

Brighter than a Thousand Suns

Dr. Robert Jungk, *Gollancz-Hart Davis (21/-)*.

AT various times in history men have falsely supposed themselves to have invented terrible weapons capable of destroying all life on earth. The scientists Dr. Robert Jungk writes about in *Brighter Than a Thousand Suns* (Gollancz-Hart Davis 21/-) actually succeeded. This book purports to be the moral and political history of these men, most of whom are still alive, and many of whom are still active in their professions.

No one who has read *Brighter Than a Thousand Suns* will be surprised to learn that it has already become a best-seller in Germany. For the central proposition of the book is the failure of the allied scientists alone, to make the correct moral decision, i.e. to refuse to supply their Governments with nuclear weapons. The German scientists, on the other hand, we are informed—on the evidence of none other than the German scientists themselves—resisted this temptation, and "went slow" on the atom bomb for fear of the consequences of turning such an instrument over to the Nazis. "It seems paradoxical", remarks Jungk, "that the German nuclear physicists, living under a sabre-rattling dictatorship, obeyed the voice of conscience and attempted to prevent the construction of atom bombs, while their professional colleagues in the democracies, who had no coercion to fear, with very few exceptions concentrated their whole energies on production of the new weapon".

Jungk admits that neither Professors Samuel Goudsmit nor Niels Bohr, among the most eminent in their field, accept this version of the story. Professor Hans Bethe, now of Cornell, formerly head of the Theoretical Division at Los Alamos, remarked recently in *The Bulletin of Atomic Scientists*: "As far as this reviewer knows, however, and contrary to Jungk's presentation, ethical reasons played only a minor role in their decision not to push the development of the atomic bomb. The decision was mainly on what they believed to be a realistic appraisal of the difficulties: Heisenberg told this reviewer that he had estimated that it would be far beyond the capacity of Germany and likewise the U.S. to develop the atomic bomb during the Second World War. . . . Had the project seemed 'technically sweet' the German scientists might have had a very different attitude". Indeed it would be hard to imagine otherwise. Scientists whose consciences permitted them to remain in Germany when they might have left, and to rise high in the service of their country's war machine, cannot reasonably be suspected of over-delicate moral susceptibilities. These same scientists had been quite content to watch their distinguished Jewish colleagues hounded from their posts at Gottingen and other universities, only a few years earlier. "Only a single one of Gottingen's natural scientists had the courage to protest openly against the dismissal of Jewish

savants", Dr. Jungk informs us in passing, while discussing what he refers to as the "melancholy occurrences" in Germany before the war. It was at this time, he tells us, that "Weizsacker, like so many young German idealists, mistakenly believed at that time that possibly Hitler and his movement, despite certain features of it which Weizsacker himself repudiated, might be the preliminary symptoms of something really admirable, the beginning of a social and religious revival in revolt against the spirit of commerce and arid intellectualism. He made no secret of his hopes in this respect. . . ." Jungk goes on to tell us that subsequently Weizsacker "got over his illusions about National Socialism", though "this fact was only known to his most intimate friends in Germany". Just as well, in view of his role as one of the directors of the German uranium project! Similarly, Heisenberg, another of Dr. Jungk's secret anti-Nazis, became Director of the Kaiser Wilhelm Institute for Physics, succeeding Peter Debye, the Dutch physicist, who escaped to the U.S. after being required either to become a German citizen or to publish a book in favour of National Socialism. Dr. Jungk is forced to admit that "this decision on Heisenberg's part was much criticised by his physicist friends abroad. . . ."

It becomes increasingly clear, of course, that if Dr. Jungk's book was to have been taken as a serious contribution to this subject, his moral analysis should have started in 1933 and earlier (not 1939 and later), with the swift and dreadful moral collapse of the German academics living as they did in the idyllic physical and intellectual surroundings of Gottingen, which Dr. Jungk has so lovingly described for us in the early chapters of the book. This is the first, and in some ways the most crucial centre of moral, psychological, and sociological interest in the whole story—and it is virtually ignored.

In fact, the moment the allied scientists realised the possibility of producing such a weapon, they were bound to go ahead with it, for, as Einstein realised, in a war situation, they were obliged to assume that the Axis powers were as capable as themselves of manufacturing one. Of course, "he acted on the assumption that the U.S. would never use such a bomb for any object other than self-defence against a similar weapon." Fortunately, in the event, they found they had over-estimated German scientific progress in this field—the Germans having of course driven into allied arms nearly all the most eminent scientists in this field.

The irony, of course, was that the bomb was never required to defeat Germany. It was used instead, senselessly and wickedly, to defeat Japan, when it was already well known that Japan was on the verge of collapse. And it is the fact that no attempt was made to show the Japanese what sort of weapon we had, that we find so unforgivable now. It was then, and rightly so, that Einstein and many other scientists who had made this weapon possible, felt they had been betrayed.

