details about age, gender, weight, and so on of their "laboratory animals," they stated simply that they had used "Monkeys," "Formosa monkeys," and "Longtail monkeys" (Tsuneishi 1986: 88–89; Wang 1987: 27–28). The description of their experiment in the 1944 publication is strikingly similar to the description they gave Dr. Hill and Dr. Victor (see above) – however, the word "man" was replaced by the word "monkey" (Tsuneishi 1986: 90).

Research alternatives

Examples of relevant experiments with ethical research alternatives involving human beings

A number of experiments conducted by Unit 731 had relevant hypotheses but could have been undertaken without relying on forced human participation. For instance, tests to demonstrate whether or not a typhoid immunization was effective could have been conducted by comparing the naturally occurring incidence rates in a group of immunized people with incidence rates in a non-immunized control group. Instead, scientists under the leadership of Dr. Tabei of Unit 731 conducted the following three immunization experiments. First, 15 Chinese prisoners of war were given one of three immunizations, which had been developed at different locations in the Japanese empire (in Dalian, in the Kitasato Laboratory in Tokyo, and at the Medical University of the Army). The 15 prisoners as well as 15 further victims who had been assigned to a control group were each made to swallow 100 milligrams of typhoid bacteria. Most of the victims contracted typhoid; two died of the disease; one committed suicide. According to Tabei the experiment had been a failure, because none of the immunizations had conferred protection ("Typhoid, Interview with Dr. Tabei" 1947: 56). Second, a similar experiment in which 13 immunized and 13 non-immunized prisoners

were each given a dose of 150 milligrams of typhoid bacteria had a more suc cessful outcome. Five of the immunized, but 12 of the non-immunized prisoners contracted the disease ("Naval Aspects of Biological Warfare" 1947: 56). Third, during the war criminal trials at Khabarovsk, one of the Japanese witnesses who had worked for Tabei's group described the following typhoid experiment at which he had assisted (in 1943). In the experiment, 50 men were given different "preventive inoculations" and were then forced to drink "water contaminated with typhoid germs" (The Khabarovsk Trial 1950: 356–357). In total, 217 people are reported to have been killed in typhoid experiments which could have been replaced by ethical research.

Examples of relevant experiments with ethical research alternatives involving animals

Another type of experiment with ethical research alternatives were studies testing the infectiousness of fluids or viral cultures. Many of these experiments could have been replaced by animal studies, because it was known at the time that certain animals could contract the disease under investigation. For instance, Kasahara and Kitano did not need to use human victims in their studies of the infectiousness of the agent causing epidemic hemorrhagic fever (carried out between 1939 and 1945), because Japanese scientists had already discovered that monkeys as well as rabbits and horses could be infected with the agent ("Songo – Epidemic Hemorrhagic Fever, Interview with Shiro Kasahara and Masaji Kitano" 1947: 42, 44). Bärnighausen (2002) describes six types of human experiments on the infectivity of epidemic hemorrhagic fever that could have been replaced by animal studies. Kasahara and Kitano reported that they killed more than 100 human beings in these experiments.

For instance, the two scientists showed that liver and spleen tissue emulsions of people whom they had infected with the pathogen causing epidemic hemorrhagic fever could infect healthy humans only if the organs were obtained during the fever phase of the disease. For this purpose, they killed seven people whom they had infected during the fever phase and compared the infectiousness of their tissue emulsions with the infectiousness of tissue emulsions of artificially infected victims who had died – as Hill and Victor word it in their report – of a "natural death" ("Songo – Epidemic Hemorrhagic Fever, Interview with Shiro Kasahara and Masaji Kitano" 1947: 43).

The ethics of using of unethically obtained data

The question of whether unethically obtained data may ever be used for scientific purposes has been discussed with regard to the bestial experiments conducted by Nazi doctors on Jewish and Gypsy victims in the concentration camps at Dachau, Auschwitz, Buchenwald, and Sachsenhausen. The negative consequences of any use other than to expose and condemn a "medicine without humaneness" (Mitscherlich and Mielke 1995) include the following:

- Using the data means forgoing an opportunity to build – in the explicit non-use of the data – a symbolic memorial to the victims of the barbaric experiments. Data use is like "building on top of Auschwitz" (Mostow 1993–1994).
- Using the data violates the rights of the victims many times over again (Post 1991; Sheldon and Whitely 1989). Using the data derived from the victims' sufferings renders the data user – in an act of moral complicity – the torturer of the victims (Cohen 1990).
- Using the data implies that the humans who were abused and killed in the experiments were "physiological entities" and not human beings. Data use thus would keep alive a "philosophy" that the value of human beings differs (Pozos 2003).
- The data belong to the victims; only they can give us permission for its use (Post 1988).
- Data use may relativize crimes against humanity and honor the perpetrators, because some good has been gleaned from horrendous deeds (Gaylin 1989; Weitzman 1990).
- Data use may signal to future scientists that immoral research is, in fact, rewarded with citation and reference (even if the ethics of the research are simultaneously condemned) (Angell 1990; Schafer 1986).
- Data use would corrupt the institution of medicine itself (Beecher 1966). It would undermine medicine's public legitimacy by signaling to society that science cares about knowledge above anything else (Post 1991). In fact, knowledge "may be less important to decent society than the way it was obtained" (Angell 1990).

Three ethical positions have evolved on the use of unethically obtained data. First, a "position of strict non-use" holds that unethically obtained data should never be used because the negative consequences of such use always outweigh any good that could be salvaged from data use under any circumstances (Angell 1990; Beecher 1966; Gaylin 1989; Post 1991). Second, a "position of conditional use" allows that unethically obtained data may be used in exceptional circumstances (e.g., a cure for an otherwise incurable disease is contained in the data) given that certain conditions are met (e.g., the means by which the data were obtained is condemned in any publication of the data) (Moe 1989; Neter 1980; Post 1991; Sheldon and Whitely 1989). Third, a "position of unrestricted use" states that data of scientific value should always be available to be used because there are no absolute ethics and each potential user should decide for him- or herself whether data use can be justified. This position requires that publication of the data is always accompanied by detailed accounts of the research methods used to generate the data, so that the reader can make an informed decision on the ethics of data use (Singer 1980).

Even proponents of the "position of unrestricted use" would never consider using a large proportion of the data obtained in the experiments by the Japanese BW units because the research was irrelevant (e.g., smallpox, botulism, paratyphoid, and

brucellosis infection experiments), or the data generated were unreliable or invalid (e.g., infection experiments with the epidemic hemorrhagic fever virus). Proponents of a "position of conditional use" would likely extend the non-use of the Japanese data to results from those experiments for which ethical research alternatives existed (e.g., typhoid vaccination experiments and infection experiments with epidemic hemorrhagic virus). For instance, one type of "position of conditional use" requires that, first, the scientific value of the data is unquestionable; second, publication or citation is accompanied by a strong ethical condemnation of the means by which the data were obtained; and, third, there is no alternative source of information (Moe 1989). In many cases, technical analyses thus obviate the need for an ethical decision on the use of data from some of the inhumane Japanese experiments. However, among the known Japanese experiments, examples exist which require an ethical decision because they generated data that – judging from all publicly available evidence – may be valid and could not be generated through ethical research methods. Such experiments include tuberculosis vaccination trials, studies with mustard gas, and experiments investigating the effects of extreme cold on human beings. These three examples will be analyzed below.

