

GOOD AFTERNOON !



The Good

The Bad

The Ugly

In the History of Medicine

2

OLLI Spring 2020 Semester

January 28 to March 17

Néstor A. Ramírez, MD, MPH, FAAP



SESSION 6 MARCH 3, 2020

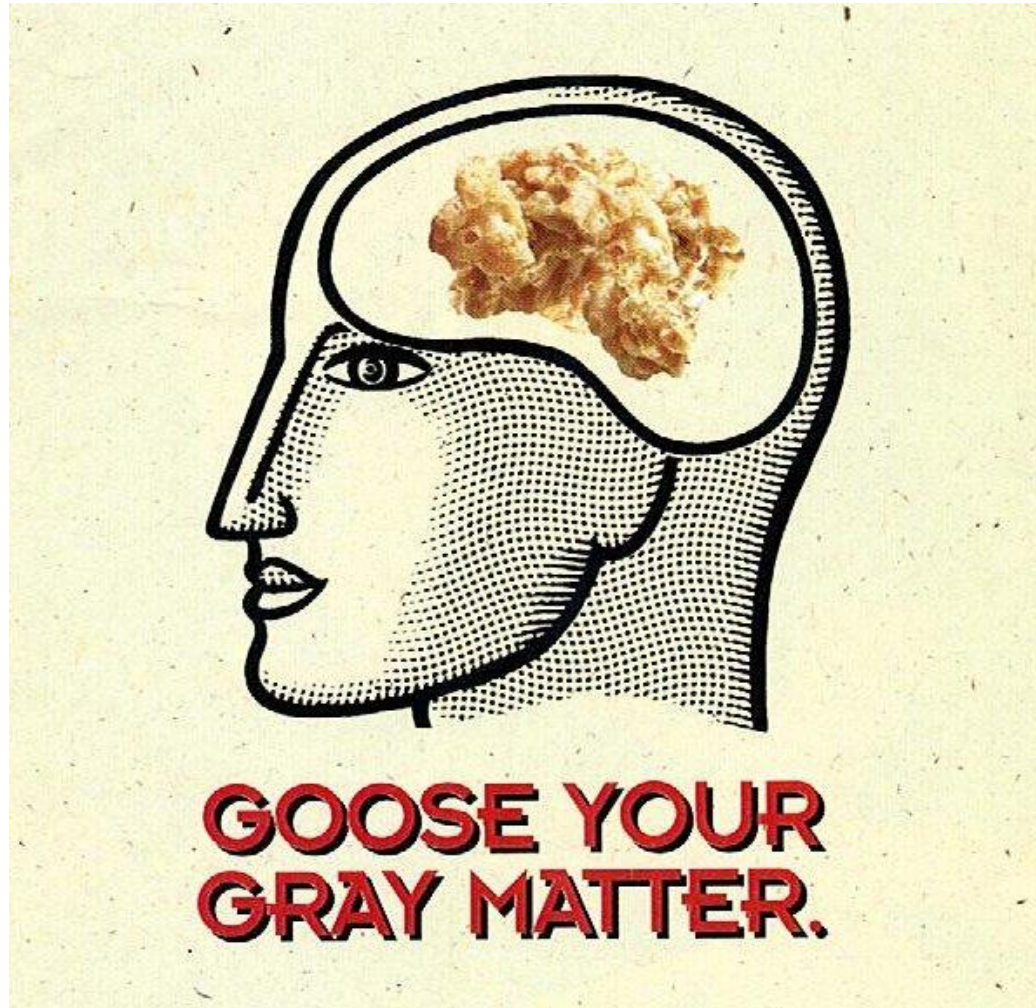
Human Experimentation

3

SESSION 6 OBJECTIVES

- Unearth the many instances of unethical medical experimentation on human beings.
- Reveal the many instances of cruel acts done in the name of science, in peacetime and war.
- Show that lack of appropriate informed consent still exists in modern research on human beings.
- Expose how unethical behavior is rationalized.

THE MAIN OBJECTIVE ?

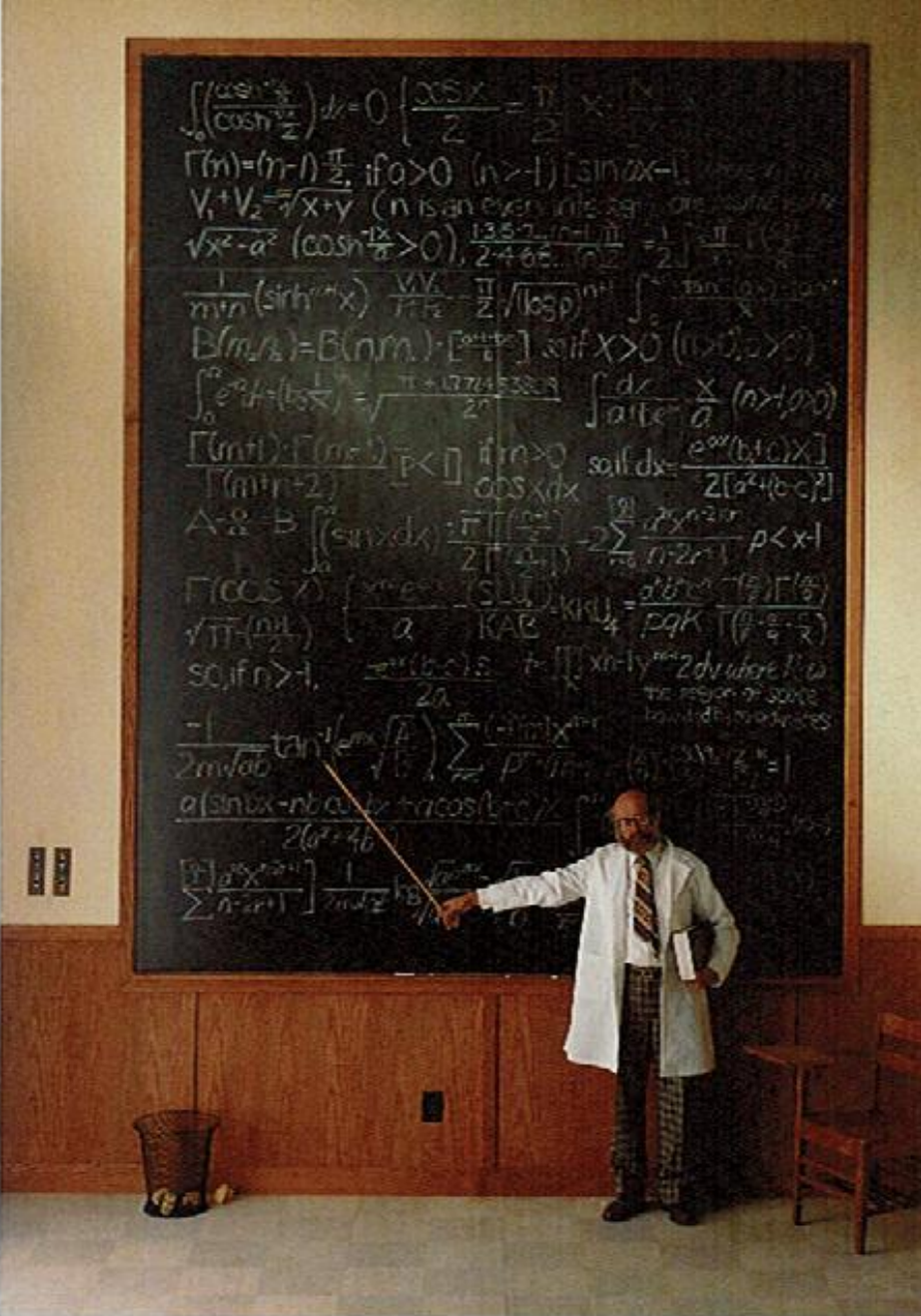


“No Physician is justified in placing science or the public welfare *first* and his obligation to the individual who is his patient or subject, *second*.”

No doctor, however great his capacity or original his ideas, has the right to choose martyrs for science or for the common good.”

Maurice H. Pappworth, 1967

6



I'll try to keep it simple!

