

## REVIEWS

**The Unanswered Question** by Thomas Powers, a review of Michael Frayn's *Copenhagen*; L.A. Times, May 25, 2000.

Thomas Powers' review of Michael Frayn's *Copenhagen* is a fine overview of what he and Frayn fanaticize to have been the mysterious circumstances of the famous meeting, in September 1941, between Niels Bohr and Werner Heisenberg. But there is no mystery regarding the purpose and course of that meeting. The mystery is why Powers and other authors persist in blinding themselves as to the actual purpose and course of that meeting and insisting it is "The Unanswered Question". Contemporary documents and statements of persons closest to Bohr have answered the question, long ago. They make it clear that the Copenhagen visit was an intelligence mission approved and arranged as a "cultural visit" at the highest levels of the Reich.

Powers and the others who have constructed, literally, a Bohr/Heisenberg "industry" give lip service to the intelligence facet, but avoid recognizing it. They owe their livelihood to Robert Jungk's 1956 *Brighter than a Thousand Suns*. He spoke for Heisenberg's close friend Carl von Weizsacker, the progenitor of the Copenhagen myths. In all fairness, Jungk was deceived; eventually, he came to recognize and confess that. In a December 1988 Berlin lecture, after reading more accounts, Jungk did confess his great mistake. Not long after that, he wrote to me that "it is true that Weizsacker misled and used (Jungk's emphasis) me to propagate his version of the German A-bomb history. But you [in *The Griffin*, Houghton Mifflin, 1986] make it sound as if that lie came from me, whereas I was made to believe in it by somebody I have since learned to see as an unscrupulous opportunist."

There was no moral dimension to the conversation, as Jungk had written. Immediately after the meeting, Bohr told his son Aage. In 1967, Aage wrote that Jungk's account had "no basis in the actual events" (*Niels Bohr*, North Holland Publishing Company, 1967). So, what did transpire? Robert Oppenheimer was the first person Niels and Aage Bohr saw at Los Alamos after their escape from occupied Denmark. In a series of lectures, given in 1963 and 1964, Oppenheimer said, "Heisenberg and Weizsacker came over from Germany... Bohr had the impression that they came less to tell what they knew than to see if Bohr knew what they did not. I believe it was a standoff" (*New York Review of Books*, December 17, 1964).

Clearly the "visit" was an intelligence mission, nothing more or less. But, why at that time? Credit Dr. Paul K. Schmidt, the clever and ambitious head of the German Foreign Office's Press Branch. He was a favorite of the Foreign Minister, Ernst von Weizsacker, father of Carl von Weizsacker. The Foreign Minister was impressed with the speed Schmidt exhibited in obtaining American newspapers via the Lisbon photographer contracted to microfilm the papers for the American Embassy. In similar manner did the Press Branch reach Schmidt from other countries.

On September 4, 1941, Carl von Weizsacker received, from the enterprising Schmidt, a published report from a Stockholm newspaper to the effect that: "in the United States scientific experiments are being made on a new bomb... The material used in the bomb is Uranium, and if the energy contained in this element were released, explosions of heretofore-undreamed power could be achieved. Thus a five-kilogram bomb could create a crater 1 kilometer deep and 40 kilometers in radius..."

That was an astonishingly accurate statement for that period. It reflected more of the British than the American thinking--and was more accurate than Heisenberg's thoughts, at the time. Carl von Weizsacker immediately forwarded the Schmidt report to the Abwehr, the intelligence arm of the German High Command. The next day, he sent the report to Education Reichsminister Bernhard Rust, who was funding the physicist's research. Already, von Weizsacker had been writing, for Rust, a report on nuclear research in the United States. A fortnight later, Heisenberg had his now-famous chat with Bohr, who refused to meet with Carl von Weizsacker, waiting outside.

In October, Carl von Weizsacker's father was still asking Schmidt for reports on the American uranium program. Ironically, the program did not receive a full go-ahead from President Roosevelt until December 6, 1941--the day before Pearl Harbor.

Six months after the Copenhagen meeting, a young associate of Bohr's, Christian Moeller, visited Lise Meitner in Sweden. She wrote to the Nobel Laureate Max von Laue:

I had Dr. M with me one evening and that was very nice and pleasing. He told me much about Niels and the institute, and most was comforting and satisfactory. Half amusing and half depressing was his report about a visit of Werner and Carl Friederich.... I became very melancholy on hearing this; at one time I had held them to be decent human beings. They have gone astray [Meitner papers; Churchill College].

Had the two spoken of atomic bombs, no physicist would have been surprised. Had they discussed control of the bomb, Meitner would have been pleased. "They have gone astray" because Heisenberg asked his old friend and teacher to betray the Allies who would free his beloved Denmark from the yoke of Heisenberg's masters. Could there have been a more treacherous betrayal? Whether or not Heisenberg talked about atom bombs, whether or not he raised moral issues, the betrayal of a thus-far enduring friendship was paramount. The perceived treachery, more than any other factors, real or imagined, was cause enough for the friendship to "have gone astray".

