Human Sacrifice and Human Experimentation:
Reflections at Nuremberg

Jay Katz

Jay Katz is the Elizabeth K. Dollard Professor Emeritus of Law, Medicine, and Psychiatry and Harvey L. Karp Professorial Lecturer in Law and Psychoanalysis at Yale Law School. An internationally recognized scholar of medical ethics, with particular expertise in the ethics of human experimentation and in the doctor-patient relationship, Professor Katz is currently working on a book-length study of the issues raised in the address presented here.

This address was originally given at the final plenary session of a conference commemorating the fiftieth anniversary of the Nazi doctors' trial at Nuremberg, October 25-27, 1996. The conference was convened by the International Physicians for the Prevention of Nuclear War and the Physicians for Social Responsibility.

"Life is short, the art long, opportunity fleeting, experiment treacherous, judgment difficult," Hippocrates once said. On this fiftieth anniversary of the Doctor's Trial, which charged Nazi physicians with "crimes against humanity" and violations of Hippocratic ethics in the conduct of human experimentation, I want to begin with Hippocrates' observation that to "experiment [is] treacherous."

Being aware of medicine's limited ability to cure and, thus, the temptation to resort to dangerous, heroic measures, Hippocrates admonished his fellow physicians, "[a]s to diseases, make a habit of two things – to help, or at least to do no harm." Hippocrates was not opposed to human experimentation in the practice of medicine, but in his day physicians experimented primarily to benefit individual patients, once customary remedies had proven ineffective.

At the dawn of medical science in the mid-1850s, "experiment treacherous" assumed a dimension not contemplated by Hippocrates. For the first time, experimentation would extend to countless patients, not for their direct benefit, but to advance scientific knowledge for the benefit of mankind. Medicine now held the promise of reversing Hippocrates; aphorism: Life would be longer, art shorter and science longer, opportunity enduring, judgment easier. To accomplish these objectives, a new breed of scientific physician-investigators expected their patient-subjects to make sacrifices on behalf of medical science. Thus, experiment would become even more treacherous.

The philosopher Hans Jonas, in a remarkable essay on human experimentation, comes close to equating human experimentation with the "primeval human sacrifices…that existed in some early societies [for] the solemn execution of a supreme, sacral necessity"; for he suggested that both involved "something sacrificial [in their] abrogation of personal inviolability and the ritualistic exposure to gratuitous risk of health and life, justified by a presumed greater social good."

Whatever the relationship between ancient religious practices of sacrifice as an offering to deity and scientific research practices of sacrifice as an offering to medical progress, the readiness with which human sacrifice for the sake of scientific progress has been embraced by the medical profession is remarkable. As one distinguished surgeon put it: "[Conducting] controlled studies may well sacrifice a generation of women but scientifically they have merit."

René Girard, in his book, *Violence and the Sacred*, observes that "[i]n many rituals the sacrificial act assumes two opposing aspects, appearing at times as a sacred obligation to be neglected at great peril, at other times as a sort of criminal activity entailing perils of equal gravity." The conflict between medicine and law on the permissible limits of human experimentation, to which I shall return repeatedly, reflects these "opposing aspects." When do such "sacred [scientific] obligations" become a "criminal activity"?

Sacrifice can be voluntary or involuntary. The distinction is crucial. But I shall argue that even voluntary sacrifice can be safeguarded only if investigators learn that seeking voluntary consent is their moral obligation, if they learn to desist from employing the concept of voluntary consent as a deceptive subterfuge to shift moral responsibility for participation in research from themselves to their patient-subjects.

In my work I have been largely concerned with involuntary sacrifice, which brings to the surface a conflict inherent in all human research: respect for individual inviolability, on the one hand, and the pursuit of scientific knowledge for the benefit of mankind, on the other. Exploring this conflict in the context of the Nazi concentration camp experiments may seem ludicrous, because the brutality and torture inflicted during these experiments was so immoral that one need not probe further. Yet, I believe that the doctors' conduct illuminates, the flames from hell, less egregious though still troublesome practices that have stalked human experimentation from its beginnings to this day.