OLDER EXPERIMENTATION

- Pasteur injected children with rabies vaccine.
- Koch injected prisoners with *tuberculin* for TB.
- Neisser injected prostitutes with siphyllis.
- Lind gave sick sailors citrus fruits for scurvy.
- Walter Reed gave yellow fever to soldiers.
- Salk injected children with polio virus.

THE 1950'S

- NY Psychiatric Institute and Army Chemical Corps use of mescaline for depression: 1 death.
- MKULTRA: Use of biologic and chemical substances for espionage and sabotage, 1 death.
- UK experiment with liquid *sarin*, 1 death.
- All had involvement of the Tripartite Conference (US, UK, Canada).

RECENT EXPERIMENTATION

- MIT, Quaker and AEC did plutonium-labeled studies on children's cereals in the Fernald Institute.
- East German state-sponsored research on steroids to enhance athletes' (including children's) performance.
- Pentagon: SHAD experiments on sailors.
- Vaccination of Soldiers in Desert Storm

FAULTS IN HUMAN EXPERIMENTATION

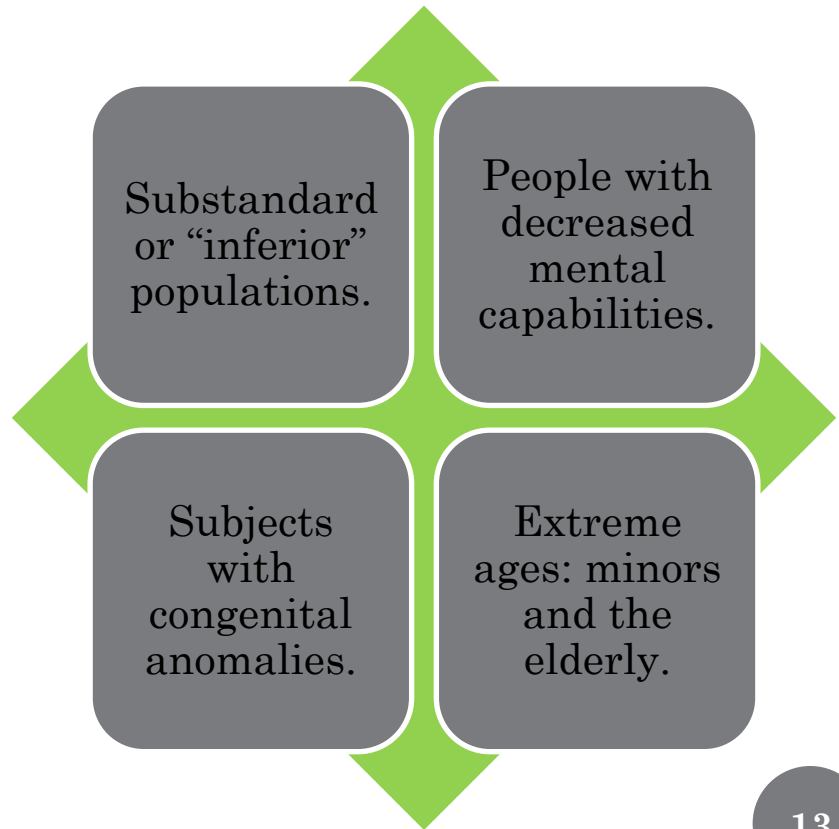
- Lack of true informed consent.
- Research done “in the name of science”.
- No scientific publication or analysis.
- Deception, lies and misinformation.
- Secrecy of the process.
- Unwilling or coerced subjects.

WHY DOCTORS GET INVOLVED

- Failed, impaired or flawed ethics
- Rationalization of benefit
 - Potential life-saving knowledge
 - Prevention of illness
- Scholarly and Academic silence
 - Active approval
 - Passive acquiescence
 - Self-interest and professional rivalry
 - “Publish or Perish”
- Political or governmental pressure

FAULTS IN HUMAN EXPERIMENTATION

Use of special classes of subjects:



WHY DO COUNTRIES DO HUMAN EXPERIMENTATION?

- Commercial and/or Industrial interests.
- Racial or ethnic delusions?
- Politically driven motivation.
- National security and international supremacy.



SOME “BADS”

Research done *In the name of Science*

In the Name Of Research

THREE IDENTICAL STRANGERS
Identical brothers
separated at birth
were studied, but
truth was hidden

By Stephanie Saul

STAFF WRITER

It seemed almost a miracle — three young men, strangers who had grown up in separate families, discovering by accident that they were identical triplets.

The public devoured their inspiring story as it made headlines around the country in 1980. The trio, who had grown up in the New York area, appeared on Good Morning America, Today, Donahue and Geraldo Rivera. A movie of their lives was in the works.

But for all the intense media coverage, a side of this seemingly happy story has remained untold for 17 years, a secret about their childhood that stunned the triplets, Eddy Galland of New Hyde Park, David Kellman of Howard Beach and Robert Shafran of Scarsdale.

For when they found one another at age 19, they also realized that they had been part of a human experiment — apparently funded partly by the National Institute of Mental Health. For



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A **CNN** FILMS PODCAST

THREE IDENTICAL STRANGERS

THE SCIENCE BEHIND THE STORY
WITH DR. SANJAY GUPTA



03/03/2020

©NAR OLLI at University of Illinois

THREE IDENTICAL STRANGERS (1)

- Quadruplets, one died shortly after being born.
- Surviving triplets were separated at birth.
- Born July 1961, at hospital in Glen Oaks, NY.
- Mother was a single teen-age girl.

THREE IDENTICAL STRANGERS (2)

- Louise Wise Services, ritzy adoption agency in NYC handled the adoptions at 6 months of age.
- Families with differences and similarities:
 - One affluent family of MD and lawyer.
 - One middle class family of schoolteacher and housewife.
 - One family of immigrant blue collar worker parents.
 - All had adopted a daughter 2 years prior (same agency).
 - They all lived within 30 miles of each other.
- Parents never told there were three brothers.

THREE IDENTICAL STRANGERS (3)



Edward (Eddy) Galland, David Kellman and Robert (Bobby) Shafran

Reunited by chance in 1980

20

THREE IDENTICAL STRANGERS (4)

Co-investigators Dr. Peter B. Neubauer and Viola Bernard never informed parents about the other boys.

Parents told it was a *standard* study for Neubauer's Child Development Center on adoptive children and their parents.

Boys' behaviors were charted, personalities monitored and relationships with their adoptive parents closely scrutinized.

They were photographed, videotaped, questioned, and given tests and tasks to perform until age 12.

THREE IDENTICAL STRANGERS (5)

- Unethical, secretive and undisclosed study of “Nature vs. Nurture” on child development.
- Six pairs of twins were also “studied”.
- Results never published, supposed to be kept locked by Yale University until 2066 !!
- Recently, partial documents and videos were released.

***Full informed consent never obtained
or even attempted!***

THREE IDENTICAL STRANGERS (6)

All three had mental health issues.

Kellman and Galland had been in and out of psychiatric hospitals by college age.

Mother had also had some mental health issues.

They met briefly with her once, in the early 80's.

None of them desired future contact.

Edward Galland killed himself in 1995.

Peter Neubauer died in 2008.

UNANSWERED QUESTIONS

Nature more important than nurture?

Mental illness caused by separation anxiety?

Was experiment justified in any way?

Should parents/boys have known about the other boys?

Ethics of study's rationale?

Secrecy justified after study revealed?

And what about informed consent?