Examples of relevant experiments without ethical alternatives: tuberculosis vaccination experiments

Dr. Futagi Hideo, who conducted tuberculosis vaccination experiments while a member of Unit 731, summarized the results of his research to the American BW experts Hill and Victor as follows:

1 "Comparison of reaction of tuberculin positive and negative individuals to inhalation of 1 mgm *Cl. tuberculosis hominis* revealed significant differences in the clinical course without x-ray changes."
2 "Tuberculin positive individuals were more resistant to infection by inhalation of these bacteria."
3 After inhalation of *Mycobacterium tuberculosis* "Tuberculin negative cases developed positive tuberculin reaction just before bacteria appeared in sputum. Blood cultures were negative in both series."
4 "In tuberculin positive subjects, *Cl. tuberculosis hominis* was much more virulent than BCG (bovine) when injected i.v. [intravenously]."
5 "BCG produced miliary tuberculosis when injected i.v."
6 "Intravenous *Cl. tuberculosis hominis* was less severe clinically, but had greater mortality in tuberculin negative than in tuberculin positive individuals. It produced miliary tuberculosis. The tuberculin reaction became positive in tuberculin negative cases."
7 "*Cl. tuberculosis hominis* produced chronic, progressive inflammation lasting more than 6 months when injected i.c. [intracutaneously] in tuberculin positive individuals. B.C.G. results in similar but less severe infection of shorter duration."

("Tuberculosis, Interview with Dr. Hideo Futagi" 1947: 61–64)

During World War II, different scientific teams attempted to determine the degree to which a positive tuberculin test would protect from tuberculosis; whether or not a vaccination with Bacille Calmette-Guérin (BCG) conferred protection and how harmful it could be; and which application mode of BCG should be employed in order to minimize harm to patients (Zeiss and Rodenwaldt 1943: 176–178; Zinsser and Bayne-Jones 1939: 454–455). Dr. Futagi's experiments were thus relevant given the knowledge of the time. The tuberculosis vaccination experiments were likely to have been reliable, as may be judged from Dr. Futagi's descriptions in the Hill and Victor document. Finally, had Dr. Futagi restricted his research to the investigation of naturally occurring cases rather than abusing humans against their will in the experiments, he would not have been able to realistically obtain the above results. A standard textbook of hygiene and infectious diseases of the time summarizes the difficulty of tuberculosis research as follows (after posing the question whether the BCG vaccination confers any protection at all): "As with all questions relating to tuberculosis, only observation over decades and sound statistics may bring clarification" (Zeiss and Rodenwaldt 1943: 178). Dr. Futagi's ethically reprehensible human experiments (as in all experiments of Unit 731, all human subjects were eventually killed) had an advantage over ethical experiments addressing the same questions in that they reduced the length of time needed to obtain meaningful results. From a practical perspective, ethical experiments were virtually impossible to complete, while Futagi's experiments could be easily completed in a comparatively short period of time. In addition, the experiments enabled the researchers to derive results that were far more detailed and powerful than could have been obtained in ethical research, because the mode of infection and the exposure doses were controlled. The benefits to society derived from the results of the inhumane tuberculosis experiments might have been quite large, because the research was relevant to finding effective protection against a common, highly burdensome, and potentially deadly infectious disease.

Examples of relevant experiments without ethical alternatives: mustard gas experiments

A second example of research conducted by members of Unit 731, which was relevant, likely sufficiently rigorous, and not reproducible with ethical research methods are the experiments with mustard gas. In September 1940, members of Unit 731 chained 16 human beings to poles in an open-air experimentation field close to Harbin. The experimentation field was divided into three areas. Experimental victims in the first area wore "no caps, no masks, regular cloths, underwear, and slippers"; the victims in the second and third area wore "army trousers"; and those in the third area also wore gas masks. After the "objects" had been chained to the poles, Japanese soldiers attacked the field with mustard gas bombs using canons and grenade throwers. "The shooting time lasted for 40 minutes: 15 minutes of shooting, 15 minutes break, 10 minutes shooting." Next, the experimental victims were unchained and transported back to the prisons of Unit 731, so that military physicians could examine their health status.

Laboratory examinations added information on the health effects of mustard gas attacks. For instance, the scientists examined the fluid from the blisters that had formed on the skin of the victims 12 hours after the attack and found that on average one milliliter of fluid contained 20–50 cells, 52.9 percent of which were polymorpho-nuclear leucocytes, 41.2 percent were lymphocytes, and 5.9 percent monocytes (Matsumara 1986: 49). The scientists then conducted a number of follow-up experiments. For instance, they injected fluid from the blisters on the skin of the initial victims into the skin on the upper arms or the corneas of additional victims in order to investigate whether the fluid had poisonous properties.

The results of the mustard gas experiments were not only relevant for the design of offensive chemical weapons, but also for the treatment of victims of attacks with such weapons. Judging from the publicly available data, the experiments yielded meticulous descriptions of the clinical symptoms and laboratory parameters at frequent intervals after attacks with chemical weapons that had been carried out under controlled conditions. Obviously, such experiments can never be conducted ethically.

Examples of relevant experiments without ethical alternatives: frost bite experiments

Another type of relevant and rigorous research without ethical alternatives is the freezing experiments conducted by a research group under Dr. Yoshimura Hisato at Unit 731. These experiments were of incredible cruelty. The scientists forced prisoners to stand motionless for 20 to 30 minutes in a –30 to –40 degrees Celsius environment, while exposing a naked finger, hand, foot, arm, leg, nose, or scrotum to the cold (Han 1986: 20–21). The scientists used a ventilator to generate air currents of different velocities in order to accelerate the freezing process (Han 1986: 20–21; Morimura 1985: 103).

Starting in 1943, Dr. Yoshimura conducted cold experiments in a special laboratory building on the premises of Unit 731. The laboratory allowed the scientists to keep experimental conditions (such as temperature) constant and to conduct freezing experiments throughout the year (Cao 1951: 10–11; Han and Xin 1991: 116; Morimura 1985: 103). Despite the immense cruelty of the experiments, Yoshimura and his colleagues were able to publish some of their data in the English-language *Japanese Journal of Physiology* after presenting them at the 21st (in 1942), 22nd (in 1943), and 25th (in 1948) meeting of the Japanese Physiological Society (Yoshimura and Iida 1952a, 1952b, 1952c).

In these publications, the scientists do not explicitly mention some of the most inhumane aspects of their experiments, namely that all of the experimental subjects were forced against their will to participate and were killed following completion of the studies. However, those who read the article should have been highly suspicious of the nature of the experiments. For one, the trial participants were "Chinese coolies" and "Chinese pupils," while the researchers were Japanese, and the experiments had been conducted during the Second Sino-Japanese War

and World War II, when Japan had invaded large parts of northeastern China. Moreover, the participants included children under 15 years of age and a baby (Yoshimura and Iida 1952b: 177–178):

> The temperature reaction in ice-water was examined on about 100 Chinese coolies from 15 to 74 years old and on about 20 Chinese pupils of 7 to 14 years. . . . The maximum reactivity was found at the ages of 25 to 29 years, and, as the age became younger and older, the reactivity generally decreased more and more, except that in childhood it was higher than in puberty. Thus the general aspect of change of reactivity with age was similar to that of the other physiological functions. Though detailed studies could not be attained on children below 6 years of age, some observations were carried out on a baby. As is seen in fig. 2, the reaction was detected even on the 3rd day after birth, and it increased rapidly with the lapse of days until at last it was nearly fixed after a month or so.