The Nuremberg Code is the one document that seeks in uncompromising language to protect the inviolability of subjects of research. It deserves to be taken more seriously than it has been by the research community.

We cannot resurrect the dead, but we can learn from their suffering.

When I received the invitation to speak at Nuremberg, I knew that I had to come. But I did not realize then how painful it would be to reimmerse myself in a history that is so inextricably intertwined with my personal and professional life. For what transpired in Nazi Germany has shaped my life as a person, a physician, and a teacher. In all my work the disadvantaged in our midst, those stripped of their rights and dignity – the mentally ill, women, children, patients, research subjects – have always been my people.

I was born in Germany – in a small town Zwickau, Saxony – and lived there until 1938. After a year in Czechoslovakia, my immediate family escaped to England a few weeks before the invasion of Poland. Seven months later we arrived in the United States, and I eventually studied medicine at Harvard Medical School. I was a second-year medical student during the Doctors' Trial, but it was never discussed in any lecture or seminar, even though Harvard was a school that encouraged us to become investigators. Only after I joined the Yale Law School faculty, 39 years ago, did I

learn in any depth about the concentration camp experiments. A few years later, thoughts of those experiments led me, joined by many students, to a prolonged exploration of the ethical and legal implications of human experimentation, opening up a field of inquiry then pursued by only a handful of others.

As soon as I decided to go to Nuremberg, childhood memories flooded my mind: listening on the radio to Nazi party rallies where Hitler, Hess, Goebbels, and others spoke about my people in contemptuous and threatening ways. I was then a frightened Jewish boy, scared to go to school, where I knew I would be vilified and on a few occasions even beaten. I was angry at my parents for not leaving. They thought that it would all blow over; a "Final Solution" was beyond our contemplation.

The nightmare is now past; yet its memories are still alive. During the past few months they have haunted me in my dreams and during many nights when I could not sleep. And this morning they accompany me to this plenary session at the Nuremberg Opera House.

My problems speaking to you today remain unresolved. They are embedded in my intent to focus on an aspect of my life's work that began with what I learned about Auschwitz but then went beyond the Nazi horrors, to an exploration of physicians' striking inattentiveness to ethical values in the conduct of human experimentation before, during, and after the Nazi era. To be sure, at no time in the annals of human experimentation have physicians conducted experiments on humans with the sadism witnessed during the darkness of the Nazi period, where, for example, the death of subjects was an integral part of the research design.

Thus, in making any comparisons between the Nazi experiments and underlying problems in all human research, no matter how qualified, in the belief that we must learn from history and that its darkest moments have much to teach us, would I detract from the "uniqueness" of the suffering of the millions who were slaughtered, many with the active collaboration of physicians, and of the thousands who perished in the service of human experimentation? Would I make invidious comparisons between the conduct of the Nazi physician-investigators and physician-investigators in the rest of the Western world? I put my questions this starkly because they have haunted me during the past months.

I believe that the concentration camp experiments, which transgressed the last vestiges of human decency, can be located at one end of a continuum, but I also believe that toward the opposite end, we must confront a question still relevant in today's world: How much harm can be inflicted on human subjects of research for the sake of medical progress and national survival? Knowledge about hell can make investigators pause and reflect, as it did at times during the days of the Cold War, when a few American physician-scientists, while contemplating experiments much less egregious than those conducted by the Nazi physicians, asked: "Are we beginning to behave as they did?"

The concentration camp experiments are embedded in the Holocaust, in what happened to my people, my relatives, Gypsies, homosexuals, political prisoners, and prisoners of war. The confluence of many forces – including biological science and the ideology of the Nazi state – made the Holocaust well-nigh inevitable. And physicians' inattentiveness to the problematics of Hippocratic ethics and its oath, which had served medicine well in the days of the Greeks and

throughout the Middle Ages but required a thoroughgoing reappraisal at the dawn of the age of medical science added its own contributions to the Holocaust and the concentration camp experiments.

