

FROM AUSCHWITZ TO INDIAN SCIENCE

Amulya K.N. Reddy¹

Introduction

A World Energy Assessment meeting in Cracow (Poland) a few days ago gave an opportunity to visit the concentration camps at Auschwitz and Birkenau 50 kms away. Brought from all over Nazi-occupied Europe during World War II, about 1.5 million innocent victims, overwhelmingly Jews, either went directly to the gas chambers and the crematoria at Auschwitz and Birkenau, or indirectly via the camps where they were held prisoners until they were too weak to labour.

The tour of the camps, now preserved as a museum, created a completely unexpected feeling.

The scale was so enormous that it is difficult, particularly because the camps have been unpopulated since 1944, to imagine that there used to be human beings here. Human belongings -- toothbrushes, shoes and suitcases -- were piled separately from floor to ceiling in huge rooms, but the aggregate was more reminiscent of factory inputs. Even the enormous mound of human hair was raw material for the manufacture of tailor's lining cloth. If Auschwitz was unbelievable, its neighbour Birkenau located 3 kms away, beggared the imagination. Birkenau was spread over 175 hectares with 300 buildings each capable of housing 1000 inmates. It was a scale-up from the pilot plant demo at Auschwitz with a peak of 20,000 prisoners to full scale commercialisation at Birkenau with 100,000 prisoners in August 1944. The powerful impression that persisted was of detailed engineering resulting in "... the immense technological complex created ... for the purpose of killing human beings."²

The meticulous organisation and rigorous management were characteristic of mega-industries, "gigantic and horrific factories of death". The main gate of Auschwitz displayed the inscription "Arbeit macht frei" ("Work brings freedom"). Perhaps a more apt announcement would have been "Technology completely decoupled from values". Also, one could not help reflecting on the frailty of social institutions and the failure of legal safeguards that sanctioned these horrors.

The Tyranny of Scale

As the scale of killing increases, the technology often tends to become more and more sophisticated -- from knives to guns to machine guns to bombs to gas chambers and crematoria to atomic bombs. Also, with increasing scale, not only does the distance from victims become greater, but also the challenge becomes more and more technical. Burial is sufficient for one body, but for hundreds or thousands of bodies, terms such as "throughput", "air-fuel ratio" and "burning capacity" come to mind.

In Auschwitz, it is obvious that nothing happened spontaneously. Everything was designed and planned. One of Germany's top chemical industries, IG Farben, produced the poison Cyclon B for exterminating people in the gas chambers. Careful experiments were done to

¹ 7/12 Palace Cross Road, Bangalore – 560 020 (India) [Email: amulya1@vsnl.com]

² "Auschwitz -- How many perished", page 11, Yad Vashem Studies, Volume XXI, Jerusalem (1991).

determine the time it would take for a person to be poisoned. An engineering firm designed the crematoria furnaces to process 350 bodies per day in Auschwitz I. So, there must have been engineers preoccupied with the technical problems. Perhaps, like Oppenheimer talking about the atomic bomb, some even thought that the problem was "technically sweet". Or, like the statement made at the Bangalore Kaiga debate in 1989: "Hiroshima provided us with a fortunate opportunity to study radiation effects!"

Decoupling from Values

Once the problem was defined as eliminating hundreds and thousands of people per day, the Auschwitz solution was inevitable. But, who defined the problem and promulgated the order? By and large, it is political decision-makers that define the problem. There was a conference at Wannsee, a suburb of Berlin, on January 20, 1942, at which the Nazi leadership decided in less than two hours on the "final solution" to exterminate the Jews. Ethnic superiority, racial/religious hatreds and fundamentalist views are well-known bases for decisions with far reaching destructive impacts on human beings.

Why was this definition of the problem so widely accepted? There could be several reasons. There was the silencing of the informed and articulate who became the first inputs to the camps. The media and journals were not allowed to reveal the truth. As a result, many can genuinely claim ignorance as an excuse. The most serious problem is the plea of duty and the obligation to carry out orders. Recall the movie "Judgement at Nuremberg" describing the trial of the Nazi judges charged with furthering the extermination of Jews. These judges defended themselves by submitting that they were just carrying out orders. The judgement at Nurnberg was that a human being has to take full responsibility for the consequences of his/her actions and that the excuse of obeying orders is inadmissible.