A number of later studies cite the three articles published by Yoshimura and colleagues in 1952 (Bridgman 1991; Hirai et al. 1968; Konda et al. 1981; Miura et al. 1977; Nelms and Soper 1962; Sawada et al. 2000; Spurr et al. 1955; Tanaka 1971a, 1971b). The authors of these articles and other medically trained readers would have realized that the experiments had caused the participants considerable pain. During the experiments, the middle finger, the whole hand, the toe, or lower leg of a victim was immersed into water of 0 degrees Celsius for either 30 or 60 minutes. The water was regularly stirred in order to maintain 0 degrees around the immersed body part and the skin temperature of the body part was measured every minute. The temperature curves show a fall from normal body temperature to around 5 degrees Celsius in the first 10 minutes and then an oscillation around 5 degrees Celsius for the remainder of the experiment (i.e., up to either 30 or 60 minutes). Exposure to such temperatures for these lengths of time causes enormous pain. Indeed, Sawada Shinichi, Araki Shunichi, and Yokoyama Kazuhito (2000: 85) describe the pain caused by Yoshimura's procedure as follows:

> As mentioned above, Yoshimura et al. proposed a local cold tolerance test, because the CIVD [cold-induced vasodilation] reactivity is closely related to an individual's frostbite resistance. This test method has, however, consisted of 30-min immersion of fingers in ice water (0° C [Celsius]). Under this test condition, most of the participants have tended to feel much pain and distress, and some have either fainted or had to withdraw prematurely from the experiment. We, therefore, previously proposed a simplified and less painful test for evaluating local cold tolerance as a substitute for Yoshimura's method.

Unlike follow-up studies, which used Yoshimura's local cold tolerance test, not one participant withdrew from the original study, suggesting that the participants did not have the choice to withdraw.

Some of the results of the experiments described in the three 1952 articles by Yoshimura and colleagues were relevant for medical practice. The reported effects of environmental factors (such as wind velocity or humidity) and individual factors (such as diet or sleep) on resistance to extreme cold could help to minimize cold-related injury. The experiments may also have been conducted reliably. The Japanese military scientists meticulously recorded the temperatures of each of the victims and controlled a large number of individual and environmental factors that are known to influence resistance to cold. Further, no research alternative existed for the experiments. In addition to the extreme pain experienced by the individuals forced to participate in the experiments, some of the victims suffered vasospasms that can completely block the blood supply to the affected body parts, causing necroses (Ulmer 1997: 721) – an unacceptable consequence in ethically conducted research.

As the examples of the tuberculosis vaccination, mustard gas, and freezing experiments show, at least some of the data generated by Unit 731 may be considered for publication or use by proponents of a "position of conditional use." Certainly, the information contained in the data is not sufficient to fully establish reliability. For instance, no information on the victims' weight, body fat, health status, current medication, or smoking history – all of which may influence cold resistance – is provided in the published articles. However, since the publicly available data on the freezing experiments are only secondary data, it cannot be ruled out that such information does in fact exist in the primary sources. In addition, even if the Japanese scientists had not documented some factors, the relevant information could possibly be inferred or generated from other sources.

The uncertainty about the existence of data that is not yet publicly available renders the case of Unit 731 more complex than other cases of unethically obtained data that have been discussed in the literature. The publicly available data are sufficient to evaluate some of the experiments as certainly irrelevant, unreliable, or reproducible with ethical experiments. For other experiments, it may be established that the research question pursued was relevant and that no ethical research could replicate the barbaric human experiments. While some doubt might remain about the reliability of this subset of experiments, it cannot be ruled out that they were conducted with sufficient scientific rigor to generate valid results. In this context, it is important to know that Hill and Victor as well as the State–War–Navy Coordinating Subcommittee for the Far East (SWNCC) evaluated the data they had obtained from the Japanese military scientists as highly valuable. For instance, Hill and Victor (1947: 5) write:

> Evidence gathered in this investigation has greatly supplemented and amplified previous aspects of this field. It represents data that have been obtained by Japanese scientists at the expenditure of many millions of dollars and years of work. . . . These data were secured with a total outlay of ¥ 250,000 to date, a mere pittance by comparison with the actual cost of the studies.

In their evaluation, Hill and Victor stress the fact that the experiments could not be replicated in the United States: "Such information could not be obtained in our own laboratories because of scruples attached to human experimentation" (Hill and Victor 1947: 5).

The SWNCC, in turn, implicitly attributes value to the data in proposing a rationale for why Russian prosecutors, who had demanded access to the Japanese scientists (arguing that they had obtained evidence that these scientists had committed war crimes), should be denied such access:

> This Japanese information is the only known source of data from scientifically controlled experiments showing the direct effect of BW agents on man. In the past it has been necessary to evaluate the effects of BW agents on man from data obtained through animal experimentation. Such evaluation is inconclusive and far less complete than results obtained from certain types of human experimentation.
>
> (SWNCC 1947: 7)

The data that have been made publicly available to date at the Library of Congress and the National Archives in Suitland, Maryland, are certainly of value to the scientist studying the history of biological warfare and human experimentation. It is of only questionable value for medical science and practice. As shown above, a large proportion of the publicly known experiments were either irrelevant or unreliable; other experiments provided evidence of relevant research, but would require additional information to be of direct scientific value. Because the American BW specialists Hill and Victor as well as the SWNCC attached high value to the data, it seems likely that only a proportion of the data secured by Hill and Victor has to date been declassified.

Given the content of the publicly available information on the experiments and the uncertainty about the existence of additional data, the case of the Japanese BW units offers a (currently) unique opportunity for a debate on the ethics of the use of unethically obtained data. The problem posed by the Japanese experiments demands an ethical decision in a situation where there is evidence, but not certain evidence, that the data obtained in some of the most barbaric human experiments known are, in fact, of scientific value.[3] Behind such an imperfect veil of ignorance (Rawls 1971), a decision for one of the three positions on the use of unethically obtained data outlined above carries more ethical weight than if we had either complete certainty about the scientific value of the data or no evidence that such data existed. In the first case, technical arguments about the reliability and validity of the data might lead to the same action recommendations as ethical arguments about data use or non-use, and thus reduce the burden on the ethical argument to prove its conclusion. In the latter case, the ethical arguments have no urgency, and the defenders of any position are free to imagine extreme examples – however implausible – that make it hard for proponents of an opposing view to maintain their position. (For instance, proponents of a "position of conditional use" may ask adherents of a "position of strict non-use" if they would

maintain their stance if the unethically obtained data contained a cure for all cancers.)

Two counter-arguments might be brought forward against the claim that the case of the Japanese BW units is distinctive owing to its specific mix of knowledge and uncertainty. First, it may be argued that all data from the inhumane Japanese experiments are worthless to civil society – irrespective of the reliability and validity of the findings – because the purpose of the experiments was to develop offensive biological weapons. This claim can be easily refuted. For one, not all of the experiments conducted by Unit 731 were concerned with a goal of producing offensive BW (e.g., the freezing experiments). Further, results of BW research are commonly useful for both offensive and defensive BW, as well as for non-military purposes (Leitenberg 2003). A case in point is the vaccination research conducted by Unit 731. The fact that an army conducting offensive BW will need effective vaccinations to protect its own soldiers does not preclude the use of the same vaccination in defending a country against a BW attack or in preventing naturally occurring infections.

