



TOWARDS A SOCIOLOGY OF SCIENCE AND TECHNOLOGY

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It is argued that in view of the urgent need which is currently felt in Europe for "new creative research", in response to the challenge emanating from the United States, Japan and the Soviet Union, it is necessary to acquire more insights into the way science is pursued in society and into the structure of the "community of scientists". One of the initial observations is that the "sociology of science", which is actively pursued in the United States and with which are associated the names of, among others, R. K. Merton, Th. S. Kuhn, J. M. Mulkey and J. Agassi, still constitutes a largely unexplored territory in Europe.

I would like to direct attention to the metamorphosis of scientific pursuit after World War II. Nowadays science bears upon society more strongly than ever before and it is 'therefore' the task of the sociologist to account for the changes in behavioural patterns resulting from this.

If the question is raised as to the fundamental mutations which have occurred since World War II, the first point to be made concerns the interdisciplinary integration and synthesis of the sciences, subsumed under the term "synergetics", the product of this kind of activity being called "serendipity". The opening up of new fields of research situated between the established disciplines in the period between 1940 and 1970 caused new disciplines to emerge, such as : information theory, cybernetics, ergonomics, bionics, the theory of games, operations research, etc. Space research is to be considered as the supermodel of synergetics and serendipity. The need for this new approach has long been felt and emphasized by prominent scientists, but rendered difficult by the existence of several barriers.

Bridging the gap between the natural and the social sciences results in a new discipline, viz. "technology", defined as a science of action, based on scientific knowledge. There is frequent confusion of the notions "technology" and "technics", especially in Anglo-Saxon usage.

Attention should be paid to the transition after World War II from industrial to post-industrial society (Daniel Bell, Jean-Jacques Servan-Schreiber), the concept "welfare state" and the way this state is experienced, and the transformation of the world from an "anisotropic" to an "isotropic" state.

With regard to the "American approach" to the sociology of science, attention should be paid to Derek de Solla Price and his analysis of a "scientific apocalypse"; the psychological profile of the scientist (Barrow); the apical years of creative versus original achievement, the phenomenon of scientists turning into administrators (Marwick); the inflation of scientific publications ("publish or perish"); the exchange of information between scientists through informal networks ("the invisible colleges"); the hierarchy within the university in the U.S. and, finally, the well-known "Matthew effect in science", introduced in 1966 by R. K. Merton, one of the pioneers of the sociology of science in the U.S.