Since others at this conference will talk about the Holocaust – the murders committed during the selections for death or work – I shall address only the human experimentation aspects of the Holocaust. I do want to underscore, however, that, unlike other historical instances of mass murder, the Final Solution was carried out by doctors acting as executioners, and that science – biological science – added its own justifications for the Holocaust and euthanasia as well. How could physicians behave that way? How could doctors become murderers?

I have no answers. Nor have I read any that satisfy me. Robert Lifton, in his pioneering book, *The Nazi Doctors*, suggests that an explanation can be found in the psychological principle of "doubling: the division of the self into two functioning wholes, so that a part-self acts as an entire self [an Auschwitz self and a non-Auschwitz self]." "The Nazi doctors' immersion in the healing-killing paradox," Lifton says, "was crucial in setting the tone for doubling," leading doctors to "[subvert] medicine from a practice of healing to a science of killing. Nazi medicine was not just corrupted, it was inverted."

"Doubling," however, is an all too human phenomenon. Indeed, it is a ubiquitous manifestation of man's conflictual nature. And physician-investigators are particularly susceptible to the perils of doubling. In their scientific pursuits doctors are double agents, because their commitment to the objective imperatives of the research protocol conflicts with, and can take precedence over, the individual needs of patients. Thus, in human research, the healing-harming-(killing) "paradox" is inherent in the task itself.

Let me note only in passing that with regard to euthanasia, "the healing-killing paradox" is graphically illustrated in an article published in 1941 in the *American Journal of Psychiatry* by a Cornell Medical School professor, who recommended that "hopelessly unfit children – nature's mistakes – should be killed, and the less unfit [sterilized]" so that "thereafter civilization will pass on and on in beauty." The Nazis began by killing their own "defectives' and then went on to killing Jews and Gypsies, whom they also considered biologically "defective."

I continue to find it inexplicable, despite the many explanations that have been advanced, that involuntary sacrifice, with physicians' active participation or passive acquiescence, went so totally out of control at Auschwitz. Can one say more than Erasmus did: *Homo homini aut deus aut lupus* (Man is to man either a god or a wolf)? Do we romanticize physicians too much when we wish to exclude them from Erasmus' dictum? Must we recognize, for the sake of the future, that the ingredients for what happened at Auschwitz are inherent in the conduct of research and that we must learn to control it better at its source?

Let me turn to the Doctors' Trial. I shall relate it in two parts. First, I will describe two experiments most briefly; and then, after a few comments on the history of medical ethics, I will analyze the tribunal's judgment and its implications for the future conduct of human research.

The Doctors' Trial was the first of twelve trials that followed the Nuremberg trial of the major war criminals by the International Allied Military Tribunal. Conducted by American judges, the

Doctors' Trial focused on experimentation on human beings during the Nazi regime. Evidence on the experiments was presented over many months in excruciating detail. I have reviewed the record many times and still find it devastatingly painful to read.

Most notorious among the experiments was Dr. Sigmund Rascher's work on the effects of high altitude on human survival. On May 15, 1941, Rascher wrote to Heinrich Himmler: "[During] a medical selection course [in which] research on high altitude flying played a prominent part [we learned that English fighter planes were able to reach higher ceilings than we could]. Regret was expressed that no experiments on human beings have so far been possible…because such experiments on human beings are very dangerous and nobody is volunteering. I therefore put the serious question: Is there any possibility that two or three professional criminals can be made available for these experiments?…The experiments in which the experimental subject of course may die…are absolutely essential…and cannot be carried out on monkeys, because monkeys offer entirely different test conditions…" Dr. Rudolf Brandt, on behalf of Himmler, responded promptly: "I can inform you that prisoners will, of course be gladly made available for the high-flight researches…I want to use the opportunity to extend to you my cordial wishes on the birth of your son…"

In Rascher's report on one of these experiments, he described in graphic detail "the fate of a 37-year-old Jew in good general condition who, at ever increasing altitudes, began to perspire, to wiggle his head, [and to suffer from severe] cramps . Breathing increased in speed and [he] became unconscious…Severest cyanosis developed…and foam appeared at the mouth. After breathing had stopped [an electrocardiogram] was continuously written until the action of the heart had come to a complete standstill. One half hour [later] dissection was started."

