

—those by Hirsch (p. 1436) and Erlenmeyer-Kimling and Jarvik (p. 1477).

Suppose we do find irrefutable evidence of genetically determined differences among human beings in socially important traits—what then? I do not presume to answer this immense problem, but suggest that it is a sort of problem to which the efforts of a committee on “Science in the Promotion of Human Welfare” should be directed. It is not a scientific problem, but the title of the committee implies that non-scientific matters are within its province; perhaps it will have to add some philosophers to its membership to help specify what it means by “human welfare.” Both the committee and Putnam are deriving their ethical postulates by selection from the vast and contradictory fund of values that our tradition affords. As long as this procedure is followed, one can justify almost anything. If, however, the committee made a serious effort to render its ethical assumptions as clear and consistent as it would render a scientific theory, the ambiguity in the ethical aspect of the debate might at least be reduced.

There is another line of argument open to the committee, which can be reconciled with scientific information that may be developed about genetic differences among individuals or groups in socially significant characteristics. This is that any action that might be justified with respect to genetic differences would certainly be inefficient if applied to the socially defined dichotomy “Negro-White.” This dichotomy defines as “Negro” some persons nearly all of whose genetic characteristics are of Caucasian origin. Even if there should arise some evidence of important genetic differences between persons of pure Caucasian and pure African origin (heterogeneous categories themselves), this would provide no justification for differential treatment in terms of “race” as socially defined in the United States.

To give some perspective to the argument, let us suppose that statistics on intelligence or genetic studies of families should reveal Jewish persons to be genetically more intelligent than Gentiles. The principles advocated by Putnam would seem to imply that Jews should then be given uniformly superior opportunities for education and influence than Gentiles, from their earliest years. This might indeed have some advantages, granted the facts I assume; but would the advocates of segregation

take this action to segregate themselves?

One might reply that we do not have such data about Jewish superiority. The norms of science would then demand that we seek evidence on the point—for the purposes of applied science, if not theory. Those who advocate white (Gentile) superiority would probably not rush to do so. But this presumed reluctance may be parallel to the reluctance of equalitarians to seek out evidence of human genetic differences. This would not be the first time that scientists had shown a certain blindness to scientific evidence opposing a valuative position they advocated. Barber, in writing of “Resistance by scientists to scientific discovery” [*ibid.* 134, 596 (1961)], has observed that scientists’ actual behavior can diverge somewhat from the norms cited self-righteously by the committee. A little more humility—if it could be practiced on both sides—might also help bring the “race” issue nearer to the degree of resolution possible in a scientific journal.

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### National Policy for Science:

#### A Congressional Responsibility

The editorial in the issue of 22 November [*Science* 142, 1025 (1963)] charges, undoubtedly with cause, that the retiring senior scientist of the executive branch of the government, in pursuing his executive duties, has failed to provide an adequate intellectual basis (or long-term policy) for support by the scientific community, such as could be furnished by a planning office marshalling the wisdom of the nation to give guidance for the future.

Perhaps this failure is as it should be, even to the extent of being a long-term gain for a democratic society in which the freedom of science, as well as other freedoms, is protected by a separation of powers. We seem constantly to forget of late that it is the office of the legislative branch to establish long-term policy and to give guidance, after sufficient public debate, in the form of laws containing statements of national intent, which are only to be carried out in daily or annual business by the executive branch.

The proven and stable system which gives Congress responsibility for policy

is enforced by legislative control of taxation and appropriations. This situation was clearly recognized by the editor in his previous statements [*ibid.* 140, 1364 (28 June 1963)] that “the future shape of science is being determined by legislative actions . . .” and that there were “other ways of improving the scientific judgments of Congress,” including the nomination of scientific counselors by the National Academy of Sciences.

May I suggest that the earlier proposal by the editor is a sounder one, far less likely to produce an “arrogant mode of operation.” It appears far more healthful for our way of life and for the future of science.

I also think that it is within the nonpolitical objects of AAAS, as published on each editorial page, and within the proper functions of its Board of Directors and the editor, as representative of scientists in all the disciplines, to take steps to bring about active consideration of the June suggestion of the editor, by Congress and the NAS. This may be done with a view to encouraging Congress to find the best way to fulfill its broad deliberative office in science policy, so that appointment to its group of counselors would bear the highest prestige of all scientific appointments in government. Possibly the entire academy might be invited to tender formal policy suggestions through accredited liaison. This could only apply to the very broadest issues. It is to be hoped that in such considerations the established responsibilities of state legislatures for public universities and for local research experiment stations would not be forgotten.

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### An Experiment in Communication: The Information Exchange Group

An information-exchange group has been set up to provide better communication among scientists in the related fields of electron transfer, oxidative and photosynthetic phosphorylation, ion transport, and membrane structure and function. The National Institutes of Health provide the means by which any member of the group can within a matter of days dispatch a communication to all other members.