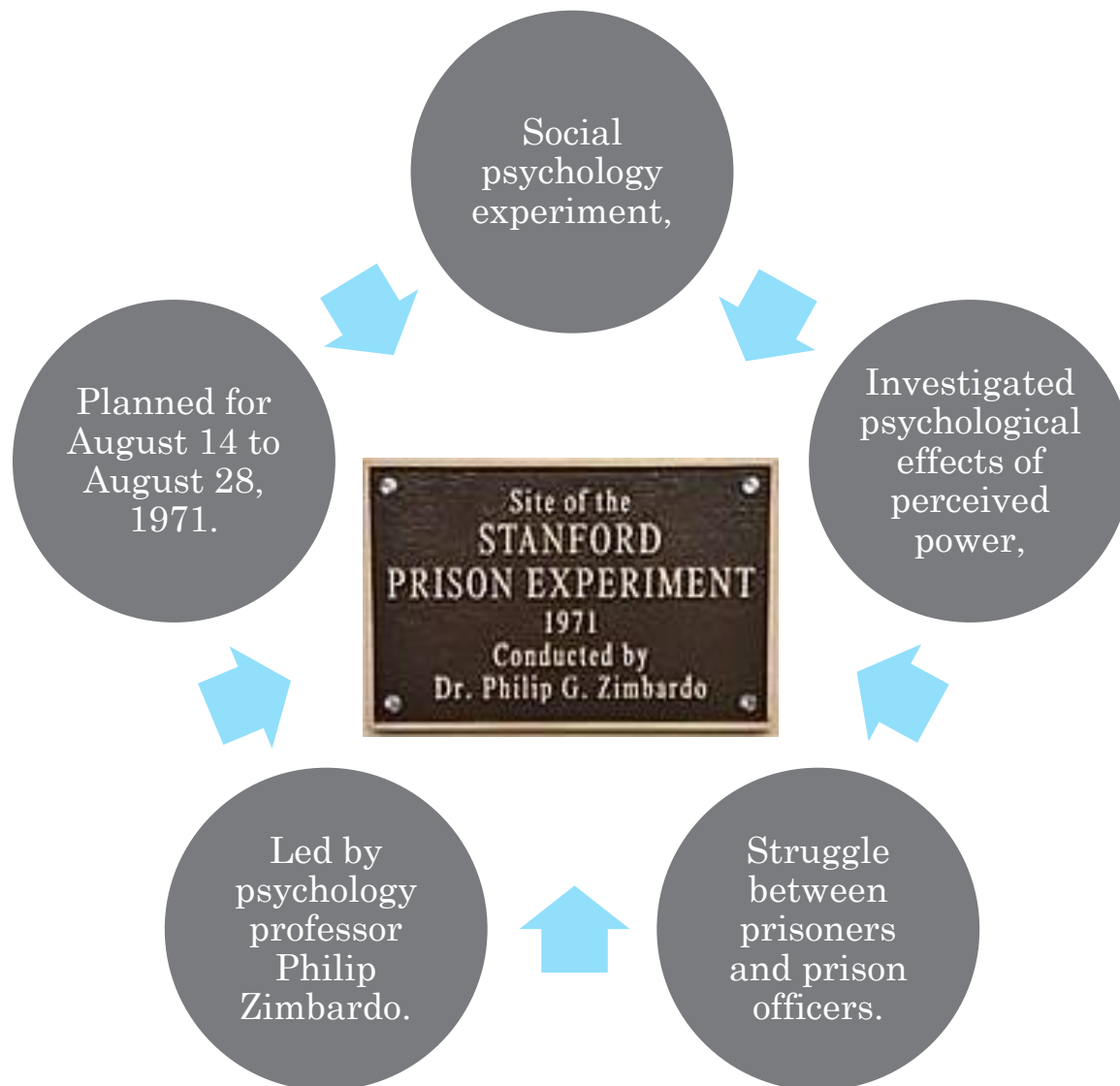


STANFORD PRISON EXPERIMENT

1971

25

STANFORD PRISON EXPERIMENT (SPE) (1)



STANFORD PRISON EXPERIMENT (SPE) (2)

Male college students needed for psychological study of prison life. \$15 per day for 1-2 weeks beginning Aug. 14. For further information & applications, come to Room 248, Jordan Hall, Stanford U.

Subjects were college students paid \$15/day.

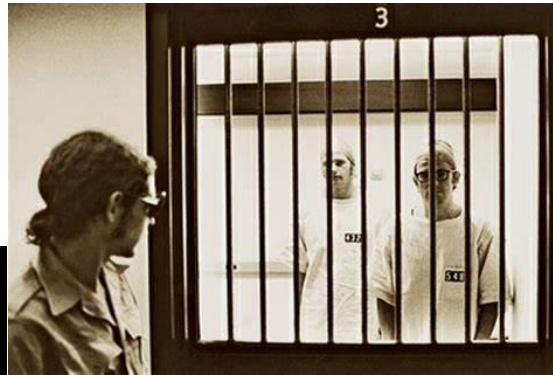
9 “guards” and 9 “prisoners”, Zimbardo was warden

3 prisoners per cell, cots and waste bucket in each.

Guards with batons uniforms, and mirrored sunglasses.

“Prison” had bars, no windows, and a solitary cell,

Stanford Prison Experiment (1971)



ABU GHRAIB (2003)



STANFORD PRISON EXPERIMENT (SPE) (3)

- Experiment was designed to induce:

- Disorientation
- Depersonalization
- Deindividuation



in the participants

- Palo Alto police “arrested” the students in their home.
- Study stopped after only 6 days.
- The U.S. Office of Naval Research funded it to investigate the causes of difficulties between guards and prisoners in the USN and USMC.

STANFORD PRISON EXPERIMENT (SPE) (4)

- Guards emotionally, physically and mentally humiliated the prisoners, showed sadistic tendencies.
- One prisoner had a nervous breakdown, others were emotionally traumatized and 3 of them had to be removed from the experiment early.
- Zimbardo concluded that prisoners and guards had become very deeply absorbed in their roles.
- He also became so deeply absorbed in his role that he terminated the experiment after only 6 days.

THE MILGRAM EXPERIMENT

32

THE MILGRAM EXPERIMENT (1)

Public Announcement

**WE WILL PAY YOU \$4.00 FOR
ONE HOUR OF YOUR TIME**

Persons Needed for a Study of Memory

*We will pay five hundred New Haven men to help us complete a scientific study of memory and learning. The study is being done at Yale University.

*Each person who participates will be paid \$4.00 (plus 50c carfare) for approximately 1 hour's time. We need you for only one hour; there are no further obligations. You may choose the time you would like to come (evenings, weekdays, or weekends).

***No special training, education, or experience is needed. We want:**

Factory workers	Businessmen	Construction workers
City employees	Clerks	Salespeople
Laborers	Professional people	White-collar workers
Barbers	Telephone workers	Others

All persons must be between the ages of 20 and 50. High school and college students cannot be used.

*If you meet these qualifications, fill out the coupon below and mail it now to Professor Stanley Milgram, Department of Psychology, Yale University, New Haven. You will be notified later of the specific time and place of the study. We reserve the right to decline any application.

*You will be paid \$4.00 (plus 50c carfare) as soon as you arrive at the laboratory.

TO:
 PROF. STANLEY MILGRAM, DEPARTMENT OF PSYCHOLOGY,
 YALE UNIVERSITY, NEW HAVEN, CONN. I want to take part in
 this study of memory and learning. I am between the ages of 20 and
 50. I will be paid \$4.00 (plus 50c carfare) if I participate.

NAME (Please Print)

ADDRESS

TELEPHONE NO. Best time to call you

AGE OCCUPATION SEX

CAN YOU COME:

