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The Making of the Atomic Bomb

Richard Rhodes

Simon and Schuster,

New York, 1986. 886 pp.

\$22.95 hc ISBN 0-671-44133-7.

Touchstone (Simon and Schuster), New York, 1988.

\$12.95 pb ISBN 0-671-65719-4

Richard Rhodes, a talented journalist, by shrewdly exploiting some relevant archives and others' scholarship on the A-bomb, has written a compelling book of drama and tragedy, of passion and commitment, and of moral lament. It is historical journalism on a grand scale—rich detail, colorful scenes, vivid portraits and gripping vignettes—chronicling the lengthy scientific and political roads that led to Hiroshima and beyond. The book, though narrating a familiar story, has won such major honors as the Pulitzer Prize, the National Book Award and the National Book Critics' Circle Award, and has sold over 35 000 hardback copies.

In these pages, the great and near-great physicists of an earlier generation—Niels Bohr, Enrico Fermi, J. Robert Oppenheimer, Leo Szilard, Edward Teller and Ernest O. Lawrence, among others—often come alive. Scientists will be especially delighted by such sketches and by Rhodes's lengthy (over 250 pages) charting of the 20th-century breakthroughs leading to fission and the chain reaction.

The Making of the Atomic Bomb offers much regret, no villains (except Nazi Germany and possibly General Curtis LeMay) and two physicist heroes: Bohr and Szilard. In 1944 Bohr pleaded, unsuccessfully, with Britain's Prime Minister Winston Churchill and with US President Franklin D. Roosevelt for the abandonment of Anglo-American nuclear secrecy, for informing the Soviets about the research on the bomb, and for moving toward international control before the bomb was used. Szilard, who conceived of the chain reaction and who later pushed the Roosevelt Administration to embark on the A-bomb project, in the war's last year opposed the prospective combat use of the bomb on Japan, pleaded for approaching the Soviets on international control and, like Bohr, warned that the alternative was a ruined

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peace and a Soviet-American arms race. Bohr and Szilard were "losers" in history, but they have become prophets of missed opportunities to some historians, and Rhodes weaves much of his skillful narrative around these familiar themes.

Rhodes's conception of history as a tale built on arresting anecdote, lavish detail (sometimes embroidered beyond the evidence) and colorful personality guarantees a good "read." But this narrative strategy also has its costs. It neglects analysis, often sacrifices the important to the vivid, and encourages an uncritical use of sources.

Why, according to Rhodes, was the A-bomb used? His answer rambles. At best, it can be partly pieced together: The bomb was used "to pay for itself, to justify to Congress the investment of \$2 billion, [and] to keep [high-ranking officials] out of Leavenworth Prison." An additional explanation, Rhodes suggests, is provided in Teller's July 1945 argument (in a letter to Szilard) that "actual combat-use might even be the best thing," for it would make the world face the facts of the A-bomb and "convince the world that the next war would be fatal." Rhodes also adds other explanations—America's insistence on Japan's unconditional surrender, the evils of the nation state and the barbarism of World War II, with its acceptance of mass killing.

In view of the vigorous scholarly disputes since the mid-1960s about whether the United States dropped the bomb primarily to intimidate the Soviets, it is disappointing that Rhodes does not address this crucial issue directly. That would require research he did not do. At times, he does intrude into his story small pieces of evidence that bear on this problem, but then he slides away to relate another event in great detail—say, the Trinity test of 16 July 1945.

To set the context for the decision to drop the A-bomb on Japan in August 1945, Rhodes rightly dwells on the earlier conventional bombing of Axis cities and on Secretary of War Henry L. Stimson's pained laments about this practice. But the story of the aged Secretary's agony about the mass killing of noncombatants—a violation of an earlier code of ethics for conducting war—is far more complex and subtle than Rhodes seems to understand. He misses important themes and evidence, partly because he did not do the necessary research in Stimson's private papers and in air force archives, but relied on published studies that quoted or summarized only pieces of the archival record.

After the US Army's air forces, in March 1945, incinerated 16 square miles of Tokyo and killed about 70 000 Japanese, Stimson managed (through self-deception, I think) not to recognize in this assault the mass killing of noncombatants. In mid-May, Stimson could honestly, but incorrectly, tell President Truman that he was planning to hold the air force "to 'precision bombing.'" Stimson went on to tell Truman: "The reputation of the Unit-

ed States for fair play and humanitarianism is the world's biggest asset for peace in the coming decade. I believe that the same rule of sparing the civilian population [in Japan] should be applied as far as possible by the use of any new weapons."

Two weeks later, at a key meeting with high-level advisers (the blue-ribbon Interim Committee and its Scientific Advisory Panel of Oppenheimer, Fermi, Lawrence, and Ar-

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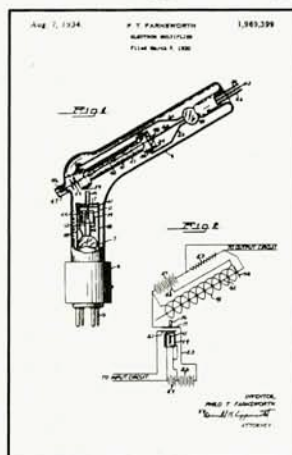
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thor H. Compton), Stimson "expressed the conclusion, on which there was general agreement, that we could not give the Japanese any warning [about the A-bomb], that we could not concentrate on a civilian area; but that we should seek to make a profound psychological impression on as many of the inhabitants as possible [by dropping the bomb on] a vital war plant . . . closely surrounded by workers' houses."