The second argument might hold that "good science" can never come from unethical experiments. It may not be a coincidence that a large proportion of the research conducted by the Nazi physicians in German concentration camps and by the Japanese military physicians in China has no scientific value. For one, research that brutally abuses human subjects must lack the normal quality controls built into ethical scientific endeavors. Neither the Nazi physicians nor the Japanese military scientists could discuss their research with international colleagues or routinely submit their findings for publication. Neither obtained the funding for their research from scientific institutions but from a wartime bureaucracy and the army. Consequently, these researchers lacked an integral part of good science: criticism and approval from the larger research community. Moreover, researchers, whose conscience did not prevent them from killing other human beings in brutal experiments, may be more likely to distort or falsify scientific results than researchers who refused to partake in such experiments.

However, while many of the experiments conducted by Unit 731 may indeed have lacked scientific rigor, it does not necessarily follow that all of the experiments produced useless data. Evidence that results of some of the experiments may have had scientific value includes articles published by members of Unit 731 and the U.S. Intelligence reports documenting the interest of American BW researchers in the findings. Further (indirect) evidence that some of the Japanese BW research had scientific merit may be seen in the remarkable careers of many of the Japanese scientists upon their return from occupied China (Williams and Wallace 1989: 236–242); former members of Unit 731 rose to some of the highest positions in Japanese academic medicine. For instance, after World War II Dr. Kasahara, who conducted many of the barbaric experiments described above, became Chief Pathologist of the renowned Kitasato Institute in Tokyo and later rose to the position of Vice-President of the Institute. Dr. Yoshimura, who killed hundreds of human beings in the frostbite experiments described above, became President of the Medical Faculty of Kyoto University as well as Scientific Advisor

to the Japanese Antarctic expedition and President of the Japanese Society for Meteorology (Han and Xin 1991: 332–352; Tsuneishi 1986: 22; Who's Who in Contemporary Japan 1963: 155; Williams & Wallace 1989: 236–242).

In the (current) case of the Japanese BW experiments – characterized by uncertainty about both the scientific value of many of the findings and the existence of further data – I believe the "position of strict non-use" to be preferable over the other two ethical stances on using unethically obtained data. Certainly, any data which have not yet been made public by either the Japanese or the American government should be made public immediately, so that it can be incorporated into historical accounts of the Japanese BW units. Such a demand, however, would lose its ethical force if it were not accompanied by a declaration that – without exception – the data will not be used for scientific or practical purposes. Leaving open the possibility to use the data would render the victims of the experiments also victims of our decision to demand public disclosure of all the information on the experiments. Unconditional non-use, on the other hand, would have an invaluable symbolic meaning as a memorial to the victims. It would also imply a symbolic punishment of the scientists of Unit 731, who were allowed to pursue renowned careers after World War II, in many cases by exploiting the experience and building on the research results obtained by killing Chinese and Russian prisoners of war (Bärnighausen 2007). Finally, a decision to adhere to a "position of strict non-use" rather than a "position of conditional use" would draw a stark symbolic contrast to the pragmatic stance taken by the U.S. government and military that led to the decision to grant freedom from prosecution to the Japanese military scientists in exchange for unethically obtained data:

> It is recognized that by informing Ishii and his associates that the information to be obtained regarding BW will be retained in intelligence channels and will not be employed as war crimes evidence, this government may at a later date be seriously embarrassed. However, the Army Department and Air Force Members strongly believe that this information, particularly that which will finally be obtained from the Japanese with respect to the effect of BW on humans, is of such importance to the security of this country that the risk of subsequent embarrassment should be taken.
>
> (Special Staff, United States Army Civilian Affairs Division 1947: 1)

Notes

1 In this chapter, the reader should note that many sources give the name of Japanese with the surname last, such as Shiro Ishii. As in the rest of the book, however, Japanese names are given in the text with the surname first, such as Ishii Shiro.

2 In contrast to his colleagues at the L'Institute Pasteur, Professor Nicolle, Professor Trillat was convinced that biological warfare would be possible if certain conditions were met simultaneously: "Pour qu'elle (la guerre bacteriologique) réussisse, il faut en effet un ensemble de conditions qui ne se trouvent pas réunies en tous temps" (Sudre, cited in Committee Imperial Defence 1938: 35).

3 While the case of the Japanese BW units offers an important example on which to debate the use of unethically obtained data, many other cases of abuse of humans

in medical experiments exist, as described in several chapters in this book. It is important to note that abuses of unwilling or unaware victims in medical experiments were not confined to countries under fascist or para-fascist rule – even though some of the worst crimes against humanity were committed in Nazi Germany and Imperial Japan – but have occurred as well under communism and in democracies. Examples include the poison tests on Gulag prisoners in the Soviet Union (Birstein 2004), and the Tuskegee syphilis study (Tuskegee Syphilis Study Legacy Committee 1996) and human radiation experiments (Advisory Committee on Human Radiation Experiments 1995) in the United States. The discussion of the Japanese case may thus be relevant to other past abuses and likely – even if one dares to hope otherwise – to future abuses.

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5 Discovering traces of humanity

Taking individual responsibility for medical atrocities

Nanyan Guo

Introduction

The medical atrocities committed by the Ishii network and the Medical School of Kyushu Imperial University during the Second World War reflect a severe erosion of morality and humanity. The death sentences meted out to thousands of experimental victims for the sake of "medical research" violated the basic principles of medicine, whose goals historically have been the relief of pain, the saving of life, and the restoration of humanity.

The discourse of these medical atrocities incorporates a voluminous literature of reminiscences and confessions detailing the ways in which the atrocities were carried out. However, among them there are only a few examples of ethical reflection by participants and consideration for the suffering and dignity of victims, and even fewer cases where the perpetrators felt unwilling or unable to continue their participation in the atrocities. This phenomenon leads us to consider both their rare manifestations of humanity and the ready discarding of empathy as a result of the careerism or nationalism that pervaded both the Japanese Army and the medical establishment.

In order to understand how and why a tiny minority of people managed to keep their humanity intact in such circumstances, this chapter will focus on examples of individuals who rejected the atrocities they were involved in and who showed remorse toward the victims. First, we will examine the ways in which the atrocities in question were commonly justified and denied. Second, we will assess the significance of what remained of morality in the minds of particular individuals. Finally, we analyze the mechanisms by which an individual's moral choices make a decisive difference in such extreme situations. The major materials on which my research is based include participants' confessions, witness testimonies, documentary writings, scholarly studies, and non-fiction novels and fictional treatments have been published in Japan.

It is important to state at the outset that the materials discussed here all draw on postwar accounts. Testimonials gathered after the war may fail to accurately reflect what the participants actually thought in the process of committing their atrocities. It is nevertheless important to analyze these reminiscences as they indicate what some perpetrators may have thought at the time, or at least what they wished they

had thought. Such a "wish" is itself a sign of an awakened morality either because of being forced to confess in Chinese prisons, or through the pressures of postwar Japanese society, or self reflection. Nevertheless, this "wish" is the major focus of this chapter.

An outline of the atrocities and the postwar trials

The "medical atrocities" carried out by Japan during the Second World War include the development of biological and chemical weapons, the utilization of biological warfare, and the use of human vivisection for medical and educational purposes. Most of these atrocities were committed by the Ishii network which consisted of Unit 731 (Harbin), Unit 100 (Changchun), Unit 516 (Qiqihar), Unit 1855 (Beijing), Unit 1644 (Nanjing), Unit 8604 (Guangzhou), the Preventive Research Laboratory (Tokyo), and Unit 9420 (Singapore). There was vivisection which was carried out at Kyushu Imperial University Medical School before the end of the Second World War.