WEEKDAYS EVENINGS WEEKENDS

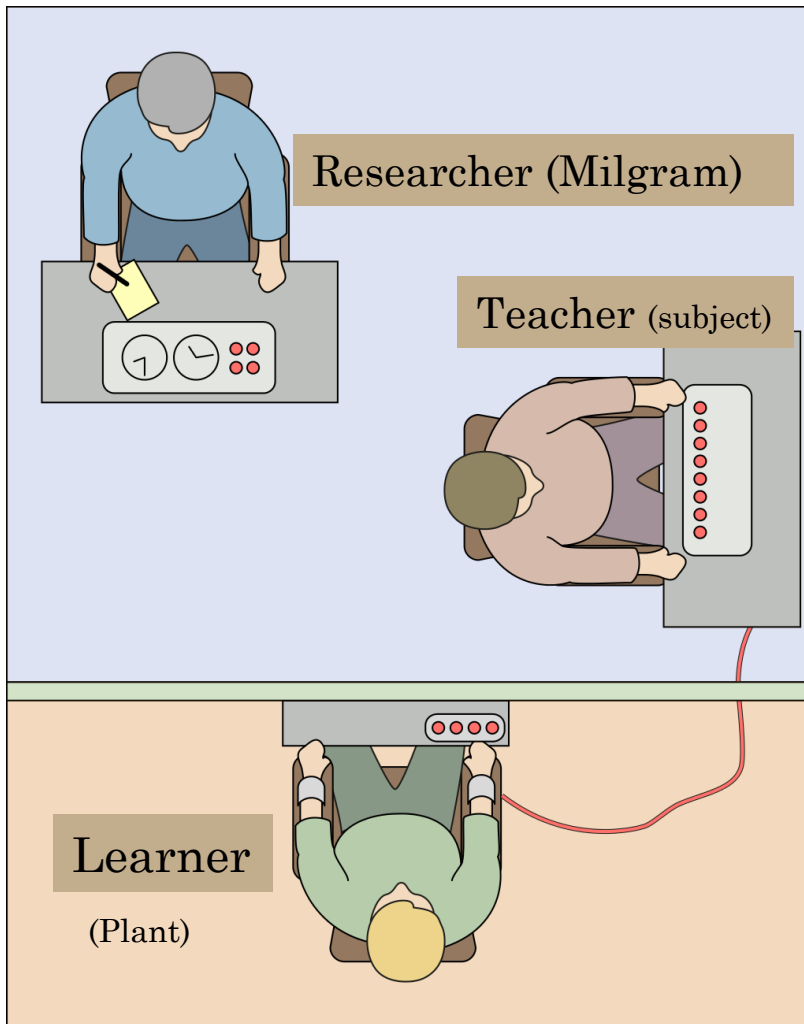
THE MILGRAM EXPERIMENT (2)

- Yale University psychologist Stanley Milgram, 1961
- Studied obedience to authority figures.
- Would subjects obey and perform acts conflicting with their conscience?
- Subjects told they were assisting another experiment.
- Subjects had to administer electric shocks to a "learner".
- Shocks increased to levels that would have been fatal if real.

THE MILMAN EXPERIMENT (3)

- Supposedly wanted to know the effect of punishment on a learner's ability to memorize content.
- Cards were drawn to choose role (Teacher or Learner).
- All cards read “*Teacher*”; plant said he got “*Learner*”.
- Teacher (subject) and learner (plant) separated by a wall.

THE MILGRAM EXPERIMENT (4)



Teacher read 10 word pairs to learner.

1st word of pair and 4 options read.

Learner chose one of the options.

If correct, would go to next word.

If wrong, electric shock given.

Any wrong answer increased 15 V.

Maximum level 450 volts.

THE MILMAN EXPERIMENT (5)

- Subject “Teacher” heard *recorded* sounds of pain or discomfort through the wall upon giving shocks.
- As shock level increased, learner would bang wall or yell to reinforce realism of the effect.
- If max reached, learner became silent.
- Investigator prodded teacher to continue regardless.

THE MILGRAM EXPERIMENT (6)

- Incomplete and misleading consent.
- False information given to subjects.
- Unethical behavior of researchers.
- Subjects would act against their conscience.
- Deep purpose was to try to explain obedience to authority during Nazi times in Germany.

THE MILGRAM EXPERIMENT (7)

- Main unexplained finding is the extreme willingness of adults to go to almost any length to obey the commands of an authority.
- Relatively few people can resist authority when asked to perform actions incompatible with fundamental standards of their morality.
- Ordinary people can become involuntary agents in a terrible process.



HOLMESBURG PRISON

40

HOLMESBURG PRISON EXPERIMENTS (1)

- Pennsylvania/Philadelphia prison now closed.
- Dermatological, pharmaceutical, and biochemical weapons research projects between 1950-1974.
- Subjects tested were prison inmates.
- Minimal consent obtained.
- Monetary rewards offered to prisoners.

DR. ALBERT M. KLIGMAN (1916-2010)

- A botanist, specialized in fungi, later a dermatologist.
- Wrote many papers on skin conditions such as athlete's foot and dandruff.
- Developed *tretinoin* as treatment for acne and wrinkles.
- *Tretinoin (Retin-A)*, earned Kligman significant royalties.
- By 1998, he had donated over \$4 million to the Dept. of dermatology at the University of Pennsylvania.

Holmesburg Prison



- When Kligman first entered Holmesburg Prison, he said: "All I saw before me were acres of skin. It was like a farmer seeing a fertile field for the first time."
- He viewed the prison as a human laboratory. It was an "idle collection of humanity that seemed ideal for dermatologic study,"

HOLMESBURG PRISON EXPERIMENTS (2)

- Kligman did experiments on prisoners for drug companies and government agencies (254 chemical compounds).
- Between 1951 and 1974, 75 prisoners were exposed to high doses of *dioxin*, the toxic substance in *Agent Orange*.
- Safety of subjects was of little concern.
- Prisoners intentionally exposed to infections, including herpes, staphylococcus and Hong Kong flu.
- Kligman's work for the government extended to testing for the DOD, CIA, and the US Army.

HOLMESBURG PRISON EXPERIMENTS (3)

- Experiments with exposure to microwave radiation.
- Exposure to sulfuric and carbonic acids, which corroded and blistered skin in arms, back and testicular areas.
- Prisoners made to exert physically and then had sweat glands cut out for examination.
- Fragments of cadavers stitched into the backs of inmates to see if they could grow as live tissues.

HOLMESBURG PRISON EXPERIMENTS (4)

All inmates had consented to the experiments, seduced by large monetary compensation.

Experiments often paid around \$30 to \$50 and even as much as \$800, depending on the company.

Holmesburg experiments paid extraordinary amounts compared to other prison jobs.

About 85% of 1,200 prisoners were experimented on.

In Philadelphia's prisons, inmates were able to end their sentence if they could pay for 10 % of their bail.

In such a system, participating in experiments was an easy means to earn the money for freedom.

HOLMESBURG PRISON EXPERIMENTS (5)

- U. of Pennsylvania knew of and condoned the studies.
- There was no contract between prison/city and U of P.
- **US shut down prison experimentation in 1974 to comply with the Nuremberg Code of 1947.**
- Example of profit and the promise of possible scientific advances overshadowing ethical issues.

Walls in prison institutions truly don't just keep inmates in, they also keep public eyes out.

HOLMESBURG PRISON EXPERIMENTS (6)

- Lawsuits ensued after trials made public.
- Prisoners were treated as human guinea pigs.
- Many sequelae of scarring, pain, disfigurement.
- At least 10 Pennsylvania prisons and 30 others nationwide participated in prison studies.
- Ethical issues still not totally resolved.



THE TUSKEGEE SYPHILLIS EXPERIMENT

The Shame, the Lies, the Pain, the Injustice

49

TUSKEGEE ⁽¹⁾

- The Tuskegee Syphilis Study was started in the hopes that a deeper understanding of syphilis would provide new insights on potential treatments.
- This could possibly justify a government-funded treatment program.
- Despite the noble beginnings and lofty goals, a lack of funds and a **shortage of ethics** led to possibly the most shameful clinical mishaps in US history.
- Callous unfairness, dishonesty and cruelty towards an ethnic group were the end result.

TUSKEGEE (2)

Study of “untreated syphilis
in the male Negro”.

600 impoverished African-
American sharecroppers.

Macon County, Alabama.

6-month experiment that
lasted 40 years (1932–72).

Sponsored by United States
Public Health Service.

Collaboration with Tuskegee
Institute (University).

TUSKEGEE (3)

- Men were told they would receive:
 - Free physical examinations at Tuskegee Institute.
 - Free rides to and from the clinic.
 - Hot meals on examination days.
 - Free treatment for minor ailments.
 - Funeral expenses.(\$50) if autopsy agreed to.
- All of this courtesy of US government!
- They were told that the study was only going to last six months, but it actually lasted 40 years.
- They were told that they were being treated for “bad blood”, given pills, Salvarsan, bismuth, and mercury ointments (all ineffective and very toxic).

TUSKEGEE (4)

- 107 total men died of untreated syphilis, 40 wives contracted the disease, and 19 babies were born with congenital syphilis.
- Penicillin was known to be the cure for syphilis since 1943, but the men were not given treatment.
- John R. Heller Jr. of PHS defended the study, saying:

"The longer the study, the better the ultimate information we would derive. The men's status did not warrant ethical debate. They were subjects, not patients; clinical material, not sick people."