The freezing experiments, many fatal, were even more brutal, if that is possible. The subjects were immersed in ice water for hours on end. They pleaded to be shot to escape their unbearable agony. As I read these accounts, I could almost hear their agonizing pleas. These and the many other experiments, conducted at Auschwitz and elsewhere, bear testimony to the brutality inflicted on "lives not worth living" and therefore expendable.

Rascher, in his report, was delighted that the heart actions he had recorded "will [prove to be of] particular scientific interest, since they were written down with an electrocardiogram to the very end." For him the experiment represented another triumph in the 100-year history of human sacrifice for the sake of the advancement of knowledge.

Experimentation with human beings antedates the Nazis. Its roots go back to antiquity, but in the 1850s, human research increased in magnitude unprecedented during the millennia of medical history. Academic physicians observed with envy the discoveries in physics and chemistry that had resulted from systematic, objective investigations, and they adopted the methodologies of the physical sciences so that medicine would also become a respected scientific discipline. At the same time, doctors lost sight of the fact that it is one thing to experiment with atoms and molecules and quite another to do so with human beings. Once, while reflecting on the inhumanity of Auschwitz, my thoughts took me back to these beginnings of medical research. I was struck by how quickly physicians accepted these new ways of conducting research with human beings, never asking whether fellow human beings, particularly patients, should be subjected to these novel practices and , if so, with what safeguards.

The initial advances in knowledge that resulted from such scientific investigations, which promised to alleviate human suffering to an extent previously unknown, seemed to justify the means employed. The uncharted moral path led only once to Auschwitz; yet, on many other occasions down the road, human beings would pay a considerable price for the sake of medical progress.

The early fruits of medical research were spectacular. The bacterial etiology of many diseases was proved, resulting in cures never before the lot of mankind. Investigations of the use of X-rays to see the previously invisible revolutionized diagnostic techniques. Experiments with various anesthetic agents led to remarkable advances in surgery.

These experiments were largely conducted in public hospitals with the poor, with children, women, prostitutes, the elderly – that is, with the disadvantaged, the downtrodden. Albert Moll, in his remarkable book, *Ärztliche Medizin*, published in 1902, described many experiments conducted with patient-subjects throughout Europe and the United States during the late nineteenth century. He was particularly troubled by experimentation with the terminally ill, who frequently served, as they still do, as subjects of research. Since they would soon die anyway, learning from them seemed self-evidently the right thing to do. In reading these accounts my mind turned again to the Aushcwitz subjects, who were also terminal cases – "lives not worth living"—soon to be reduced to ashes.

Human research and its contributions to the advancement of knowledge captured the imagination of doctors. The promise that omnipotence would replace the earlier struggle against impotence, and the promise of fame, academic advancement, and perhaps even economic fortune, loomed large in physicians' minds.

But the intrusion of research into the clinical practice of medicine required keeping the two enterprises separate. Patients went to doctors to be helped and not to serve as research subjects. Crucial distinctions needed to be made between clinical care and human research for the advancement of science. Instead, the boundaries between therapy and research became blurred. The "therapeutic illusion" – that research would in some undefined ways benefit subjects – contributed to this obfuscation.

Although physician-investigators were aware of the pain suffered by, and the occasional deaths of, their patient-subjects, they did not consider whether they might be violating their Hippocratic duty not to harm their patients. I shall return to this problem shortly. For now, let me note that this history reveals antecedents to the concentration camp experiments. However different they were in degree of torture and brutality, the experiments conducted by pre-World War II physician-investigators, largely medical school professors, were precursors to what transpired at Auschwitz. Medical students observed their teachers, read about their scientific investigations and their uses and abuses of patients. Dr. Helmut Poppendick, one of the Nazi doctor defendants, put it this way: "I knew [from my student days] that the modern achievements of medical science had not been brought about without sacrifices." Would the Nazi doctors have behaved differently without that history? At least some of them might have paused and reflected had they been differently educated.