Arnold Kramish  
2065 Wethersfield Court, Reston, Virginia 20191  
Tel: (703) 620-2982; Fax: (620-5288)  
kramish@post.harvard.edu

***Atomic Fragments: A Daughter's Questions*** by Mary Palevsky

University of California Press, Berkeley & Los Angeles, 2000; unpriced; 289 pages

Every author who writes about the Manhattan Project and the decision to use nuclear weapons against Japan views the events through his own prism, colored by his own experiences and beliefs. Fairness requires me to state up-front that my father was assigned to command a Seabee unit in Operation Olympic (the planned U.S. attack on the Japanese homeland), and because Japan surrendered when it did, he didn't have to go. That, alone, would be enough to make me approve of the bombing of Hiroshima and Nagasaki, but a great deal more reading in the past five years has reinforced that judgement.

The U.S. government has finally declassified the decrypted Japanese communications from the months leading up to August 1945, and those messages show unambiguously that the Japanese military had every intention of prolonging the war and retained the capability to do so, at enormous cost to the Japanese people. Herbert Bix's masterly study of the emperor in his book *Hirohito* shows conclusively that Hirohito was a hands-on commander-in-chief and a leader of the war faction well beyond the date when revisionist historians concluded, without access to internal Japanese documents, that he had urged peace but was frustrated by the militarists.

My prejudices having been noted, I can proceed to Mary Palevsky's memoir of her quest for answers and opinions about her parents' work at Los Alamos. Physicists remember her father, Harry Palevsky, as a top experimentalist at Brookhaven National Laboratory and an early leader in the Pugwash movement; her mother, Elaine Sammel Palevsky, had a bachelor's degree in physics from the University of Chicago. The two met and began dating at the University of Chicago's Metallurgy Lab and married in Santa Fe, New Mexico just nine days after the Trinity nuclear test. We are accustomed to books by and about the men who were the top echelon at Los Alamos; the Palevskys were in the great middle group, working on electronics (he) and optics (she), and for that perspective alone their daughter's book is worth purchasing.

The new Palevsky family made useful contributions to the bomb, but neither was a great supporter of its use in combat after the German surrender. Both Palevskys supported the Franck Report and its suggested option of a demonstration of the bomb on an uninhabited site, an idea ruled out by the government, with Robert Oppenheimer in concurrence, for a myriad of good reasons with which many still disagree--foremost among them Edward Teller.

Mary Palevsky's greatest inheritance from her parents was her quest to bridge the generations from the scientists at Los Alamos to their children, most now far older than their parents were in the crucible that was Los Alamos during World War II. Rather than simply report on her own feelings about the bomb, the peace movement, and the intervening fifty years, Ms. Palevsky sought out the surviving leaders of the Manhattan Project to interview them and record their own views, pro, con, and ambiguous. Her decision to do so has done physics, physicists and history a great service, for we hear, almost unfiltered, the voices of the men whose research shaped the strategic environment of our own day.

Thanks to Mary Palevsky's work we have Edward Teller in his own words discussing a "demonstration" of the atomic bomb over Tokyo Harbor, a blast at 6:00 AM and six miles altitude that would kill nobody and would merely blind those who were looking straight at it. Palevsky also presents Harold Agnew's blunt dismissal of the idea because six miles was at the service ceiling of the B-29, and there would have been no way for the aircraft and crew to escape if the burst were high enough not to affect the ground. Since Teller recommended that the demonstration come without warning, one may also wonder how many influential Japanese would actually have seen it at six in the morning, his favored time because few people would be about.

More important for history are Bethe's remarks. Hiroshima and Nagasaki, Bethe believes, were the right

decision in July and August of 1945; a demonstration without casualties would have been ineffective because “I think you had to see the center of Hiroshima leveled--completely destroyed. ...The victims of Hiroshima died so that other people could live,” a sentiment with which this reviewer is in full agreement. And lastly, most importantly, that Hiroshima and Nagasaki can never be repeated in a future war because nuclear use will escalate out of control, “the destruction of both countries.”

I have walked the dry lakes and the tunnels of the Nevada Test Site periodically since my eighteenth year, seen close hand the buildings and other objects exposed to nuclear blasts, and have been exposed all my life to pictures of nuclear tests and the devastation of Hiroshima and Nagasaki. I think you have to see the destruction first hand.

Palevsky also presents close looks at the goodness and talent of Phillip Morrison and Robert R. Wilson, the self-righteousness of Pugwash founder Joseph Rotblat, and the brilliant analysis of scientist-diplomat Herbert F. York. It is good to have these informal, oral commentaries, even edited for publication, for they illuminate the work and views of Palevsky’s subjects who helped shape the world of 2001. None of these men is young; Bob Wilson died shortly after Palevsky spoke with him. Palevsky should make her recordings available to an oral history project such as those of the AIP.

