Book Reviews

Science as Nonautonomous

Toward a Political Sociology of Science. STUART S. BLUME. Free Press (Macmillan), New York, and Collier Macmillan, London, 1974. xiv, 288 pp. $9.95.

The reader of these remarks should be aware at the outset that this reviewer is closely identified with the "standard" (that is, Mertonian) sociology of science and therefore may be expected to disagree with a book that argues that "science must be seen as innately political" (p. 28). The validity of my disagreement is of course for the reader to decide.

Stuart S. Blume, a research officer in the Civil Service College, London, sums up his provocative and readable new work in these words:

> The major theme of this book has been that the social structure of modern science is highly dependent upon the social, economic, and political organization of society, and extremely sensitive to changes in this environment.

He concludes (p. 279) with the warning:

> If the most singular characteristics of modern science are to be fully understood, sociologists of science must discard their assumption of the autonomy of the social system of science.

The hypothesis of "the essentially political nature of science" (p. 58) provides the central motif for Blume's detailed effort to broaden the sociology of science so as to take into account the consequences of the relations between the scientific and the political sectors of society. I am by no means persuaded that he has succeeded in his attempt, but his arguments deserve thoughtful scrutiny.

Of the book's eight, extensively documented chapters, which draw almost entirely on contemporary British and American materials, the first three are concerned with the internal structure of the scientific community and with various criticisms of the Mertonian paradigm. From this sophisticated review come two conclusions important to Blume's basic argument. The first is that scientific rationality is an ideology (and thus may be viewed as competing with other, more clearly political ideologies); the second is that the reward system of science is vulnerable to distortion by nonscientific factors (so that scientists' involvements with government are relevant to the social structure of science).

Chapters 4 and 5 contain Blume's most valuable contributions to the sociology/political science of science. Here he provides a comprehensive discussion of professional societies and scientific unions of various types, viewing them as responses to changes in the social environment of science. His detailed analyses of specific organizations (ranging from the Royal Society and the AAAS to Scientists and Engineers for Social and Political Action) are particularly useful.

Thereafter he deals with the scientific elites who serve as advisers to government, with the mechanisms through which the public is informed (or not) of scientific information relevant to current issues, and finally with the broader question of "innovation and society" —although this comes down to a more distinctly hortative consideration of the roles scientists ought to play in the wider society. Reviewing the evidence that "even the most highly educated and technologically advanced societies are infested by sizeable pockets of ignorance on scientific and technological matters" (p. 258), he examines the various stances taken by scientists in the fluoridation controversies and concludes with the suggestion that "professional service norms will require a much wider commitment to diffusion of scientific knowledge than previously" (p. 275).

The weaknesses I find in Blume's thesis seem to stem fundamentally from his failure to specify what it is we should be trying to explain about science. In rejecting the narrowness of the sociologists' concern with how the scientific community is organized so that its members may continue to produce certified empirical knowledge, he apparently denies that scientific knowledge itself is the sine qua non by which the scientific community is to be identified and its functioning assessed. In rejecting the political scientists' approach, which he suggests is characterized by a failure to distinguish between science and technology or to consider the internal structure of science at all, he apparently denies a central interest in the structures through which scientific advice is fed into the political decision-making process.

Blume's focus, then, would seem to be the social structure of science as a profession. But while the sociologist would define "social structure" in terms of the normatively prescribed relationships among scientists that ensure both the motivation and the policing of scientific productivity, and the political scientist would define it as the developing social apparatus through which scientific information is brought to bear upon political decisions (including those which affect science itself), Blume seems to view the social structure of science primarily in terms of the stratification system within science and the nonresearch activities in which scientists may engage as members of a particular occupation.

It may fairly be questioned whether the prestige gained through serving as a scientific adviser to government seriously distorts the workings of the scientific reward system, even though the criteria by which one is selected for such service may include nonscientific considerations. And I think it may be questioned on more basic grounds whether scientists' activities in unions, as popularizers of research findings, and as participants in political controversies over the uses of science should be viewed as central to our understanding of science qua science.

A decision as to the ultimate importance of Blume's work must thus rest upon one's prior assumptions about what we wish to understand of the social character of science. My own conclusion, obviously, is that Blume has opted for a question that is less than central to the scientific understanding of science. He has, however, illuminated a number of significant problems in the relationship between science and society, and his painstaking efforts in this direction deserve both our admiration and our careful attention.

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