

coined the once-fashionable word "cybernetics") and for his autobiographies as an ex-infant prodigy and misunderstood genius. Yet Wiener was, is and always will be great for his mathematics, which was inventive in harmonic analysis and pioneering in its applications to stochastic processes and communication theory. He is the eponym of the Wiener-Hopf method the Wiener-Hermite representation, the Wiener filter, the Wiener-Kinchine process and the Wiener measure. He proved Tauberian theorems. Norman Levinson in his perceptive and humane biographical article recorded these achievements (as did the other authors of the articles in the January 1966 Wiener memorial issue of the *Bulletin of the American Mathematical Society*).

In his introduction to *Invention*, Steve Heims (who wrote a biography of Wiener in 1980) writes that the book is "a brief, pleasant and brilliant introduction to the history of invention, as suitable for the general reader or student today as it was when written." Wiener himself wrote in the preface that "if the book has any value at all, it is to call people's attention to what is happening in the intellectual world and the world of invention, and to call their attention to things fundamentally for the purpose of getting them to take a definite attitude towards what I consider to be the unfortunate trends of the present day." Yet the history and sociology of science, as well as the world of science itself, have developed a lot since 1954, when Wiener wrote the book. (Shortly thereafter, he decided not to publish it—for complex reasons only partly explained by Heims.) Perhaps if he had revised the manuscript to correct some details and tighten some arguments, the book would in his lifetime have become a valuable introduction to the sociology of scientific discovery and technological invention. But I have been unable to detect in the book any substantial idea that is new today, and I must regretfully conclude that the book comes too late.

This having been written, I am happy to add that *Invention* is lively with anecdotes from a great variety of sources. It is also a tribute to the foresight, wide knowledge and deep understanding of its polymath author. *Invention* is a wandering, rather personal account of the history and sociology of discovery and invention, touching on many issues that are of concern today, including exhaustion of raw materials, overpopulation, the human race's need for invention, big and little science, the short-term aims of capitalism versus the long-term needs of science, and the social status

of the scientist. It is a rewarding book for those who still esteem Wiener, and it will be enjoyable for the many who have never heard of him.

PHILIP G. DRAZIN
University of Bristol
Bristol, England

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