These minutes from the Interim Committee warrant close analysis. Certain themes stand out: no *concentration* on civilian areas; bombing for psychological impact; the choice of a dual target (a factory and workers' houses); and no acknowledgment that noncombatants lived in those houses. This was indeed the doctrine of terror bombing, including the intended mass killing of noncombatants. Stimson had succumbed to this new ethics of war—targeting a city partly to kill its civilians.

But the Secretary, ensnared in moral contradictions he may not have recognized, also continued to emphasize the need for conventional "precision" bombing against Japan. On 6 June 1945, in talking with Truman about bombing Japan, Stimson explained that he was seeking to prevent area bombing for two reasons: He did not want America to develop the reputation Nazi Germany had by then already earned for atrocities; and he was concerned that if Japan's cities were bombed out, the A-bomb could not show its power.

Truman's own understanding of the A-bomb targets is also puzzling—though Rhodes, partly because he never worked in Truman's papers, misses this issue. At Potsdam in mid-July 1945, after Truman and Stimson discussed the use of the bomb, the President wrote in his diary, "I told [him] to use it so that military objectives and soldiers and sailors were the targets and not women and children." But, of course, women and children were among the intended targets: They lived in "workers' houses."

Was Truman—like Stimson sometimes—engaging in self-deception? Or did Stimson not inform the President about the *dual* target (a factory surrounded by houses)? A thoughtful analyst, seeking to understand why and how the A-bomb was used, should have wrestled with this problem.

After the war, Truman never claimed that the Secretary had misinformed him about what the targets Hiroshima and Nagasaki represented in terms of human lives. Instead Truman preferred—well after the bombings—to describe both cities as

"entirely devoted to war work" or "almost exclusively in war work." Yet the President knew this was untrue. He had told his Cabinet on 10 August, right after the A-bombs had obliterated the two cities, that he didn't want to wipe out another 100 000 people and kill "all those kids."

Had Rhodes examined the various files of the Joint Chiefs of Staff, he would also have discovered that American military planners in the summer of 1945 did not estimate that the invasion of Japan would kill a half-million Americans (as Truman and others later claimed); rather, only about 20 000 to 46 000 fatalities were anticipated. But such pre-Hiroshima military estimates could not deter the use of the A-bomb, because it was deemed a legitimate weapon against hated enemies, who were also "yellow"—no policymaker wanted to risk even a few thousand American lives to try to save many more Japanese lives.

Like some other writers, Rhodes trustingly believes Truman's postwar claims that he had convened a special meeting at Potsdam of Stimson, Secretary of State James F. Byrnes and the military chiefs to decide *whether* to use the bomb. That meeting, like the claim of a half-million lives, was a postwar fabrication. If Rhodes had examined the archival diaries for July 1945 of the men at this alleged session (at least four diaries are involved), he would have found that none of them mentioned it. The meeting never occurred.

Had Rhodes done more research, he might also have been tempted to place Harvard President James Conant, a major wartime A-bomb adviser, in or near the pantheon of heroes with Szilard and Bohr. Independently of Bohr, and well before Szilard, Conant in May 1944 sketched his own plan (more detailed than Bohr's) for international control of atomic energy. Conant foresaw that the world would face two stark alternatives: a postwar nuclear arms race with Russia and "in the next war [the] destruction of civilization, or a scheme to remove atomic energy from the field of conflict."

Much of *Making* focuses on the scientists, and in the process Rhodes makes a howler of an error: He incorrectly places in mid-July 1945, right after the Trinity test, the now-famous mid-June 1945 recommendation by the advisory panel of Oppenheimer, Fermi, Lawrence and Compton opposing a noncombat demonstration of the bomb and endorsing actual combat use. There was no such mid-July meeting. How Rhodes could have erred so badly on this crucial

matter is indeed puzzling, since some earlier writers, as well as his own lengthy narrative, examine the great impact of the Trinity test on the scientists. Had he not committed this error, he might have discovered that Oppenheimer, in a 1957 interview, speculated briefly that after the dramatic Trinity event a noncombat demonstration should have been reconsidered: "Perhaps a bomb dropped high over Japan by parachute," the interviewer paraphrased Oppenheimer, "might have lighted up all of Japan and provided a convincing demonstration, but by that time [July 1945] it was too late: There was no parachute and besides the whole mechanism for use had been set in motion."

In June (not July) 1945, Oppenheimer and his three physicist associates, with Lawrence the last member to yield, recommended dropping the A-bomb on Japan. They told Washington, "we see no acceptable alternative to direct military use."