TUSKEGEE (5)

- In 1944, the antibiotic *penicillin*, was deemed a safe and effective cure for syphilis, and the US government sponsored a nationwide program to eradicate the disease.
- The researchers at Tuskegee, to preserve the fruits of their labors, **kept the cure a secret** from their subjects.
- They supplied local doctors with lists of the participants, and instructed the physicians NOT to provide penicillin lest they interfere with a government health study.

TUSKEGEE ⁽⁶⁾

- The administrators of the experiment were not interested in saving the lives of the black farmers.
- They were interested only in dissecting them on an autopsy table.
- As one of the doctors stated, “We have no further interest in these patients until they die.”

TUSKEGEE (7)

- In 1966, CDC, reaffirmed the need to continue the study until all subjects had died and been autopsied.
- Autopsy was mandatory to receive funeral benefits.
- CDC received full support for continuing the study from local chapters of the NMA and the AMA.
- Example of profit and the promise of possible scientific advances overshadowing ethical issues.
- After penicillin available, patients were lied to, given sham harmful medicines, and still not treated.
- Spinal taps done under the guise of “Special Free treatment”(the Golden Needle).



TUSKEGEE (5)

- On May 16, 1997, Bill Clinton formally apologized, held a ceremony at the White House for surviving Tuskegee study participants and said:

“What was done cannot be undone. But we can end the silence. We can stop turning our heads away. We can look at you in the eye and finally say on behalf of the American people, what the United States government did was shameful, and I am sorry ... To our African American citizens, I am sorry that your federal government orchestrated a study so clearly racist.”

- 5 of the 8 survivors were at the ceremony.

SATCHER, CLINTON AND GORE SURGEON GENERAL, PRESIDENT AND VICE-PRESIDENT





MEDICAL EVILS DURING WAR

1. German Nazi Concentration Camps

60

NAZI CAMPS ⁽¹⁾

- Evolution of the German camps:
 - *Detention* for holding of political opponents.
 - *Concentration* for imprisonment of “undesirables”.
 - *Extermination* for mass murder of Jews.
- About 77,00 Germans executed for participation in conspiracy against the Reich.
- During WWII, about 1,200 camps and sub-camps functioned in occupied Europe.
- The SS ran extermination camps, many in Poland
- Many prisoners died in the concentration camps due to maltreatment, disease, starvation, overwork, or they were executed as unfit for labor.

NAZI CAMPS (2)



Auschwitz



Dachau



"WORK MAKES ONE FREE," entrance to Nazi concentration camp at Theresienstadt, Germany

Theresienstadt

NAZI CAMPS ⁽³⁾

- During World War II, German physicians conducted painful and often deadly experiments on thousands of prisoners without their permission.
- From 1933 to 1945, the Nazis used doctors, medical anthropologists, geneticists, and psychiatrists to develop racial health policies.
- Started with mass sterilization of Jews and many other “substandard” peoples.

NAZI CAMPS (4)

- When the Soviets liberated some camps, almost all the prisoners had already been removed, leaving only a few thousand alive.
- 7,000 inmates were found in Auschwitz, including 180 children that doctors had experimented on.
- Towards the end of the war, various camps did:
 - Eugenics experiments.
 - Freezing prisoners to determine how downed pilots were affected by exposure.
 - Experimental and lethal medicines.
 - Cold water immersion experiments at Dachau.

HYPOTHERMIA EXPERIMENTS



With Aviator outfit



Without outfit

CRANIOMETRY FOR EUGENICS CLASSIFICATION



NAZI CAMPS ⁽⁵⁾

Inhumane, unethical, medical experiments carried out on concentration camp inmates are of three categories:

Facilitating the survival of military personnel.

Developing and testing treatment methods for injuries and illnesses of the German military.

Advancing the racial and ideological tenets of the Nazis.

MENGELE AND AUSCHWITZ TWIN RESEARCH (1)

Dr. Josef Mengele came to Auschwitz as an educated and experienced medical researcher in May of 1943.

If he could ensure that Aryan women gave birth to blond haired and blue-eyed twins, the future would be saved.

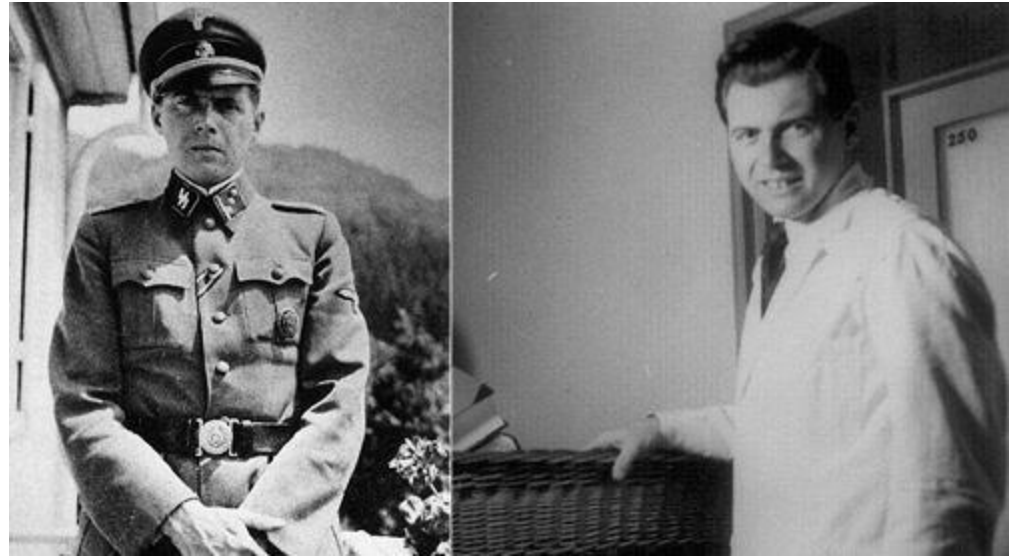
Mengele believed that twins held the secret to creating this type of population.

Auschwitz had an abundance of twins available for experimentation.

Twins were allowed to keep their hair and clothing, were tattooed with a number and sent to Dr. Mengele, who looked for any unusual traits.

MENGELE AND AUSCHWITZ TWIN RESEARCH (2)

- Measurements.
- Blood.
- Eyes.
- Shots and diseases.
- Surgeries
- Death and autopsies.



Josef Mengele

THE “ANGELE OF DEATH”

WANTED



Dr. Mengele in his mid 40's



An artist's conception of what Mengele would look like today at age 74.

Dr. Josef Mengele

For his crimes against humanity

Josef Mengele was responsible for the death of 400,000 persons at Auschwitz Concentration Camp. He tortured children and made their parents suffer. He brutalized people with horrible medical experiments.

Mengele is 74. Height 1.7m (5'10"). Eyes, greenish brown. He became a citizen of Argentina in 1964, a citizen of Paraguay in 1969.

Rewards worldwide total more than US \$2,375 million for information leading to the arrest and extradition of Dr. Josef Mengele.

Contact: Martin Mendelsohn, P.O. Box 33126, Washington, D.C. 20033, or call Simon Wiesenthal Center, (213) 553-9036. All information will be held confidential.

REWARDS-U.S.\$2,375,000

- Escaped Auschwitz 1945.
- Captured Munich 1946.
- Released (no SS tattoo).
- Argentina 1949.
- Several name changes.
- WG arrest warrant 1959.
- Paraguay 1959.
- Died Brazil 1979?

EXPERIMENTS ON CHILDREN

Children were put into pressure chambers, tested with drugs, castrated, and frozen to death.

They had experimental surgeries without anesthesia, as well as blood transfusions, isolation and hypothermia endurance.

Doctors injected children with diseases, performed sex-changing operations, and removed organs and limbs.

Nazis saw Jewish children as a threat, so they sought to kill and sterilize them.