When medical science and medical practice became intertwined, a new ethical question should

have been raised: Are physicians' obligations to their patient-subjects different from their obligations to their patients? But only a few remarkable physicians considered that question, and their concerns were not heeded.

So far I have focused on the beginnings of objective medical science. I now want to turn to the history of medical authoritarianism. The combination of the relentless pursuit of science, with its inherent dangers of objectifying subjects, became embedded in the ancient tradition of medical authoritarianism, with its inherent objectification of patients. Both dynamics make it difficult to respect patient-subjects as persons with their own interests and rights.

In my readings on medicine from ancient and medieval times up to the present, I was impressed by physicians' awareness of their relative impotence, on the one hand, and their conviction that they had something useful to offer to their patients, on the other. In the late seventeenth century, the physician Samuel de Sorbière wrote that medicine "is a very imperfect science, quite full of guesswork, and …scarcely [understands] its subject matter." He was of two minds about whether to be truthful with patients or to foster their unconditional confidence in their physician because such confidence served the purposes of cure.

This conflict was generally resolved by encouraging physicians to be authoritarian – to demand that patients be obedient and follow doctors' orders if they wanted to be helped. "Should the patient not submit to your discipline…do not persevere in the treatment," said the physician Isaac Israeli around 900 A.D. And the surgeon Henri de Mondeville wrote around 1200 A.D., "the surgeon should promise that if the patient will obey the surgeon…he will soon be cured." As late as the mid-1950s, the influential sociologist Talcott Parsons observed: "[T]he doctor-patient relationship has to be one involving an element of authority – we often speak of 'doctors' orders'."

Any disclosures were limited to enlisting patients' cooperation; otherwise, as Hippocrates had put it, "[reveal] nothing of the patient's future or present condition." A patient's blind trust was considered essential, even though, beyond comforting attention and a few potions, physicians had little to offer for the cure of disease.

In sum: Two precepts were handed down from generation to generation of Hippocratic physicians: to avoid doing harm and to insist on silent obedience. The latter, in particular, had far-reaching consequences for the conduct of research; for the same authoritarianism with which patients had traditionally been treated in therapeutic settings was imposed on subjects of research, who learned little, if anything, about the scientific purposes for which they were recruited.

Physician-investigators seemed oblivious to these moral issues and, if they were not, charged ahead anyway. Ultimately-and, ironically, first in Germany – the state took notice and began to regulate research. In 1900, Dr. Albert Neisser was put on trial after it became known that he had injected serum from patients with syphilis into patients, largely prostitutes, suffering from other diseases. The German academic medical community defended his conduct. Lawyers, on the other hand, argued that "non-therapeutic research without consent fulfilled the criteria of physical injury in criminal law."

That same year, the Prussian Parliament enacted the first, limited state regulation of research. The

lawyer Ludwig von Bar, a consultant to the Prussian Minister, put it well: “Respect for rights and morality has the same importance for the good of mankind as a medical and scientific progress.” One hundred years later, his assertion is still being contested, and it was most flagrantly disregarded by the Nazi doctors.

In 1931, the Weimar republic enacted regulations providing protection not only for subjects of nontherapeutic research but also for patients receiving “innovative therapy.” The minutes of the 1930 meeting that preceded the enactment of these regulations record how the academic physicians made light of what they called “rare” abuses, emphasizing instead the importance of advancing medical science. Only Dr. Julius Moses, a physician and member of the German Reichstag, argued for official guidelines to protect patients from dangerous experiments. His was a lone voice among physicians.

The role of the state in the regulation of medicine raises complex questions that I cannot discuss this morning. Note, however, that in the United States common law judges, not physicians, promulgated the doctrine of informed consent in medical practice, giving some decision-making authority to patients. Medicine has never created a regulatory framework for its practices, and this lack of a structure may come to haunt us in this age of managed care and physician-assisted suicide.