Only a few of those who committed these atrocities were tried after the War. In December 1949, following the Khabarovsk Trial 12 persons were sentenced to terms of imprisonment ranging from 25 to two years. However, all were returned to Japan by 1956, except for one man, Karasawa Tomio, who committed suicide before their departure for Japan (Kondo 2002: 186–187). In August 1948, the allied occupation force in Japan, GHQ, conducted the Yokohama Trials over atrocities carried out at the Kyushu Imperial University Medical School in which eight American airmen, survivors from a downed B-29 bomber, were vivisected for "medical practice" between May and June 1945 (Sugamo homu iinkai 1981: 237–239). Five defendants were sentenced to death and three to life imprisonment. However, all the sentences were commuted in 1950. In China, in 1956, military tribunals in Shenyang tried a surgeon officer, Sakakibara Hideo, for his leadership role in the Linkou Branch of Unit 731 in addition to other Japanese war criminals (Guo 1995: 336, 346), but all were returned to Japan by 1964.

The U.S. Army Chemical Corps located in Camp Detrick in Frederick, Maryland, was given permission by the U.S. government to grant Ishii Shiro and his colleagues immunity from war crimes in exchange for their research data. The U.S. did not know that human experiments had been conducted by the Japanese until late 1946, when the Soviets revealed information gained from Japanese prisoners held in the Soviet Union. The Soviets sought extradition of Ishii and his colleagues in order to gain access to the research data already obtained by the U.S. They also threatened that if the U.S. did not agree to this arrangement, they would disclose the Japanese atrocities at the International Military Tribunal for the Far East in Tokyo (1946–1948).

Although the U.S. authorities well understood that the immunity granted to Ishii was at odds with the Nuremberg Trials where Nazi doctors had been prosecuted for inhuman experiments, the U.S. nevertheless granted him and his colleagues immunity. According to the report by Edwin V. Hill, "Such information could not be obtained in our own laboratories because of scruples attached to

human experimentation. These data were secured with a total outlay of ¥250,000 ($695) to date, a mere pittance by comparison with the actual cost of the studies" (Hill 1947). Hill's line of reasoning indicates that the U.S. shared the same logic as the Japanese medical researchers who justified human experiments for "medical research" purposes that overrode humane values. This rhetoric of "the end justifying the means" suggests that both sides in the war had lost their moral compass. Similar phonomena may be seen from comfort women issues, mass slaughter of Chinese civilians, U.S. firebombing of Japanese cities and the use of nuclear bombs on Hiroshima and Nagasaki.

With the protection of the U.S., and without coming under any further scrutiny, most Japanese military doctors and researchers involved in human experimentation survived – and, indeed, thrived – well into the postwar period. Some became university presidents, faculty deans, prominent professors, heads of private research institutes and medical associations, and so on. Others, however, adopted low profiles to work in local clinics or public health institutes, perhaps in an attempt to atone for what they had done during the War.

Denials and justifications

Denials and justifications of wartime medical atrocities are commonplace in Japan. The most often repeated pretexts are "the national interest," "the Emperor's command", and the need for "scientific research." These justifications all figure in the statements made by five members of the Ishii network after the war:

1 "There is nothing shameful in what I did at Unit 731. . . . The Soviet Union was also conducting research into germ weapons . . . I was doing this for Japan, and I am not ashamed at all of what I did" (Hiyama 1980: 105).
2 "We fought for our country. What was wrong with using *maruta* [literally, 'logs'] as experimental material for the benefit of Japan? What do you people know about this, if you didn't go to the war?" (Morimura 1985, 2004: 50).
3 "We believed that the war was conducted in order to bring wealth to Japan, which was a poor country in those days, and to bring peace to Asia . . . therefore we believed that *maruta* were not human beings. They were even lower than animals. . . . No one in Unit 731 ever had any sympathy for them. To all of us, they deserved to die" (Morimura 1983, 1995a: 58).
4 "Because my older brother was killed by the Chinese, I did not have any sympathy for *maruta*" (731 Research Society 1996: 79).
5 "Although I wielded the surgical knife for almost four years, I did not have even the slightest sense of guilt. Everyone believed we were doing this for the Emperor" (Nihon jido 1983, 2000: 26).

It is clear from these statements that these five individuals did not perceive any humanity in their victims. The national interest was paramount, and their morality was narrowed to a single focus: what would benefit Japan. In the first statement, the speaker chooses to believe that it was perfectly right to carry out these

experiments because another country was doing the same. Choosing his words carefully, he mentions only the Soviet Union and not the United States. He emphasizes his pride in his work at Unit 731. It seems the "moral support" he gained from national policy, feelings of racial superiority, and army orders was so strong that he could comfortably set aside any individual morality. The following four statements echo his value premises. Any possible doubt, hesitation, or sympathy was completely eliminated. Their consciences remained numb. If a few perpetrators ever felt at all sorry for their victims, it is only because the victims at least resembled animals; as one female member of Unit 731 recalled, "Whenever I saw the smoke coming from the chimney I always joined my hands to pray for their souls, even though we called them 'black-headed rats' " (Gunji 1982a: 154). These statements all reveal the troubling fact that their wartime mentality remained intact after the War, with the term *maruta* being repeatedly used. It seems that these perpetrators lacked any self-reflection on the state of their consciences as individuals and continued to ignore the human value and dignity of their victims. In so doing, they set aside the opportunity to restore their own humanity which had been grossly eroded during the War. Of course, some people's public denials might have been defensive reactions which do not necessarily reflect their deeper feelings.

Another common rationale was the "development of medical science" for the benefit of postwar society. The author of the documentary novel *Nomi to Saikin* (*Lice and Bombs*), Yoshimura Akira, writes that most Japanese surgeons dreamed of conducting human experiments, and three surgeons from Japanese national universities made a special visit to a Kwantung Army Unit in Manchuria in order to have the opportunity of examining human necks in cross-section immediately after decapitation. Their academic "curiosity" and "enthusiasm" even impressed the army chief (Yoshimura 1975: 30–31). One former military doctor stated: "I must emphasize that the research results gained by military surgeons during the war greatly contributed to medical developments in the post-war period" (Ishida 1982: 47). When the logic of "the end justifies the means" is applied, the atrocities were easily excused for the tangible gains they seemingly accrued.

Generally speaking, both during and after the War, only a few perpetrators publicly claimed an awakening of conscience as a result of reflection over war atrocities they had committed. Among 2000 patients at the Konodai Army Hospital, a research center for mental illness that operated from 1937 until 1945, only two persons were reportedly affected by their memories of slaughtering Chinese; both repeatedly saw the faces of their Chinese victims in their dreams (Noda 1998: 342–343). According to new research, in the same hospital around 31 out of 374 patients had symptoms related to an abiding sense of guilt of killing Chinese (Shimizu 2006, 2007: 229, 233). It seems that only a small minority developed mental illness because of their consciousness of crimes. A few people from Unit 731 disclosed the trauma they suffered. One member confessed that he was traumatized by his experience of vivisecting a Chinese woman who suddenly woke up owing to inadequate anesthesia. Another member said that two kinds of sound had stuck in his ears all his life: one is the sound of the beating of a victim's

heart which was just taken out and was measured by a table balance, and the other is the sound of prisoners' fetters (Nishino 2002: 221–222).

A residual belief in human values

Although it was very uncommon for military medical personnel to show any respect for their victims' humanity, some individuals did so. One Unit 731 member, Chida Hideo, could not cope with the atrocities involved in human experimentation and suffered a mental breakdown. He could not understand why so many Chinese had to be sacrificed in such a gruesome way in order to "save Japanese soldiers' lives." He told his superior about his misgivings, and was fortunate enough to be allowed to transfer to another department to avoid further distress where he was not directly involved in human experiments (731 Research Society 1996: 104–108).