Use of the Bomb

The motives that impelled the use of the bomb at this juncture are open to conjecture. The most likely explanation would seem to be that this was the first move in the "cold war", before even the "hot war" had ended. A demonstration and a warning to the Russians of what the future held in store. General Groves, moreover, is described as "being obsessed by one intense fear, that the war would be finished before 'his' bomb could be". He was clearly determined at all costs to use this instrument, over which he had laboured so long, and his voice was an influential one in Government circles. Great responsibility for the final decision also rests with seven scientists appointed in May, 1945 to the Government's atomic energy "Interim Committee". These were Vannevar Bush, K. T. Compton, and J. B. Conant, together with the experts, Oppenheimer, Fermi, A. H. Compton, and Lawrence.

"Arthur H. Compton remembers that the 'scientific panel', to which he himself belonged, was not called upon to decide the question *whether* the new bomb should be used but only *how* it should be used. At this first consultation the four atomic experts unfortunately kept strictly to their limited instructions, instead of suggesting, on their own account or as mouthpieces

of many of their professional colleagues, that the bomb should not be used in warfare".

The outcome was a victory for General Groves. The Committee recommended that: 1, the bomb should be used against Japan; 2, it should be used on both military and civil targets; 3, it should be used "without prior warning of the nature of the weapon". It is interesting to note that it was the Navy's representative on this Committee alone, R. A. Bard, who registered a protest against this third point.

When the news of these recommendations leaked out, a counter committee was formed at Chicago University, headed by James Franck, Szilard and Eugene Rabinowitch to fight these proposals, and they issued a memorandum, afterwards known as the Franck Report, urging the Government merely to demonstrate the weapon on a barren island. This appeal was forwarded by Stimson to the scientific panel of the "Interim Committee" and once more they evaded their responsibilities. "We said", states Oppenheimer, "that we didn't think that being scientists especially qualified us as to how to answer this question of how the bombs should be used or not". It is perhaps significant, that the second time the word "how" is used in this sentence, Oppenheimer really means "whether".

In the years following the war most of the physicists returned to the universities, only to come back to the weapons laboratories once more after the Czech coup d'etat in 1948, the Russian explosion of their own bomb in 1949, the Korean war, and the Berlin blockade. One suspects, however, that the sheer intellectual excitement of working on the formulas connected with the construction of the Hydrogen Bomb, was the chief spur that goaded even conscientious and scrupulous men like Bethe into accepting these posts.

Dr. Jungk's report of the Oppenheimer interrogation is deeply shocking. Oppenheimer had retired from the Atomic Energy Commission in 1952, and devoted himself to lecturing and writing. In 1954 he was suddenly ordered before this investigating committee. What is most shocking about it is that Oppenheimer never summons up the courage to challenge the Committee's right to investigate him at all. Many years earlier he had freely acknowledged his youthful Communist sympathies, so that it was not on grounds of perjury that he was being tried. These were, simply, his judgment that the Hydrogen Bomb, on economic, military and moral grounds, should not be constructed. It was considered that this judgment raised "questions as to his veracity, conduct and even loyalty".

It isn't only that Oppenheimer reveals himself muddled, intellectually and morally, that he fails to make the best case for himself on even his adversaries' terms, it is that he has accepted the enemy's position—the independent, the non-conformist, the intellectual is dangerous. Like Galileo, Dr. Robert Oppenheimer repented of his heresies, but unlike Galileo, he was not sick, nor old, nor half-blind, nor under threat of torture.

What general conclusion, then, can one draw from Dr. Jungk's book? Chiefly, I think, one that is by now fairly obvious, and widely accepted, namely, that the scientist, like everyone else, must accept full moral responsibility for his work. The difference between him and men in most other professions is simply that the fruits of his work are likely to prove more dangerous than theirs and it therefore behoves him to be peculiarly circumspect before engaging in it.

Because of the complexity of his work, he has the additional duty of telling the truth about it, to the layman. For only the scientist in our society understands exactly what he is doing. He is the one man to whom the intelligent and well-meaning layman can look for a truthful exposition of the facts. Deception becomes the more reprehensible when the deceiver has a monopoly of the truth. Thus, in a democratic society, the role of the scientist as Populariser and Adviser, is crucial. Above all, as Hiroshima proved once and for all, the scientists working in the military field must consider well *before* he undertakes it, the possible consequences of his work, for once accomplished, the politicians and the generals will seize the fruits of his labour, and use them ruthlessly in the interests, as they conceive them, of their own country. As Norbert Wiener has impressively written, when faced by a decision of

this type: "In any investigation of this kind the scientist ends by putting unlimited powers in the hands of the people whom he is least inclined to trust with their use. It is perfectly clear also, that to disseminate information about a weapon in the present state of our civilisation is to make practically certain that the weapon will be used. If therefore I do not desire to participate in the bombing or poisoning of defenceless peoples—and I most certainly do not—I must take a serious responsibility as to those to whom I disclose my scientific ideas. I do not expect to publish any future work of mine which may do damage in the hands of irresponsible militarists".

Patriotism is perhaps the greatest temptation. As one scientist has recently pointed out: "While scientists see more clearly than can others the terrible consequences of the use of the weapons they are developing, they see with equal clarity also the possible consequences of their nation being left at the mercy of an enemy equipped with them". This is the real dilemma that faces us in our time.

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