Michael Kater concluded his scholarly analysis of *Doctors under Hitler* with the observation that “[I]t was in the interpersonal relationship between healer and patient that German medicine corrupted itself [by contravening] the most important principle of the Hippocratic Oath…’I will use treatment to help the sick according to my ability and judgment, but never with view to injury and wrongdoing.’” But as I have tried to demonstrate, the corruption Kater speaks of has a long history. Moreover, the Hippocratic oath – a document that emphasizes physicians’ obligation of caring attention toward individual patients – says nothing about the ethics of human research that has relevance for an age of scientific medicine, unless one wants to invoke the oath to put a stop to most research. Thus, after the dawn of the age of science, the medical profession failed its members and its patients by not modifying its oath to reconcile its commitment to patients; welfare with radically changed circumstances.

For many reasons, physicians have preferred to view human experimentation merely as an extension of medical practice. In 1916 the Harvard physician Walter Cannon recommended to the House of Delegates of the American Medical Association that it endorse the importance of obtaining patient consent and cooperation in human experimentation. His proposal, however, was not brought up for consideration. One influential physician observed, “it would open the way for a discussion of the importance of obtaining the consent of the patient before any investigations are carried on which are not primarily for the welfare of the patient.”

And this is only half the story. Disclosure in these contexts would require discussion with patient-subjects of the uncertainties inherent in therapeutic medicine as well; and, if that were to happen, the question would arise: Why should not patients be similarly informed? Physicians feared that their authority to make decisions on behalf of patients would be undermined and patients’ best interest would be detrimentally affected. Doctors viewed such prospects, as they still do, as a threat to the traditional practice of medicine. They valued silence, their own and their patients’, for silence maintains authority.

The Doctors' Trial confronted the tribunal with aberrational, almost unbelievable, accounts of what physician-scientists can do and justify when respect for human dignity is totally abrogated. In its final judgment the tribunal went beyond these facts and articulated a vision of the limits of scientific medical research that was clear and unambiguous. To be sure, its pronouncement would eventually require elaboration and modification, but it was the uncompromising clarity of its vision about the primacy of consent that proved so disturbing to the medical community.

The message of the tribunal might easily have been blunted by the confusing or inaccurate allegations made throughout the trial. In his opening statement Telford Taylor, then chief counsel for the prosecution of war crimes, charged the doctor-defendants "with murders, tortures and other atrocities committed in the name of medical science." But in his closing argument, James McHaney, the chief prosecutor for the medical case, redirected the tribunal's attention to what he considered the nub of the case: "[T]hese defendants are, for the most part, on trial for the crime of murder….It is only the fact that these crimes were committed in part as a result of medical experiments on human beings that makes this case somewhat unique. And while considerable evidence of a technical nature has been submitted, one should not lose sight of the true simplicity of this case."

Thus, was it a murder trial of ordinary criminals, who also happened to be doctors, or of medical scientists (and medical science) whose conduct made them murderers? The ensuing and prolonged disregard of the Nuremberg Code by members of the medical profession depended on their answer to this question. Most focused on the barbarism of the Nazi doctors' conduct and concluded that the code was relevant only to Nazi practices but not to research in a civilized world. They disregarded the fact that murder and torture were not the sole issues before the court, that the permissible limits of scientific research were on trial as well.

The tribunal addressed both issues: "War crimes and crimes against humanity" and rules that must be observed in the conduct of medical experimentation. With respect to the latter, the tribunal observed that "medical experiments…when kept within reasonably well defined bounds conform to the ethics of the medical profession." But then the judges immediately asserted that "[a]ll agree however, that certain basic principles must be observed in order to satisfy moral, ethical and legal concepts."

The phrase "all agree" was confusing. Who were these "all"? Surely not the Nazi doctors, among them some of the most distinguished German medical scientists, and surely not many physician-investigators of the nineteenth and early twentieth century. Nor do many contemporary medical scientists embrace the tribunal's principles. The confusion, I believe, had its origins in the previously noted disagreement over the issues that required adjudication: All agreed with the prohibition against murder and torture; but "all" did not agree with the tribunal's "basic principles" for the conduct of research.