That was the counsel that Stimson and others undoubtedly anticipated. By then, these physicist advisers were endorsing, and helping to implement, a longtime assumption: The bomb should be dropped on the enemy. They were not dissidents, like Szilard, willing forcefully to challenge that assumption.

Emphasis on the activities, and roles, of the Manhattan Project scientists raises a larger set of questions. Would Stimson, Byrnes and Truman have decided not to drop the A-bomb if Oppenheimer and his three associates had opposed its use? Undoubtedly not. By 1945 the momentum was too great and the power of accepted assumptions too overwhelming to reverse the course of events. American political leaders wanted to use the A-bomb. To them, it seemed to offer only benefits (including intimidation of the Soviets), not liabilities.

Upon learning of the atomic bombing of Hiroshima, Szilard scrawled a painful note to his future wife. "Using atomic weapons against Japan is one of the great blunders of history. Both from a practical point of view on a 10-year scale and from the point of view of our moral position. I went out of my way and very much so in order to prevent it."

For Oppenheimer, in contrast, his only recorded response on Hiroshima day was satisfaction: "Everybody is feeling reasonably good about it and I extend my heartiest congratulations," he told General Leslie Groves, director of the A-bomb project. Later Oppenheimer would speak of the physicists having known sin; and much

later than that, in 1965, he would say that he didn't mean by sin "the deaths that were caused as a result of our work. I meant the sin of pride. We had the pride of thinking we knew what was good for man."

Such comments, reaching beyond Rhodes's book, leave continuing questions about Oppenheimer: What did he actually believe and feel? Was Oppenheimer perhaps so convoluted he did not know or would not say? Perhaps, often confused about self, he chose further to conceal it—an enigma who out of defensiveness and pride further wrapped himself in a second enigma. For at Trinity, we know from his *only* words recorded there, he spoke of the successful test's having "somewhat restored... my faith in the human mind." Did he also, as he *later* claimed, think during this first atomic explosion of the words from the Bhagavad-Gita, "I am become Death, the destroyer of worlds"? Frank Oppenheimer believed his brother said something less lofty: "It worked." I. I. Rabi recalled much later that Oppenheimer, right after the blast, came in and "his walk was like *High Noon*... this kind of strut. He'd done it."

In late September 1945, Oppenheimer and his three associates held their last formal meeting as the Scientific Advisory Panel to put together recommendations on postwar nuclear policy. Because Rhodes apparently never used the files of Lawrence and Compton, he did not discover that these four men, in the aftermath of Hiroshima, gave startling advice on the H-bomb. Summarizing their sentiments in a secret memo on 27 September, Compton informed Washington: "We feel that this development [the H-bomb] should not be undertaken primarily because we should prefer defeat in war to victory obtained at the expense of the enormous human disaster that would be caused by its determined use."

Such moral counsel did not prevail. Nor, amid the developing cold war, did Lawrence, Compton, Fermi and possibly Oppenheimer desire by 1947-48 to adhere to such advice. In ways more subtle than Rhodes understands, the making of the A-bomb helped build the jagged path that led nine years later to the H-bomb.

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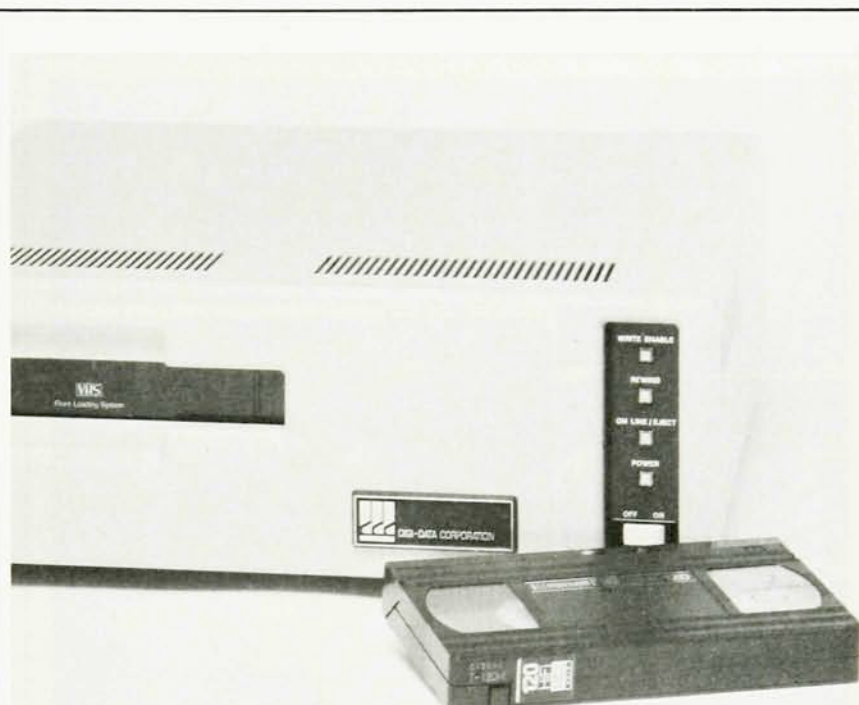
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