There were also individuals who remained unconvinced by what they were ordered to do in Unit 731. A junior member of the unit, Tsuruta Kanetoshi, who served in Nomonhan on the Russian–Manchurian border between May and September 1939, the site of a Japanese–Russian clash, was ordered to pour typhoid bacilli into a river in order to poison local residents. When later asked by Ishii Shiro in person how he felt about the War, he replied unhesitatingly, "It's better not to go to war." Because of telling the truth of his mind, Tsuruta was punished by being made to feed lice on his own body for three days (731 Research Society 1996: 67–68).

A few brave individuals placed humanity above all other considerations in such circumstances. One Unit 516 member recalled that his unit had a rare atmosphere of freedom, and that when "technician lieutenant S.Y.," a graduate of Osaka University, was ordered to participate in a gas experiment on prisoners, S.Y. "rejected the order by telling his boss, Captain N, that he was a Catholic, and therefore could not participate in such inhuman experiments." His disobedience was overlooked by the captain (Morimura 1983, 1995b: 62–64). This example suggests that the humane religious beliefs held by an individual, combined with a relatively relaxed environment, could give someone the strength of will to reject participation in atrocities. At the same time, we should not forget that, according to its members' testimonies, Unit 516 ruthlessly sacrificed many lives through gas experiments (Morimura 1983, 1995b: 56–70).

This case resembles that of Doi Takeo, the author of *Amae no Kozo* (*The Anatomy of Dependence*), who told his superior when he was conscripted, "I am a Christian, therefore I will not kill anyone" (Endo 2000: 390). Neither S.Y. nor Doi was persecuted for their religious beliefs and their rejection of acts involving doing harm to others. These examples suggest that an individual with a firmly established moral code has the potential to resist inhumanity and become a catalyst for change. Sometimes, disobedience does win out.

Sometimes, such moral resistance was expressed in more private terms. Hayashi Atsumi, a military surgeon and a Christian, wrote in his diary for December 28, 1942: "The essence of medicine must be a religious state of selflessness . . .

otherwise it can only degrade the medical practitioner." After the war, Hayashi criticized a colleague who conducted vivisection solely out of curiosity (Mizutani 1997: 67–69). These individuals managed to keep their morality intact by either publicly stating or privately recording their opposition to medical atrocities. Their resistance is a ray of light in the darkness.

Others protested internally, in their own minds, against the atrocities, if not to their superiors. A member of Unit 1644 stated: "When I saw the blackened face of the *maruta* after his blood had been completely drained, I wondered how someone could do such a thing to him . . . What had the *maruta* done to deserve these atrocities . . . I wanted to treat them like human beings" (Matsumoto 1996: 188–190). A member of Unit 731 often gave prisoners cigarettes before they were killed:

> What did these Chinese people feel? I trembled when I imagined myself in the same situation . . . I wanted to apologize to each one of them when I was assisting with the injections that were forced upon them . . . I couldn't understand how Japanese could perform these experiments without a sense of guilt. I couldn't believe that our soldiers would be made safer by those deadly experiments . . . I still can't forget those Chinese faces after 40 years.
>
> (Senda 1996: 104–109)

Their innate sense of morality helped these operatives refuse to "understand" the atrocities they were involved in. What is the purpose of draining a person's blood? How can lethal experiments save lives? If we would reject such a cruel death for ourselves, why do we inflict it on others? Why can't the Chinese be treated like human beings? These simple questions removed all justification for the medical atrocities in the minds of these individuals.

Some participants might have felt uncomfortable at the beginning, but gradually accustomed themselves to participation in the gruesome experiments. For instance, one Unit 731 member recalled:

> When I pulled the knife out of his body, blood dropped on my hand. I can never forget that moment. I could not eat my dinner that day, and I had nightmares for the whole week. Although I didn't regard the Chinese as human beings, I hated cutting them up like this. However I could not disobey the order.
>
> (Hoshi 2002: 187–188)

This individual's perception of the low value to be placed on the lives of Chinese made it possible for him to continue to obey orders, even if he was clearly aware of the inhumanity of the experiments.

Although not brave enough to either criticize or disobey orders, some perpetrators showed their sympathy for the victims. A number of reminiscences reveal their inner voices. A former prison guard recalls his feelings toward two female prisoners who were experimental subjects, along with a small child. "With

tears in their eyes, the grandmother and the mother both begged me to free the little child, and said they were ready to die at any time through any experiment (if only the child could be saved)." Their words resounded in his heart, as he had recently lost his 2-year-old daughter to measles. The only comfort he could offer was this reply: "OK, I'll consult my boss" (Kamiya 1998: 82). Even though the guard could offer no practical assistance, his expression of sympathy and willingness to help must have given some hope to the women. To be given hope is to be treated like a human being. Respecting people's humanity requires the ability to imagine their suffering. In this case, the guard's pain at losing his daughter enabled him to imagine the agony experienced by the women.

Some perpetrators even managed to experience empathy, feeling their victims' suffering as if it were happening to themselves. One Unit 516 member witnessed the death of a mother and her daughter being poisoned by gas. "The cruel thing is that I was even holding a stopwatch to measure the time that it took them to die. . . . After 37 years, I can still clearly see the mother's soft hands covering the child's head to protect her from the prussic acid gas in the chamber" (Morimura 1983, 1995b: 70–71). His detailed description of the victims' facial expressions reveals his understanding of their fear and despair during the killing process, an experience which had kept his conscience awake for four decades.

Similarly, a truck driver for Unit 731 recalled his feelings one day after he had driven a group of prisoners to an open field for gas experiments; the victims "happily and deeply breathed in the fresh air and bathed in the sunlight with glittering eyes, not knowing they would die in just a few hours." At that moment, he could not help feeling that "they *were* human beings" too, and he could no longer treat them as *maruta* (Koshi 1983: 51–52). His glimpse of their short-lived enjoyment gave him an opportunity to understand their feelings and therefore to "re-humanize" them. This reminds us of a famous war novel by Ooka Shohei (1909–1988), *Furyoki* (*Taken Captive*), set in the Philippines and published in 1948. The main character cannot bring himself to shoot a young American soldier who is approaching him unaware that he is hiding close by in the jungle. The author analyzes the protagonist's reasons for not pulling the trigger, stating that he was touched by the soldier's ruddy complexion and fresh, youthful looks, rather than being motivated by love for human beings (Ooka 1994: 19–27). A glance at the soldier's face – part of his unique individuality – made a critical difference to the protagonist's fateful decision.

However, this compassionate inner voice is rarely heard in the postwar reminiscence literature of the medical atrocities. The majority of the perpetrators chose to turn a blind eye to the suffering faces of their victims. In pushing aside their victims' humanity, these "well-educated" professionals (professors, doctors, researchers, technicians, medical assistants, and so on) were also forsaking their own humanity and occupational ethics. This "double immorality" is a leading characteristic of the wartime medical atrocities.

Nevertheless, after the war, the ability to regret one's actions and to be critical of the past was restored to some individuals. According to one Unit 731 operative:

> Those military surgeons had a hunger for vivisection. . . . After most of the internal organs had been removed, the body looked like a dark and empty sack. Of course the heart was still beating. . . . The surgeon then looked just like a demon. . . . Although I was someone who read a lot of literature and had relatively liberal ideas at that time, I had no desire to stop the vivisection, even though I felt a bit sorry for the *maruta*.
>
> (Koshi 1983: 117–122)

One military surgeon, who worked in Shanxin, China, during the War and practiced vivisection on at least 14 victims, was captured by the Chinese Army. In prison camp, he was asked to read a letter from a woman whose son was killed by him for medical purposes.

