French Science Policy

Le Pouvoir et la Science en France. PIERRE PAPON. Editions du Centurion, Paris, 1978. 316 pp. Paper, 65F. "Faire Notre Histoire" Propositions.

In this overview of French science policy, Pierre Papon notes on several occasions the narrowness of the intellectual perspectives of French scientists, the lack of interaction among research institutions, and the fragmentation of public decision-making for R & D, features he holds largely responsible for many of the failings and disappointments of contemporary French science and technology. Papon's own career is not, however, a good illustration of the situation he deplores. As professor at the Ecole Supérieure de Physique et Chimie Industrielles in Paris and director of a laboratory affiliated with the Centre National de la Recherche Scientifique (CNRS), he is acquainted with the strengths and weaknesses of his country's efforts in both basic and applied research and equally familiar with the administration of research in universities, industry, and the major public laboratories. Moreover, as adviser to the Socialist Party on research policy and a former member of the "committee of wise men," the highest official organ giving science policy advice to the French government, Papon manages to be both a member of the R & D policy establishment and a critical observer of it.

These qualifications are put to good use in *Le Pouvoir et la Science en France*, a well-informed, comprehensive review and measured critique of French science policy. The book follows the now standard format in case studies of national science policies: a historical introduction tracing the institutional development of science and technology and the growth of government interest and support, chapters on university research, big science, and industrial R & D, an analysis of science-policy-making institutions, and an examination of efforts in international scientific and technological cooperation. These chapters provide an excellent, succinct introduction to French R & D policy even if they do not add appreciably to the analysis contained in Robert Gilpin's still excellent if now somewhat dated *France in the Age of the Scientific State*. In contrast, the final two chapters, where questions of social responsibility, democratic decision-making in science policy, and the limits of autonomy of modern science are raised, lack focus and direction.

Papon is not content to be a passive observer of his country's efforts to support and guide R & D, but makes several suggestions for improvement. In particular, he comes forth as a strong advocate of forecasting, planning, and comprehensive policy coordination, open debate of scientific and technological options among government officials, parliament, scientists, industry, and citizens, more imaginative political leadership, and a more forceful effort in European cooperation. One may question, however, whether the reforms he proposes are workable, adequate to deal with the problems considered, and mutually compatible. It is surprising to read, with respect to the country that has gone furthest among Western industrialized nations in the planning and coordination of research policy, both that these efforts have largely failed and that the situation can be remedied only through reinforced central control and longer-term, more comprehensive planning efforts. In his analysis, Papon fails to draw the full implications of the intrinsic difficulties in science and technology planning, the problems involved in making trade-offs and establishing priorities among disparate areas of R & D activity, and the dangers of making costly, irreversible mistakes when decision-making is highly structured and centralized. Similarly, in a country where scientists' demands on government tend to be narrowly corporatist and articulated almost exclusively through institutional channels and professional unions, it is difficult to see how their increased participation would make science policy more flexible, farsighted, coherent, and responsive to emergent needs. Papon also decries the almost complete absence in France of public debate and parliamentary intervention in decisions on science and technology. Yet it is not immediately clear how the greater involvement of social and political groups, however laudable in itself, can be made compatible with the kind of rationalistic planning the author favors.

Its title notwithstanding, the book stays close to the familiar themes and issues of R & D policy and rarely ventures into other facets of the complex relationship between modern science and political power. The role of scientists and technical experts in more general areas of public policy-making, such as safety regulation and defense policy, is not discussed. Also, the comparatively modest but nonetheless detectable movement in France toward public-interest and radical science is not mentioned. Finally, the book is not referenced as thoroughly as one would expect from a scholarly publication; it does include, as appendixes, a short bibliography and a curious selection of reprinted documents ranging from observations of 19th-century French scientists to excerpts from the works of Max Weber, Karl Popper, and R. Richta.

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Experimental Model

Placenta. A Neglected Experimental Animal. Proceedings of a discussion, London, Oct. 1978. PETER BEACONSFIELD and CLAUDE VILLEE, Eds. Pergamon, New York, 1979. xvi, 442 pp. Cloth, $50; paper, $22.

The placenta, it seems, is not merely a highly selective barrier between mother and fetus of interest primarily to the obstetrician; at the meeting on which these proceedings are based attention was focused on its possible value as an experimental model in a number of diverse fields—biochemistry, cell replication, cancer, immunology, and aging. After all, the placenta is possessed of a remarkably wide range of metabolic activities and produces a number of hormones; it has a conveniently short "life" encompassing phases of development, maturity, and perhaps senescence; and of course it is readily available. Immunological interest naturally centers on the part it may play in preventing rejection of "nature's allograft," the fetus; the invasive properties of the trophoblast present obvious similarities to, as well as differences from, those of malignant tissues.

In inviting contributions from specialists in the various fields of interest, the organizers' aim was to provide reviews of each subject, both of a general nature and having particular reference to the placenta, whose possible role in future studies was also to be considered. However, they had a further objective in mind: by placing emphasis on the discussions that followed the formal presentations they hoped to create an atmosphere in which fundamental new concepts might be developed, or at least new avenues for experimentation suggested. In the event, as the senior editor freely conceded during the course of the meeting, the speakers, apart from the clinicians, hesitated to venture into one another's territories. So, although the organizers would have wished for less attention to detail and more enlightened discussion at the meeting, the book in