

Proposal for a Constructive Response

Dr G. J. Leigh, School of Molecular Sciences, University of Sussex, outlines a possible alternative to the Rothschild proposals.

It seems clear, whatever scientists think of Lord Rothschild's proposals, that the research council system will be altered. The government has accepted and endorsed the customer-contractor principle, and has invited comment, not on whether it should be put into effect, but on how it should be implemented. It would be unwise to hope that the outcry of a few thousand tormented souls will deter the government from doing what it believes to be best. Discussions which simply emphasize shortcomings of the Rothschild report are therefore beside the point and not constructive.

There are no accepted concrete criteria by which one can judge the effectiveness of forms of organization for promoting research and development. Rothschild's main objection to the present system would appear to be that a great deal of the applied research undertaken by the research councils is not commissioned by a customer. This, he says, is wrong. There is, however, persuasive evidence that this research is nevertheless used, and used successfully. For example, the value of the gross output of food produced in this country is greater than that produced in Canada, Australia or New Zealand, and it would be surprising if the Agricultural Research Service were not, in part, responsible. A more trenchant criticism of the present organization would therefore have been useful.

Likewise, Rothschild presents no proof that the customer-contractor relationship promotes greater effectiveness. There must, however, be information obtainable on how the principle works in other circumstances. Industry must cost its research and development budget closely, and Lord Rothschild has had close experience of at least one large company. The research associations and scientific consultants must work generally on a customer-contractor basis. Certain other countries arrange research programmes centrally, and it would have been instructive to have had a critique of research and development in, say, East Germany or the Soviet Union.

In spite of the lack of evidence for the value of the proposed upheaval, the government wishes to alter radically the present organization. The proposed changes will, for the scientist, introduce

stress and insecurity. The government has not shown itself particularly sensitive to scientists' needs in the past, and this raises general questions about the government's attitude to science, and the whole future of scientists in government research establishments.

Assuming that the changes take place as suggested by Rothschild, it would be valuable for the government to instruct the relevant ministries to draw up a comprehensive list of the research and development problems that they feel should be placed with the research councils. These should then be submitted to the research councils for detailed comment on feasibility, cost and value. Such an exercise would test the abilities of the ministries to formulate programmes, and demonstrate whether the research councils are as inflexible and insensitive to national requirements as their proposed fate would suggest.

The individual research councils should be replaced by a single research council dealing with all the sciences. This would create a large organization, but this does not necessarily promote inefficiency. (The Shell Oil Company seems comparatively effective in spite of its size.) Within the new research council there might well be subdivisions corresponding to the present councils, but it would allow much more flexible arrangements of staff and facilities, both interdisciplinary and between the subdivisions, than is at present possible. Such an amalgamation would avoid some duplication of staff, prevent the submission of the same research proposal to more than one body and, above all, facilitate the formation of multidisciplinary research groups and the dissemination and integration of information between disciplines, a development that the present councils are already encouraging. It would also provide a system more adaptable to future needs than the present one. The new research council would commission its own work in its own establishments and also support work in the universities, as do the councils at present.

The work of the research council would be under the direct supervision of a committee, analogous in some respects to the Council for Scientific Policy, but quite different in that it would not

merely play an advisory role. It would be composed of representatives of scientists, government and industry, and of laymen. It would also possess its own independent scientific staffs. Its functions would be manifold.

It would advise the government on financial, social and strategic aspects of science policy, obtain funds for the research council from the Treasury or the DES and mediate between the sometimes conflicting requirements of scientists and the government. It would go to industry and the ministries and accept advice on the areas of research that would be of the most direct national benefit. It would continuously appraise the work of the research council, and could order it to withdraw support from, or reduce support to, those areas which no longer warranted encouragement. Finally, it could instruct the research council to commission work on particular subjects, for any good reasons, be they social, economic or scientific.

The new committee could also effectively formalize a wide range of presently informal functions. It could attempt to translate the requirements of customers into terms which would satisfy the scientist and show the customer how he might use the scientist's results. A far wider range of customers might then be obtained than Rothschild suggests. It could also consider the balance of pure and applied research, a problem which Rothschild ignores. This will obviously vary with the subject and with time. A particular function could be to encourage the grey areas between pure and applied research. It is difficult to imagine a ministry commissioning work on, say, the linear induction motor before one had been invented. Yet such work can be classified as both pure and applied.

Some such arrangement as outlined would be in the spirit of the customer-contractor principle, in that the potential customer could have work carried out on his behalf if he could convince the committee of its relevance and priority. It would retain for the scientist a necessary degree of autonomy and freedom from direct pressure. It would also allow the democratic process (which Rothschild apparently equates, in my opinion incorrectly, with the customer-contractor mechanism) to work in the control of government science, and to be seen working. It is only by a set of counter-proposals, possibly such as these, that a solution to the mutual benefit of science, scientists and the government can be developed.