Responsible Technoscience: The Haunting Reality of Auschwitz and Hiroshima

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ABSTRACT: Auschwitz and Hiroshima stand out as two realities whose uniqueness must be reconciled with their inevitability as outcomes of highly rationalized processes of technoscientific progress. Contrary to Michael Walzer's notion of “double effect”, whereby unintended consequences and the particular uses to which warfare may lead remain outside the moral purview of scientists, this paper endorses the commitment of the Society for Social Responsibility in Science to argue that members of the technoscientific community are always responsible for their work and the eventual uses made of it. In what follows four related views are outlined pertaining to modern situations within which the technoscientific community operates, so as to highlight the urgency of infusing a sense of responsibility for the products of their activities into this community. A provisional “code” is suggested that may serve as a guide for increased personal responsibility of individual technoscientists (academic scientists and industrial engineers).

1: Background

The commemoration in 1995 of the anniversary of two major events of World War II, the liberation of Auschwitz in January 1945 and the dropping of the atomic bomb on Hiroshima in August 1945, invites us to use these events as case studies for self-examination. I focus here only on the ‘technoscientific’ facets of these two events, and not on the entire historical background of the rise of fascism, the period between the two World Wars, and the circumstances surrounding World War II.1 Furthermore, my concern is not with the relationship between science, technology, and politics in terms of power-structures and capitalist industrialism, but rather with the self-policing functions of the technoscientific community. Finally, as the following four brief...
outlines illustrate, though laudable intentions may be ascribed to this community and its cultural ascent, it remains painfully inept when assuming responsibility for horrible events, such as gas chambers in Auschwitz and atomic bombs in Hiroshima and Nagasaki.

II: Technoscience

Science, technology, and engineering are not separate activities undertaken in separate communities; instead, they influence and enhance the development of each other in fundamental ways. For example, technical instruments are crucial for theoretical breakthroughs, while a conceptual background is essential for engineering applications. It therefore makes sense to speak of their constellation in terms of technoscience, as Jean-François Lyotard did in 1982:

In the present epoch, science and technology combine to form contemporary technoscience. In technoscience, technology plays the role of furnishing the proof of scientific arguments; it allows one to say of a scientific utterance that claims to be true, "here is a case of it." The result of this is a profound transformation in the nature of knowledge. Truth is subjected to more and more sophisticated means of "falsifying" scientific utterances.²

Now of course the combination of the terms science and technology into technoscience is still explained here in traditional terms — technology is the implementation of science, a form of testing scientific knowledge — and not as a blurred site of knowledge production, that is, a site wherein one cannot do the one without the other, as Bruno Latour and Steve Woolgar argue.³

Technoscience, as the constellation of science, technology, and engineering is best understood in terms of the activities of members of a community. Whether one follows the descriptions of Robert Merton,⁴ Michael Polanyi,⁵ or Thomas Kuhn,⁶ the appreciation of the activities of members of the technoscientific community helps society demystify technoscience. What informs the shift from talking about technoscience as such to the activities of the technoscientific community is the realization that we are dealing with humans and their creations. Reminding ourselves that there is a human face attached to technoscience helps us recognize the inherent fallibility of technoscience and the need for ongoing critical evaluations and revisions.

The technoscientific community is engaged in research and development activities the scope of which may elude individual members, especially in projects termed Big Science, like the Manhattan Project. The scope of a project may be so vast that it raises two related problems: (1) those involved in research may not be those involved in development, and (2) within either research or development each member’s contribution will not be fully appreciated and comprehended by every other member. Though the general contours of the project may be formulated for the benefit of all participants at different stages, the details of each stage are known primarily by those directly involved in that stage.

The work of the technoscientific community, from the inception of ideas out of curiosity or because of particular incentives (win a war, patent a discovery, eliminate a disease, or make money) to the implementation of these ideas by industry or