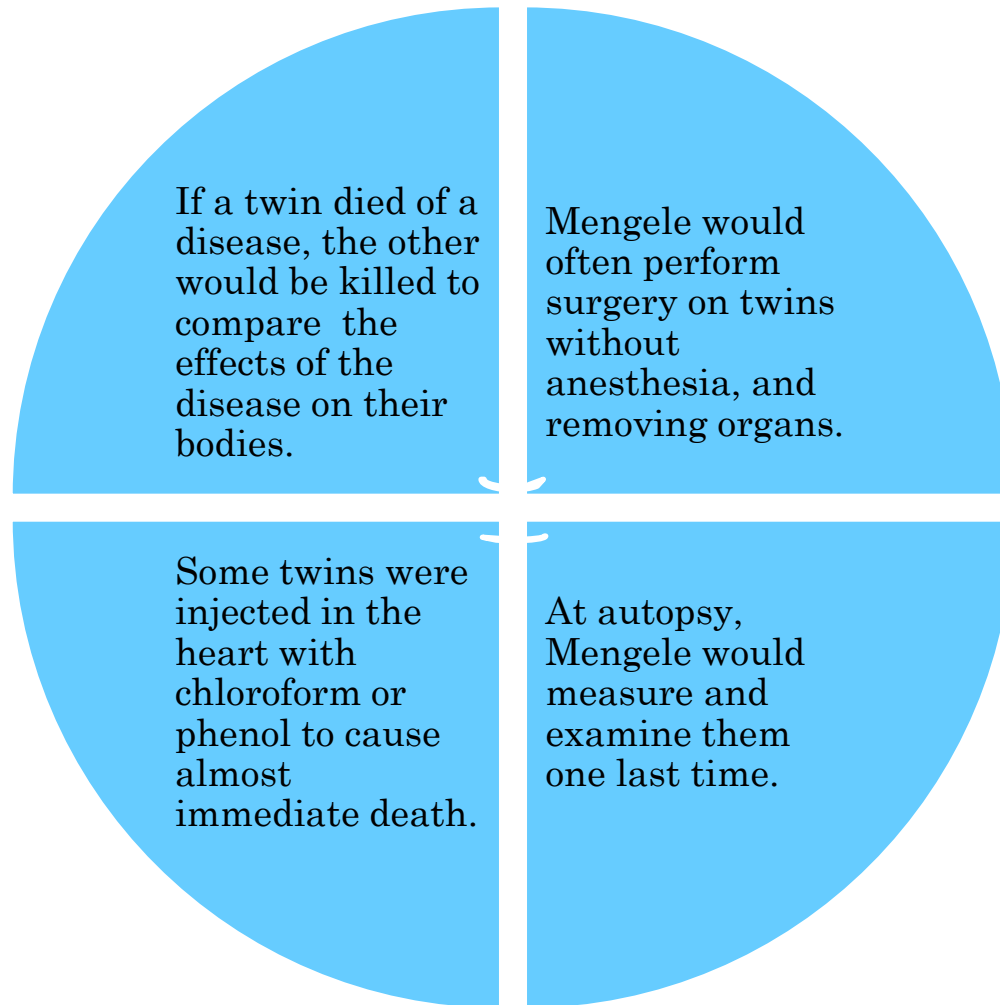
Some children were injected with different types of TB; a few months later they operated on them to see the effects on their organs

When Nazis realized they were losing the war, they injected the children they were experimenting on with morphine, and hung them.

MENGELE AND AUSCHWITZ TWIN RESEARCH ⁽³⁾

- About 3,000 twins, mostly children, were selected. (Only around 200 of these twins survived.)
- Twins didn't have to work as hard as the rest of the prisoners, they were given easy jobs and were also exempt from punishments.
- Daily, they had measurements taken and blood drawn.
- To create blue eyes, drops or injections of chemicals which caused extreme pain, infection, or sometimes even blindness would be placed in their eyes.

MENGELE AND AUSCHWITZ TWIN RESEARCH (4)



MENGELE AND AUSCHWITZ TWIN RESEARCH (5)



EUGENICS AND MEDICAL PROFESSIONALS

Physicians drawn to Nazism due to overcrowding in the profession aggravated by a depressed economy and as a backlash to high number of Jews in medicine in 1933.

Many applauded barring Jewish doctors from state clinics and hospitals and later measures preventing their practice.

Family physicians identified candidates for sterilization and medical personnel did about 400K procedures.

Physicians and nurses perpetrated the gassing murder of “incurably ill” children and adults (euthanasia, T4 program”).

After 1942, they were killed by lethal overdose and starvation.

Many proponents of eugenics who had earlier rejected killing, supported murders “for the good of the Fatherland” during the “national emergency of war.”

MORAL RATIONALIZATIONS (EXCUSES) NAZI CAMPS

All subjects had volunteered.

Only people doomed to die were used in experiments.

Participating in lethal research exiated subjects.

Doctors should not be held accountable for their actions.

Everything was done in defense of the country.

Sacrificed interest of the few to benefit the many.

USEFULNESS OF EXPERIMENTS?

Modern scientists overwhelmingly reject the use of results from experiments in the camps because of:

- Inhumane conditions.
- Lack of consent.
- Questionable research ethical standards.
- Badly designed.
- Most test subjects were not representative of the public.
- There is no humane way to duplicate the experiments.
- Medically and scientifically speaking, a cruel and useless waste of time and life.

MISCONCEPTIONS ABOUT NAZI DOCTORS

- The experimenters were sadistic crackpots.
- The experiments were junk science.
- They were all about racial eugenics.
- Many were mediocre doctors.
- Most were second-rate scientists.

GERMAN MEDICAL ASSOCIATION DECLARATION OF APOLOGY

- On May 23, 2012, German Medical Association issued a Declaration of apology at Nuremberg, taking responsibility for the crimes and atrocities committed by German doctors. who were "guilty of scores of human rights violations."
- "Outstanding representatives of renowned academic medical and research institutions were involved in organizing and carrying out the mass extermination of millions, and participating in barbaric medical experiments."
- "Doctors were not forced to participate in the atrocities, but were often enthusiastic supporters and even Nazi leaders..."



MEDICAL EVILS DURING WAR

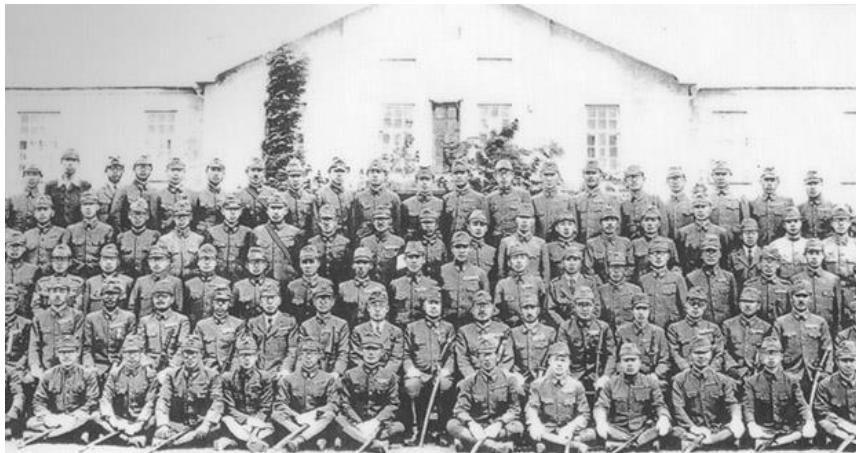
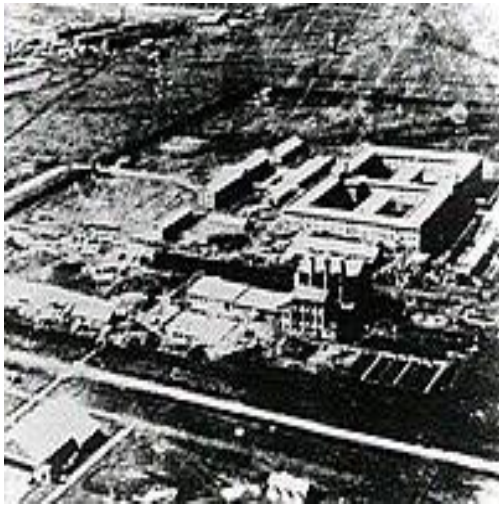
2. Japanese Unit 731 and Tōgō Unit

80

UNIT 731

- The Unit 731 complex covered 6 square K (2.3 sq mi) and consisted of more than 150 buildings.
- The design of the facilities made them hard to destroy by bombing.
- It had about 4,500 containers to raise fleas, 6 cauldrons to produce various chemicals, and about 1,800 containers to produce biological agents.
- Approximately 30 kg (66 lbs.) of bubonic plague bacteria could be produced in several days.