> For the first time I felt an unspeakable sense of guilt . . . I had deprived her of her son . . . I used to think that everything I did was for the war effort, but now I believe that even the death penalty is not sufficient enough for me. . . . How much pain the Chinese must have suffered. How sad their families must have felt!
>
> (Nishizato 2002: 160; Yoshikai and Yuasa 1981, 1996: 92, 253)

Such a sense of guilt meant that some perpetrators were unable to continue their "medical research" after the War. Although Akimoto Sueo, the author of *Yi no rinri o tou* [*Questioning Medical Ethics*], who joined the Ishii network in 1944, did not participate directly in human experimentation, he later regretted being part of the network and decided not to resume his post at the University of Tokyo as a medical researcher after the War. Rather, he sought to atone for his actions by working as a doctor in a local health center to help improve public health (Tsuneishi 1994: 19–20). Akimoto stated that he would regret his part in the atrocities until his death (Williams and Wallace 1989, 2003: 271).

Others were so burdened by their guilt that the prospect of living a normal life after the War was unbearable. One medical scientist, Okamoto Kei, from the Epidemic Research Institute of Tokyo Imperial University, left a brief but revealing suicide note: "I know my crime" (*Ware wagatsumi o shiru*) (Nishizato 2002: 175; Shibata 1998: 212; Tsuneishi and Asano 1982). Another perpetrator, Karasawa Tomio, who was sentenced to 20 years' imprisonment at the Khabarovsk Trial, hung himself in a laundry room shortly before he was due to be repatriated to Japan in 1956 (Aoki 2005: 372).

This kind of regret and guilt, experienced at the individual level, may be seen as genuinely redemptive because it does not originate from an order of the state or the government, but rather in the individual's soul. The people discussed above eventually managed to escape from the collective mentality which surrounded them, and began to think, feel, and act as individuals.

According to Ishii Harumi, the daughter of Ishii Shiro, shortly before his death from cancer of the pharynx in 1959 Ishii was baptized by a Roman Catholic priest, Hermann Heuvers, who was teaching at Sophia University in Tokyo, and received

a Christian name, "Joseph." Although when she was interviewed Harumi failed to explain why her father had decided to become a Christian, she continued to state that her father seemed to be "relieved" following his baptism (Williams and Wallace 1989, 2003: 279). Although Ishii's baptism has never been confirmed by any documentary evidence (Aoki 2005: 374), his desire for baptism suggests that he felt guilty for his wartime medical atrocities and was searching for forgiveness. It would be interesting to know how his sense of guilt came to be formed, if such was indeed the case.

The necessity for human experimentation?

The "advancement of medical science" was repeatedly used as a justification for experiments on living human subjects. As we have seen, one military surgeon emphasized the medical gains to be made from human experimentation (Ishida 1982: 47). However, this justification has been questioned by other participants and scholars.

One Unit 731 member did not believe that the experiments could be scientifically justified. He said,

> When I thought about what was being done in Unit 731, I realized there was no research that had to be conducted through human experiments. All those experiments could have been done on animal subjects. In fact, the sole purpose served by the "experiments" carried out by Unit 731 was human slaughter.
>
> (Gunji 1982b: 233)

Another Unit 731 operative stated:

> Military doctors were using their prerogative to perform vivisection. They lacked self-reflection. They were only motivated by curiosity. . . . In reality, the structure of the body can be easily determined from medical textbooks rather than by cutting open a living body. And the organs that were supposed to be observed could be destroyed when making incisions.
>
> (Akimoto 1983: 129–139, 146)

The futility of human vivisection and the real motivation behind it are reinforced by further examples. In the northern part of Shanxi province, one military doctor specializing in internal medicine ordered his subordinates to vivisect a Chinese farmer "in order to determine the position and shape of his appendix." When he failed to locate it, he shot the farmer with his pistol (Hoshi 2002: 32). One medical researcher criticized the Kyushu atrocities in similar terms: "The vivisection at Kyushu Imperial University was done so poorly and carelessly that there was nothing to be documented at all. No record remained. The vivisection was nothing more than wholesale slaughter" (Kawakami 1965: 488).

Tsuneishi Keiichi, a distinguished scholar of the history of science and a contributor to this volume, sees no merit in human experiments.

> Superficially, there appeared to have been some progress made in research because so much had been invested in military medicine. But in wartime, so much was sacrificed and wasted. A comparable level of progress could have been easily achieved in peacetime through reasonable resource allocation and animal experiments.
>
> (Tsuneishi 1998: 214)

Tsuneishi also points out that the Japanese program was marred by flaws in the scientific methods adopted:

> Scientifically, the experimental results only show the differences between individual victims and lack statistical validity because the number of subjects was limited. Their findings from various experiments produced only a rough outline of the physical conditions experienced by individuals. The data produced by the Ishii network lack scientific value. . . . Besides, their experiments involving dry blood plasma for transfusion, water purifying machines, penicillin, BCG vaccine, plague vaccine, typhus vaccine, cholera vaccine and tetanus serum were redundant, as these products were already being utilized overseas.
>
> (Tsuneishi 1995: 179–180, 198)

Tsuneishi also states that the treatment for frostbite devised by Yoshimura Hisato through human experimentation was already practiced by Russian doctors in the nineteenth century (Tsuneishi 1994: 290). He further indicates that the pursuit of "scientific" results in the absence of any human feeling produces only a sense of "self-satisfaction" in scientific researchers which, if taken to an extreme, will end up destroying the world (Tsuneishi 2002: 82).

Tsuneishi's comments make it clear that these experiments served only to enhance the reputations of some medical researchers by increasing their research output and promoting them to the top echelons of the medical establishment. However, we must be cautious about arguing whether the experiments were "useful" or "necessary," because if some results can be categorized in this way, the door leading to the justification of inhuman experiments is open once again. The vital point is that an unconditional value should be placed on human life, leaving no room to condone any inhuman experimentation undertaken for any reason whatsoever.

Individual responsibility

The medical atrocities conducted by the Ishii network certainly raise questions as to who should bear responsibility and who should be punished. A Unit 731 member, who was sentenced to ten years' imprisonment at the Khabarovsk Trial, told the court: "I hope that those who are guilty of preparing to conduct bacteriological warfare and bear most responsibility for these preparations, namely, the Japanese Emperor Hirohito, Lieutenant General Ishii and Major

General Wakamatsu, will be severely punished" (Foreign Languages Publishing House 1950: 519). However, those on the lower rungs of the military ladder, who actually carried out the atrocities, must bear responsibility too, as they are the people who perfected the "art" of slaughtering human beings with their medical knowledge, abilities, curiosity, ambition, cruelty, eagerness, and creativity, often going far beyond their leaders' expectations. Without their efforts, no order could have been executed. Thus, the sins of the Emperor and the failure of national policy cannot be used to exonerate individual perpetrators from responsibility. Noda Masaaki records that, after the war, one soldier realized while in a Chinese prison that each individual must question his own responsibility for his actions before blaming his superiors (Noda 1998: 164).