Mary Palevsky poses elegantly her own question, one undoubtedly shared by many of those who form the nucleus of today’s anti-science and anti-technology movements: “Why was it, I wondered, that I had this almost blind reaction against scientists working in defense? I thought of York and his scientific colleagues who, in addition to doing their research, have dedicated their lives to using their technical expertise for what they deeply believe is the good of the nation.”

Palevsky’s *Fragments* is a useful and important contribution to understanding the origin and the central problems of the nuclear age. I recommend it despite some serious flaws: digressions into personal experiences of little relevance, an annoying tendency to fragment her narrative with interspersed short pieces, and most infuriating, a failure to answer her own poignant question.

Peter D. Zimmerman  
Past Chair of FPS,  
Former State Dept Arms Control Science Advisor  
peterz@erols.com

### **Sleeping with Extra-Terrestrials: The Rise of Irrationalism and Perils of Piety**

By Wendy Kaminer. Pantheon, New York, 278 pages, \$24.

I offered to review this book, because its title gave me the impression it would describe *and explain* the hold of pseudoscience on the American public. This hold seems irrational since that public has had more formal education in science than any other public, past or present. I also hoped for clues to the cure of this malevolent epidemic of irrationality. Or is it an epidemic? I sought information as to whether it really has been growing, as would be expected of an epidemic, and as many of my colleagues believe. I found a quite complete description of the current state of irrationalism in public and private life, in church, state, the “health professions, and the web. But I found no remedies, little comparison with past or other present societies, and no “whys.”

Perhaps this concentration on the “what” -- the phenomena -- while ignoring the “why” is a necessary first step. This is much in the spirit of Galileo’s admonition to concentrate on getting the “what” right before attempting the “why,” which was the beginning of modern science. But I suspect that many of the readers of P&S are already familiar with the phenomena, because of the concern shown by joining the Forum. They, like myself, are really seeking the explanations.

Most scientists who have been in the public arena, and had experiences similiar to mine when I shared a platform with a woman who had been abducted by extra-terrestrials and taken for a UFO joyride, will find most of this book sadly familiar. The anecdotes -- and that’s all there are here -- are well written and presented with overwhelming detail. Rationalists will accept all that is said here; anti-rationalists will dismiss it. Neither will understand the lengthy set of irrational phenomena. The latter have no need, even a repugnance, for “understanding” of the type advocated by the former. Rationalist readers will be convinced, if they aren’t already; anti-rationalist readers will maintain their convictions.

Chapter 1 is one long complaint (justified, I think) about the unfairness of the treatment of atheists by government and society. Kaminer is so into personal responsibility that she refuses to consider any reasons (hence understanding), environmental or genetic, for the failure of responsibility. In chapter 2, the rise of the “Christian

right”, against liberal Christianity and secular humanism is described. She points out that the teaching of creationism, *in the public schools*, is wrong, not because it is bad science but because it is sectarian religion (p.76). Chapter 3 discusses the opposition between “Christian Right” exclusivity and the inclusivity of “New Age sects while Chapter 4 is devoted to the worship of charismatics, and the alliances between “pop-culture” and religion and between feminism and “New Age”. She is very explicit about the role of gurus and their misuse of science in, e.g., the “war on drugs.”

The author does raise an important point, in passing, not previously obvious to me: the cross-over from “New Age” thought to membership in the militias, the relation between all-loving cults and weapons based, all-encompassing suspicion and hatred (p.128). She also makes some very good points about the difference between legal and scientific goals (p.187) and gives a very nice definition of “rationalism” (p.190).

Kaminer condemns the irrationalist for argument by exclamation and repetition, but then engages in it herself: “...you cannot love someone you’ve never met....you cannot love some one with whom you have no actual relationship...” (p.132) She never defines “junk science”, though she has a whole chapter (5) with that title. As she eventually admits (p.187). junk science seems to be that which results in displeasing her biases (which I share!). Scientists will accept her demand for reasoned dismissal of irrationalism; it is doubtful that non-scientists will. Chapter 7, “Cyberspacy”, posits that hypertext destroys logic and that cyberspace replaces God.

There is a great deal of repetition between chapters. I assume they were originally written independently for different journals and it shows. Still, each chapter is separately fairly worthy in both content and writing. Giving up on the search for understanding junk science and its prevalence, there is a lot of good stuff here. One example is the defense of free speech versus “political correctness” in “The Therapeutic Assault on Reason and Rights” (Chapter 6). Another example is the tension between freedom and safety, based upon the writings of John Dewey and H.L. Mencken, in “The Strenuous Life” (Chapter 8, the last chapter).

This book is less a study of irrationalism than an extended vindication of (the author’s own) atheism and a harsh critique of religion and cult. She writes a great deal about the virtues of rationalism, but doesn’t display its power to, for example, deal protectively with our environment, internal and external. She doesn’t analyze rationality, what it does, or what it requires. I’ll keep looking for a study of “pseudoscience”.

*Alvin M. Saperstein*  
*Physics Department*  
*Wayne State University, Detroit, MI 48202*  
*ams@physics.wayne.edu*