Of the ten principles known as the Nuremberg Code, the first will be my focus here. It reads, "The voluntary consent of the human subject is absolutely essential." The judges did not, however, stop there. Instead, they went to unusual lengths to define voluntary consent, in terms of both subjects' capacity to give consent and the information that investigators must provide to subjects. It is the detailed disclosure requirements which, I believe, the research community has found difficult to

accept.

The judges wondered whether they had gone too far in imposing their legal views on the medical profession: "Our judicial concern, of course, is with those requirements which are purely legal in nature.…To go beyond that point would lead us into a field that would be beyond our sphere of competence." But if indeed they did venture "beyond [their] sphere of competence," they were compelled to do so. Whatever their ignorance of medicine's needs, being American judges – steeped in the self-determination ideal, so much celebrated in our political tradition – they wanted their first principle to safeguard human dignity and inviolability, in research and civilized life.

The judges then shifted their focus back to the concentration camp experiments. This, too, proved confusing, because it created the impression that their code applied only to the case before them, that they were not addressing the entire universe of human experimentation. Yet, in their preamble to the Nuremberg Code, they had suggested otherwise. There they spoke to this entire universe when they averred that they wanted to promulgate "basic principles [that] must be observed in order to satisfy moral, ethical and legal concepts [in] the practice of human experimentation." This is my view of their intent. And this gives their pronouncements historic significance for the post-Nuremberg conduct of experimentation with human beings.

In the most uncompromising language, the judges suggested in their first principle that the tensions between progress in medical science and the inviolability of subjects of research must be resolved in favor of respect for person, his or her self-determination and autonomy. Consent became the necessary justification for the conduct of research, though not a sufficient justification. In most of its nine other principles, the tribunal spelled out other conditions that must be met before human beings could even be asked to serve as means for others' ends. These conditions include importance of the research question, prior animal experimentation, avoidance of unnecessary or predictably disabling injury or death.

Critics have correctly observed that the first principle was irrelevant to the case before the tribunal, for the basic problem with the concentration camp experiments was not that the subjects did not agree to participate; it was the brutal and lethal ways in which they were used. But, in my view, the first principle, like the rest of the code, did not speak to what transpired at Auschwitz; it spoke to the future. The fact that with regard to Auschwitz the first principle was indeed irrelevant, almost silly, is evidence of the judges' broader objective. American judges are not averse to going beyond the facts of a case; in this instance, I am glad that they did.

Another confusion was introduced by the medical experts for the prosecution, who asserted that in the rest of the Western world, physician-investigators conducted their research according to the highest ethical medical standards, including obtaining consent. I doubt that the judges believed them. On cross-examination, Dr. Andrew C. Ivy was forced to admit that the first written AMA code on human experimentation was enacted while the trial was under way, a fact he had tried to hide on direct examination. Whatever the judges' reactions to this testimony, they required little convincing that the physician-investigators *should* not use human beings for research without consent and, if they had done so in the past outside of Auschwitz, such practices should cease. Their convictions on that point were only reinforced by the nightmarish stories they had just heard.

The could not know that for decades their code would make little impact on research practices; that many violations would continue to occur in the United States and elsewhere. For example, the Tuskegee Syphilis Study, in which the lives and health of many African-Americans were ruined, was not stopped until 1972. That study had been conducted by the U.S. Public Health Service with 400 uninformed African-American men in order to gather data on the natural history of untreated syphilis from its inception to death. The study should never have begun, and it surely should have been stopped in the early 1940s when effective treatment for some of the late manifestations of syphilis became available.

Or consider the experimental injection of live cancer cells into uninformed elderly patients at the Brooklyn Jewish Chronic Disease Hospital. Or consider the experimental injection of plutonium into uninformed pregnant women to learn whether plutonium crosses the placental barrier, conducted at a time when little was known about plutonium and its dangers. Or consider the total body radiation experiments with terminally ill patients at the Cincinnati University Hospital. The plutonium and radiation experiments were conducted ruing the Cold war and were justified on grounds of national defense, an argument that had also been advanced by the Nazi physicians for what they had done. Finally, consider more recent drug studies to determine the toxicity of new cancer treatments, which were presented to patient-subjects not as research but as "new and promising frontier treatments."