Apart from the above factors that operate in the case of officials and technical personnel, there is the additional device of taking a top-down macro view (e.g., national security, geopolitical considerations, etc.). In such a macro view, numbers and statistics displace human beings. New proxy words dominate the discussions -- "burning capacity" replaces "the number of corpses burnt", "kilotonnes yield" replaces "kilodeaths", etc.

Functionaries, however, cannot avoid contact with the prisoners and victims to keep the system going. What is overwhelming in Auschwitz and Birkenau is the unbelievable cold-bloodedness of the operation. It appears that the guards treated inmates inhumanly because they believed that the victims were sub-human. Once this belief is propagated and accepted, anything goes -- as in the growing number of examples of ethnic cleansing and genocide (native Americans, Partition, Rwanda, Bosnia, Kosovo, East Timor, etc.).

Auschwitz and Alamogordo-Hiroshima

The tour of Auschwitz ends at the gas chamber and the crematorium. But just before that, near the main gate, is the gallows where Rudolf Hoess, the bestial camp commander, was hanged after a trial.

Is this just retribution? Or, are only the vanquished tried as war criminals while the victors go scot-free?

An equally important question is: how does the development of the atomic bombs at Los Alamos, the test at Alamogordo and the bombing of Hiroshima and Nagasaki differ from the Nazi concentration camps? Of course the Allies in World War II were not driven by the racism of the Nazis, and they were not pursuing a final solution of extermination of a religious group. But with regard to the scale of killing, the harnessing of science and technology, the extent of organisation, the resort to effective management, and the choice of target to maximise annihilation of Japanese civilians, the Manhattan project was like the concentration camps, in fact, even more horrendous in its impact.

Beyond Pokhran to....

What does Auschwitz-Birkenau mean for India? Over the past year and a half, the country had witnessed the scientist-politician nexus underlying the nuclear tests at Pokhran, the use of security arguments to advance party agendas, the jingoism of the scientists, the virtual absence of dissent, the silence of its journals with a few notable exceptions and the obfuscation of reality. For instance, after an initial silence on the subject (as if it never happened), a scientific journal publicised the official/government version of the "kilotonnes yield" of the test bombs but rejected/suppressed estimates of the hundreds of thousands of innocent non-combatants who would be killed if even a primitive atomic bomb were exploded on Mumbai/Karachi.

There are other questions. Are the institutions on the sub-continent necessarily more robust and moral than those in the Germany of the 1930s and 1940s? Are Indian politicians and parties less prone to exploit religious animosities? Are Indian scientists and engineers less eager to get political support for their next ego trip or power play (e.g., neutron bombs because they kill but don't destroy). Once the nuclear-tipped missiles are deployed, are there guarantees against some crazy guy doing some crazy thing? Is it certain that Pokhran will not lead as inevitably to Lahore, and/or Chagai to Mumbai, as Alamogordo led to Hiroshima?

Life affirming values

The claim of the amorality of science is a clever way of escaping responsibility for the horrors that have sprung or can spring from science. For example, the missile developer's statement that "he is only an engineer" and that "his missile can also be used for delivering flowers". The relationship between the scientist (the subject) and the object of scientific study must be such that initial separation (and distance) ends in subsequent unification (and embrace). The suppression of emotion **during** analysis must give way to emotion **after** analysis. The functioning of scientists as individuals, groups and institutions must be constrained and limited by moral strictures and taboos. Otherwise, the isolation of the subject from the object and the removal or absence of emotions and feelings lead inevitably to science becoming the instrument of violence, oppression and evil and viewing people as "things". Science, therefore, is not neutral, but it can be -- and must be -- encoded with life affirming values. The link between science and morality must be re-established.

A crucial safeguard is to insist that, quite apart from the top-down macro view of security, yields, kill-ratios, etc., there must be a bottom-up micro view based on human beings. One must see beyond the numbers and the statistics, one must see children and parents and grandparents, lovers and married couples, siblings, friends and comrades. The Gandhi talisman must never be forgotten: "Recall the face of the poorest and most helpless person ... and ask yourself if the step you contemplate is going to be of any use to him. Will he be able to gain anything from it? Will it restore to him control over his life and destiny?"

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