UNIT 731



03/03/2020

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UNIT 731

Unit of the Imperial Japanese Kwantung Army created as the successor to the Tōgō Unit, 1937-1945

In the Pingfang district of Harbin, largest city in the Japanese puppet state of Manchukuo (now Northeast China).

Officially known as Army Medical College Epidemic Prevention and Water Purification Research Laboratory (AEPRL).

Directed by General Shirō Ishii, whose researchers were all military physicians working under an alias.

Secrecy was necessary to hide the purpose of the unit (research on humans) and to protect the Emperor.

SHIRŌ ISHII (1892-1959)



Surgeon General
(Lieutenant-General) in the
Imperial Japanese Army,
who was placed in command
of the AEPRL.

Microbiologist who served as the
director of Unit 731, a biological
warfare and human experimentation
unit of the Kwantung Army in the
Second Sino-Japanese War.

UNIT 731 ⁽¹⁾



Vivisection.



Injection of diseases disguised as vaccinations.



Biological warfare.



Weapons testing.



Surgical experiments.



Extreme temperatures (frostbite, burns).



Starvation research.



Electrocution and exposure to lethal X-ray doses.



Rape and forced pregnancy.



Syphilis investigations.



Centrifugation and low pressure exposures.

UNIT 731 ⁽²⁾

- About 8,000 men, women, and children died during the human experimentation conducted by Unit 731.
- Almost 70% of the victims were Chinese, both civilian and military.
- About 30% were Russian, South East Asians, Pacific Islanders, and very few Allied military.
- At war's end, crews tried to blow up the sites, but most were too sturdy and stayed almost intact .

UNIT 731 ⁽³⁾

- General MacArthur secretly granted immunity to the MD's of Unit 731 in exchange for giving *only* America their research on biological warfare.
- U.S. did not want the Soviet Union, to acquire data on biological weapons.
- After World War II, the Soviet Union built a biological weapons facility in Sverdlovsk with data from Unit 731.

UNIT 731 ⁽⁴⁾

- Lieutenant Masami Kitaoka was one of Ishii's assistants (both got MacArthur immunity).
- While working for the Japan Institute of Health Sciences **after** the war (1947-1956) he did many experiments on unwilling Japanese subjects.
- He infected prisoners with rickettsia and mental health patients with typhus.
- When authorities went to arrest him in 1956 he was found dead of “natural causes”. (???)

UNIT 731 ⁽⁵⁾

- Soviet Union prosecuted 12 military leaders and scientists from Unit 731 in the Khabarovsk court.
- Among those prosecuted for war crimes and germ warfare was General Otozō Yamada commander of the Kwantung Army occupying Manchuria.
- Japanese doctors and army commanders from Unit 731 got sentences from 2 to 25 years in a Siberian labor camp.
- The Americans refused to acknowledge the trials, branding them “communist propaganda”.

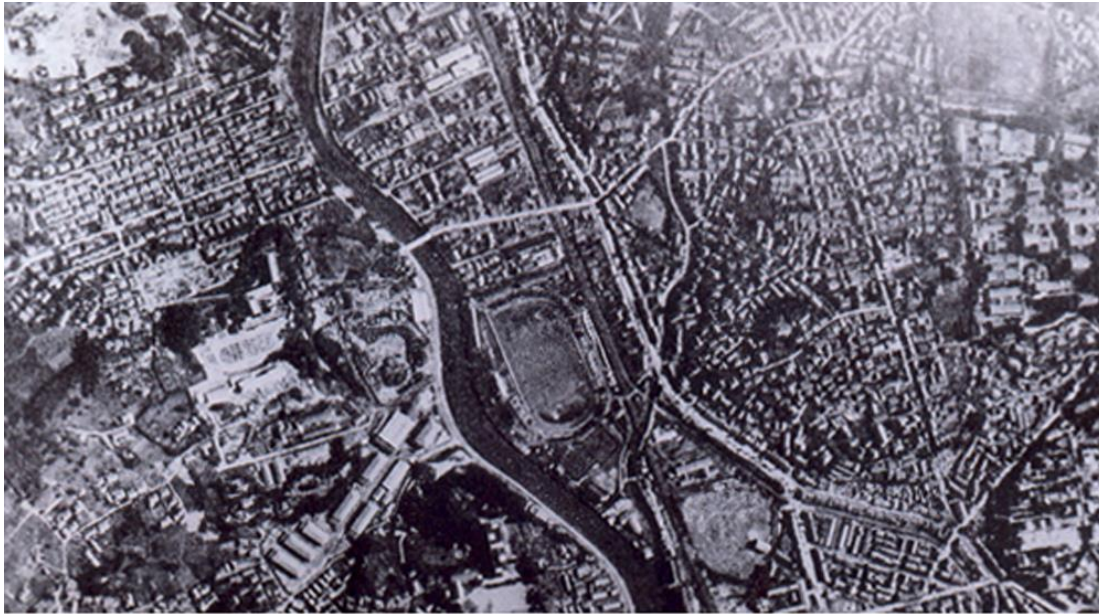


HIROSHIMA AND NAGASAKI

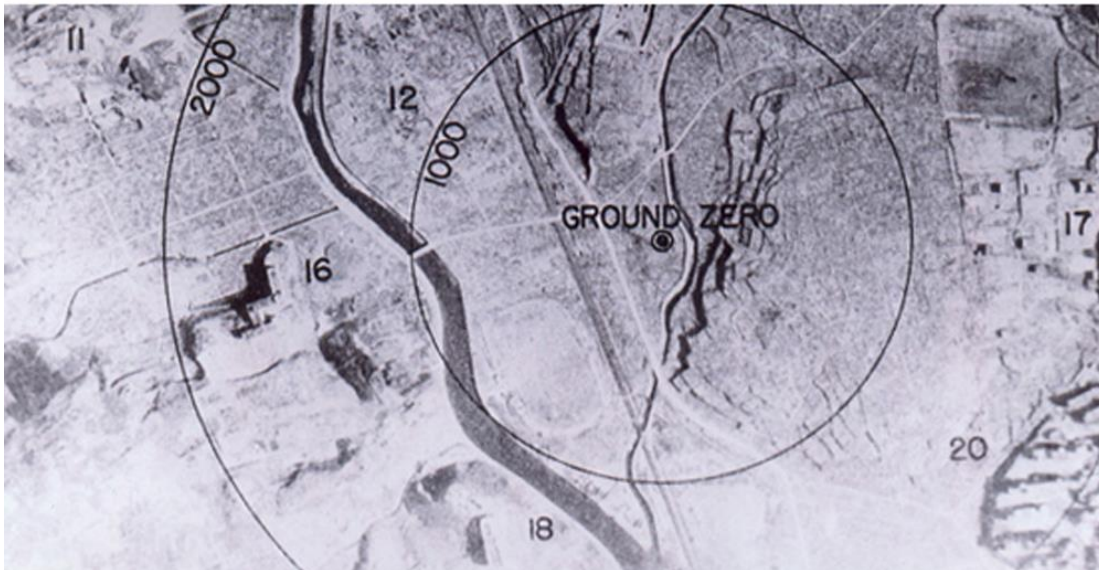
90

HIROSHIMA AND NAGASAKI ⁽¹⁾

- US detonated 2 nuclear weapons over Hiroshima and Nagasaki on August 6 and 9, 1945.
- As required by the *Quebec Agreement* bombing was done with the consent of the UK.
- The 2 bombings killed between 129,000 and 226,000 people, most of whom were civilians, and remain the only use of nuclear weapons in armed conflict.
- Many accusations that this was more of a test than a war deterrent.



Nagasaki before the bomb and after the bombing fires had burned out.



HIROSHIMA AND NAGASAKI ⁽²⁾

- Between 90,000 and 166,000 people are believed to have died in the 4 months after the explosion.
- U.S. Department of Energy has estimated that after 5 years there were more than 200,00 total deaths.
- The city of Hiroshima has estimated that 237,000 people were killed directly or indirectly by the bomb's effects, including burns, radiation sickness, and cancer.