These experiments were not comparable to the Nazi research, for care was always taken to keep physical harm to a minimum, but neither do they meet the standards of the Nuremberg Code. As one American research scientist put it, "I am aware of no investigator (myself included) who was actively involved in research…in the years before 1965 who recalls any attempts to secure 'voluntary' and informed consent according to Nuremberg's standards."

In giving preeminence to "voluntary consent" in the conduct of research, the judges sought to admonish investigators to become more respectful of subjects' dignitary interests in making their own decisions in interactions with investigators. Implementation of that objective remains the unfinished legacy of the Nuremberg judges. For the regulations that now require consent will not adequately protect the rights of subjects to self-determination unless physician-investigators embrace these rights as a new Hippocratic commitment.

Vulnerable subjects are compelled by their necessitous circumstances to place their trust in physicians whom they consider caregivers, not investigators. The problem of "trust" surfaced in one of the studies conducted by the President's Advisory Committee on Human Radiation Experiments during the Cold War, in which we assessed attitudes toward research among many hundreds of patient-subjects who as recently as 1994 were enrolled in research projects. We discovered that patient-subjects believed that "an [experimental] intervention would not even be offered if it did not carry some promise of benefit for them," and that therefore the consent process was "a formality" to which they need not give much thought.

The lesson to be learned from our findings is clear: Consent will never be truly informed or voluntary unless patient-subjects are disabused of that belief. Their rights can be protected only if physician-investigators acknowledge that their patient-subjects view them as physicians and not investigators, and that they, the doctors themselves, have the responsibility to challenge that trusty

in research settings. Patient-subjects must be told that their own and their physician-investigators' agendas are not the same. Research is not therapy.

This is a formidable undertaking and a consequential one, about which I have written extensively. It takes time, may impede research because of too many refusals, and may thereby make some experiments impossible to conduct. Choices have to be made between the relentless pursuit of medical progress and the protection of individual inviolability. The latter, however, will be given the weight it deserves only if doctors learn to respect patient-subjects as persons with minds of their own and with the capacity to decide for themselves how to live their medical lives. Their choices may or may not include a willingness for altruistic self-sacrifice, but such choices must take precedence over the advancement of science.

These are the conclusions to which my work has brought me. It all began with reading about Auschwitz, which led me on a long journey, during which I learned much about what human beings can do to one another in less egregious though still painful ways. Without my and my people's past, I might never have embarked on that journey.

In conclusion, I return to questions I raised somewhat differently at the beginning of this talk: Am I doing justice or injustice to the victims of concentration camp experiments by placing their suffering in the context of the historical processes by which they came about? Am I doing an injustice to the victims by comparing their fate with that of other research subjects whose lives were not reduced to ashes? Am I doing them an injustice, since violent death is always a tragedy, to celebrate the Nuremberg Code that resulted from their suffering?

What is justice, what is injustice? A friend of mine once pointed out to me the repetition of the word *justice* in Deuteronomy: "*Tzedek, tzedek tirdof*" (Justice, justice, shalt thou pursue). Such a seemingly unnecessary repetition always invites commentary, and the one he heard was this: "justice can never be adequately pursued only as a goal or an idea; it is also reflected in the means employed."

I have attempted this morning to employ the proper means, by comparing this tragic episode with its past as well as with the present. And I have attempted to pursue justice – to do justice to the victims – not merely by commemorating their suffering but also by construing the Nuremberg Code 3 as their unwitting legacy. They were subject to coercion, sadism, and torture; the Nuremberg Code celebrates freedom and human dignity.

As medical professionals, we remain unconvinced that we should embrace the code's principles in the spirit in which they were promulgated. It remains my dream that we shall do so. It may only be a dream, but it comforts my nightmares.