As the Japanese novelist Morimura Seiichi, author of *Akuma no hoshoku* (*Devils' Gluttony*) on Unit 731, poignantly asks:

> Were those countless experiments really conducted as a result of a "collective madness"? Didn't we see the careful calculation of individuals and the spirit of exploration exhibited by medical researchers at work in those experiments? Were not those experiments actually performed for their own sake rather than for the "nation"? These questions were answered by the fact that, after the war, these experimental results were all used for the benefit of the researchers involved. The atrocities were conducted by individuals under the cloak of the "nation". That explains why they did not want to confess anything that might be disadvantageous to themselves, why they tried to hide or mitigate their crimes, and showed absolutely no regret.
>
> (Morimura 1985, 2004: 251–252)

Morimura rightly points out the culpability of each individual involved. The sad reality is that so few of the perpetrators came to regret their crimes, continually protecting themselves by recourse to one excuse after another – from the "Emperor's command," "national policy," and "orders from above" to "scientific research".

Although it was not easy for those involved to disobey orders, it was not impossible to do so, as we have already seen. One participant in the Kyushu Imperial University atrocities stated:

> No matter what kind of situation we were faced with, as long as we insisted, we could have prevented the atrocities from happening. . . . Compared with those who were arrested by the police for their anti-war activities, it would have been much easier for us to refuse to participate in the vivisection experiments. We cannot say that we did not have a choice.
>
> (Kamisaka 1979: 255)

Although such a voice is rare, it is witness to the real possibility of choice possessed by each individual. It was not because the participants did not *have* a choice, but rather because they did not try to *make* a choice. In the situation they

faced, it must have been much safer to obey orders – and much easier to cast aside humanity and morality rather than reject unethical behavior.

It is an alarming fact that only a handful of perpetrators have ever expressed their guilt. Of course, some regrets may have been very private and will never be made public for fear of the embarrassment associated with disclosing a shameful past. It is ironic that, in order to hear a perpetrator's real voice, we have to turn to fiction, and to two works in particular, *The Sea and Poison* and *Song of Sadness*, by Japanese novelist Endo Shusaku (1923–1996), both of which are based on the Kyushu Imperial University atrocities.

The protagonist of *Umi to dokuyaku* [*The Sea and Poison*] (Endo 1971), Suguro, is given the option of declining his boss's invitation to participate in the vivisection. However, because he is tired of the war chaos, has no hope for peace, and has become indifferent to most events around him, he passively accepts the offer (pp. 122–124). Still, as the procedure is about to begin, he is desperate to get away, but the loud laughter of the military officers present "sounded like a thick wall and blocked his escape" (p. 130). He remains in the operating room, leaning motionlessly against the wall for most of the time (pp. 137, 143). Although not an active participant, he becomes the sole observer of the whole process of the vivisection of two American soldiers. Hearing one of them groan, he suddenly feels a sense of "powerlessness" and "humiliation." Although telling himself, "I did not do anything . . .", Suguro still hears a rhythmic voice in his ears, repeating the refrain "killed, killed, killed" (p. 147). Leaving the operating room, he descends the stairs listening to the sound of his own steps. "Two hours ago, the American soldiers also walked up these stairs without knowing what would befall them," he muses. "The good-natured face of the prisoner with chestnut hair will probably soon vanish from the surgeons' minds. But it can't disappear from my mind. I can't forget" (pp. 147–148).

Suguro's colleague Toda, who had actively participated in the vivisection, tells him: "As a result of the deaths of these prisoners, we know how to treat thousands of patients with tuberculosis. We did not kill him. We revived him. Conscience can change depending on which perspective you take." Toda continues: "I don't think those who are going to punish us would be any different if they were put in the same situation." Toda represents the attitudes of real perpetrators who try to justify whatever atrocities they have committed, but Suguro is not convinced by Toda's arguments. By telling himself "I can't forget," he has already chosen a lasting moral punishment for himself.

The Sea and Poison was adapted for the cinema in 1986 in a black-and-white feature film with the same title by director Kumai Kei. It was awarded the top prize for a Japanese film by film magazine *Kinema Junpo* and won the Silver Bear award at the 37th Berlin International Film Festival in 1987. The director interprets the "sea" in the novel as a "symbol" of the spirit and way of life of the Japanese people who "are not looking for anything supremely meaningful, but are happy to live in the world of the gods by following a conformist path" (Kumai 1987: 294). Endo later states that he wrote the novel because he wanted to show the weakness of human beings, since he himself probably would not have had the strength to

maintain his belief in justice either under such circumstances (Endo 1998: 138). Nevertheless, he does not get bogged down in lamenting human weakness but rather seeks to create a character who possesses the ability for self-reflection.

The same character appeared in a further novel, *Kanashimi no uta* (*Song of Sadness*), twenty years later, in 1978. Following an abortion operation, Suguro recalls what had happened 30 years early in another operating theatre. "That time, the long corridor was deadly quiet, too, and the windows of the hospital corridor were veiled in darkness when he left the operating room, just like today. Since that evening, everything in his life has changed. Meanwhile, something that would never change was being born inside him" (Endo 1981, 2003: 58). This immutable "something" may be interpreted as his newly shaped sense of morality. In this novel, Suguro is constantly criticized by the people surrounding him. The journalist who relentlessly questions him, however, is described as a character who himself is lacking in self-reflection. This narrative technique makes it hard for readers to believe that the journalist would act any differently if placed in the same situation. Tortured by his growing sense of guilt and social pressures, Suguro eventually chooses to commit suicide. His death symbolizes the ultimate punishment – one which he imposes on himself. These two novels reveal the depth of the protagonist's soul, which is full of regret, guilt, and self-loathing because of his attendence at the vivisection.

Through the character of Suguro, Endo depicts a double movement of the psyche – on the one hand describing an individual's difficulty in maintaining a consistent moral standard, and, on the other, depicting his newly regained sense of morality through a constant recalling of the past and undergoing self-reflection. Through these two novels, Endo sheds some light on Japan's medical establishment, which has still not recovered from a catastrophic loss of humanity. Meanwhile, Endo also attempts to fill a gap in modern Japanese literature which, he believes, has never made the effort to probe deeply into the human soul (Endo 2000: 54). This lack of personal introspection is unlikely to be a purely literary phenomenon, but is a psychological reality in Japan and other countries. Although Suguro is a fictional character, the process of his psychological development reveals a possibility of redemption for individuals through self-reflection and restoration of morality. This is a significant means by which an individual can take responsibility for his or her actions.

Conclusion

According to Tsuneishi, "Ishii's network was not something that happened in the past, but rather it still exists in the present medical establishment in Japan. If we fail to reveal the atrocities of the past, similar atrocities can be easily repeated" (Tsuneishi 1994: 292). Moreover, I would add that the kind of "atrocity" Tsuneishi has in mind is universal, not unique to a particular nation, a particular race, or a particular time. When we study medical atrocities, we cannot be satisfied with blaming the culprits and external causes. All people, including those from victimized countries, need to examine the state of their own morality. "What would

I do if I were put in a similar situation?" "Would I refuse to participate in such atrocities?" "Would I be brave enough to refuse to obey orders?" If our answers are equivocal, then we know that the seeds of similar crimes lie in our minds too.

It is important to realize that the cycle of collective violence can be broken by the moral courage and humanity of individuals. If an individual can imagine and identify with other people's suffering, and sustain his or her moral beliefs in the face of it, then it is possible that unethical instructions can be rejected or ignored, or at least evaded. Numerous examples of individuals saving Jews from Nazi orders for their destruction have already shown that the fundamental humanity within each person can help prevent atrocities (Glover 2001: 381–393). That is why we need to learn from the attitudes of those who regard a human life as the most precious thing.

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