HIROSHIMA AND NAGASAKI ⁽³⁾

- Nagasaki: it is estimated that
 - Between 40,000 and 75,000 people died immediately following the atomic explosion.
 - Another 60,000 people suffered severe injuries.
 - Total deaths by the end of 1945 may have reached 80,000.

HIROSHIMA AND NAGASAKI (4)

US medical establishment collected, preserved, studied (and hoarded) data from the ground, bodies and body parts in Hiroshima and Nagasaki.

Atomic Bomb Casualty Commission (ABCC), adopted a “no treatment” policy for the bombing survivors (*hibakusha*).

US physicians were expected to gather information and not give *any* treatment (to protect the integrity of research data).

Japanese saw this as an evolving research project using civilians in H & N as “guinea pigs” in a radiation test.

Abrogation of professional medical ethics “in the name of science” was seen as needed to obtain vital knowledge for use in a possible future war.



THE ROSENHAN EXPERIMENT

“Thud Experiment “1972

96

THE ROSENHAN EXPERIMENT (1)

- David Rosenham, Stanford University Professor.
- 8 healthy associates (pseudopatients), 3 women and 5 men, including Rosenhan himself.
- A psychology graduate student, 3 psychologists, a pediatrician, a psychiatrist, a painter, and a housewife.
- None had a history of mental illness.
- Briefly feigned auditory hallucinations to gain admission to 12 psychiatric hospitals in 5 states.

THE ROSENHAN EXPERIMENT (2)

- All were diagnosed with psychiatric disorders and were admitted to the hospital.
- After admission, they acted normally and told staff they no longer had any hallucinations.
- They exhibited normal behavior at all times.
- All were forced to admit to having a mental illness and to take antipsychotic drugs as a condition of their release.

THE ROSENHAN EXPERIMENT (3)

- All but one were diagnosed with schizophrenia "in remission" before their release.
- Stay in hospital ranged from 7-52 days (average 19).
- 30% of the real patients expressed a suspicion that the pseudopatients were sane and seemed to be able to correctly identify them as impostors.
- None of the pseudopatients were identified as impostors by the hospital staff.

THE ROSENHAN EXPERIMENT (4)

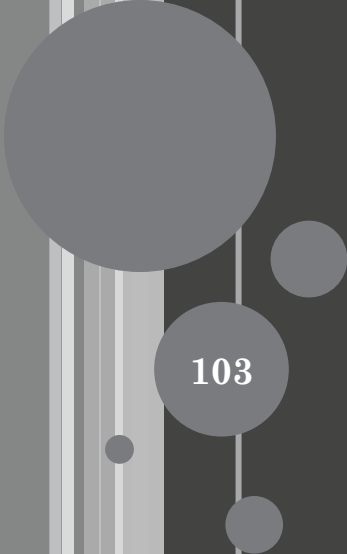
- Overwhelming sense of dehumanization, severe invasion of privacy, and boredom while hospitalized.
- Their possessions were searched randomly, and they were sometimes observed while using the toilet.
- Staff generally objectified and dehumanized patients.
- Some attendants were prone to physical and verbal abuse of patients when other staff were not present.
- Contact with doctors averaged 6.8 minutes per day.

THE ROSENHAN EXPERIMENT (5)

- Done to determine validity of psychiatric diagnosis.
- Showed the dangers of dehumanization and labeling in psychiatric institutions.
- Demonstrated the disempowering and demeaning nature of psychiatric patient care.
- It suggested the use of community mental health facilities which concentrated on specific problems and behaviors rather than on psychiatric labels.

THE ROSENHAN EXPERIMENT (6)

- Rosenhan planned to be inpatient for only several days, but he was in the hospital for almost 2 months.
- Rosenham said: “It is clear that we can’t distinguish the sane from the insane in psychiatric hospitals”.
- Many critiques and negative comments in response to his study.



STATEVILLE PENTENTIARY MALARIA STUDY

103

STATEVILLE MALARIA STUDY (1)

- Controlled but ethically questionable study of the effects of malaria on prisoners at Stateville Penitentiary in Illinois in the 1940's.
- Drs. Alving, Dern and Beutler from the Department of Medicine at the University of Chicago, working with the US Army and the State Department.
- Viewed as coercive because it offered shortened sentences to participants.

STATEVILLE MALARIA STUDY (2)

- World War II created an urgent need for new malaria treatments.
- U.S. soldiers were deployed to areas of the Pacific with extremely high rates of malaria infection.
- Quinine, the usual treatment, was unavailable.
- New risks of malaria posed by World War II called for increased experiments human subjects.

STATEVILLE MALARIA STUDY (3)

- Prison population allowed for researchers to limit extraneous variables across the subjects.
- Prisoners were all white men, of similar age and health and homogenous in terms of behavior.
- Follow-up evaluations were possible since all had long-term sentences.
- Offers of parole reevaluation and financial fees (\$25–\$100 for a trial), gave a very high number of subjects willing to participate.

STATEVILLE MALARIA STUDY (4)

- The study used *P. vivax*, sourced from a military patient infected in the Pacific.
- *P. vivax* has milder symptoms and it's not deadly, like *P. falciparum*.
- It was known for its resistance to standard quinine treatment and frequent relapses.
- Control and test subjects were given a constant number of bites from infected mosquitos.

STATEVILLE MALARIA STUDY (5)

- Test treatments had not been evaluated on humans, and their toxicity and potency were unknown.
- Some were analogs of *pamaquine*, an alternative to quinine that had higher toxicity.
- Researchers tested many doses, some very toxic.
- Establish a maximum margin of safety.
- Observe the manifestation of side effects.

STATEVILLE MALARIA STUDY (6)

- The international Nuremberg Code of human experimentation ethics had clauses directly violated by the Stateville experiments.
- The U.S. has never formally ratified the Code, and justified the ethics of prison experiments like the Stateville study.
- Until later in the Century, the medical community in the US regarded the Nuremberg Code to be applicable to war criminals and not to the practices of U.S. researchers.

STATEVILLE MALARIA STUDY (7)

- The 1946 Nuremberg trials the International Military Tribunal prosecuted leaders of former Nazi Germany for war crimes and experimentation on human subjects.
- The Stateville experiments were used as defense by the Nazis who argued similarities between their prisoner experiments and the United States' at Stateville Penitentiary.
- Procedures, motives and premise of the studies were arguably similar, but U.S. claimed fundamental differences, and used them as justification for continuing the Stateville experiments.

STATEVILLE MALARIA STUDY (8)

- Adverse side effects were intentionally caused to subjects, to show reactions to extremely high-potency treatments.
- A subject died several days after he was injected with a high dosage of SN-8233, a potential treatment.
- The study results had *minimal* long-term impact on malaria treatment methods.

GUATEMALA SYPHILLIS EXPERIMENT

112

GUATEMALA SYPHILIS EXPERIMENT (1)

- The USA led the human syphilis experiments in Guatemala 1946-1948 which resulted in 83 deaths.
- Program ran by Dr. John C. Cutler, a participant in the late stages of the Tuskegee experiment.
- Doctors infected soldiers, prostitutes, prisoners and mental patients with syphilis and other STD's, **without** the informed consent of the subjects.

GUATEMALA SYPHILIS EXPERIMENT (2)

- U.S. President and the Secretaries of State and of Health and Human Services formally apologized to Guatemala for the ethical violations that occurred.
- Guatemala condemned the experiment as a crime against humanity.



WORDS OF WISDOM

115

MAN'S INHUMANITY TO MAN

- Robert Burns, 1784:
Man's inhumanity to man
Makes countless thousands mourn!
- Samuel von Pufendorf, 1673:
"More inhumanity has been done by man
himself than any other of nature's causes."

MORALITY IN MEDICINE AND SCIENCE

“The principle of medical and surgical morality, therefore, consists in never performing again on man an experiment which might be harmful to him to any extent, even though the result may be highly advantageous to science, that is, to the health of others.”

Claude Bernard, 1854

117

ANY QUESTIONS ?





