trists (though there were notable exceptions). If the charge were false, the obvious strategy for the psychometrists would have been to seek to demonstrate the fact by the statistical methods that they find convincing. Yet it is almost a decade now since I brought the charge to the attention of Educational Testing Service, and in all that time they have produced no evidence, statistical or otherwise, that refutes it despite their unrivaled opportunity to make experiments using their own multiple-choice tests, which are certainly among the very best.

The important fact, then, is not just that there does not happen to be statistical or other evidence to refute the charge but that, had the charge been refutable, there *ought* to have been such evidence by now. Because there is not, the charge that multiple-choice tests penalize depth, subtlety, creativity, intellectual honesty, and superior knowledge must be held to prevail not only on its own merits but also by default. And this leaves a crucial question that we must all face: What is to be done about the matter?

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Toward Restoration of the Whole

Cyril Stanley Smith's article on "Materials and the development of civilization and science" (14 May, p. 908) reaches a conclusion that is particularly interesting from the point of view of the history of science. It is clear that science is now reaching ultimate limits in its efforts to decompose all phenomena into isolated entities that can be studied without interactions with the complex surroundings in which they normally occur. It is too often forgotten that this type of systematic investigation, although indispensable as an initial step, is essentially artificial. A truer understanding of nature can result only from a knowledge of the highly differentiated and interdependent entities that characterize any natural or artificial system. This is Smith's concept of scientific abstraction at a higher level, which should lead to the understanding of complex interrelations. At the same time it is in essence the Greek view of science; the Greek philosophers understood phenomena mainly as entities integrated with their environment, surroundings, and previous evolution, which forced the investigation of everything under innumerable sets of special circumstances. Such an approach was evidently doomed to fail at the time of Aristotle, since little valid knowledge can be gained without an analytical study of systems existing under idealized conditions. It is nevertheless interesting to see that science is presently evolving into the integrating approach that the classical Greeks already assumed to be the "true" form of knowledge.

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Proposed Regional Medical Centers

Elinor Langer (News and Comment, 14 May, p. 932) says that the report of the President's Commission on Heart Disease, Cancer, and Stroke, and the legislation subsequently introduced in Congress to implement some of its recommendations, "have received endorsements from groups such as the American Heart Association. . . ." In the immediate context in which she places this statement—following reference to opposition which has been developing among state health officers and basic scientists—the inference is easily drawn that both the report and the bill are completely satisfactory to our organization. This is not so, and I hope you will allow me to set the record straight.

When I appeared on 9 February to testify for the American Heart Association at the public hearings on S. 596, I made it clear that our support of the administration's health aims did not preclude criticism of the legislation as drawn. I underscored the need for clinical training programs to help provide the large numbers of highly trained physicians and paramedical personnel who would be needed to staff the projected medical complexes. Specifically, I said:

> To establish such a system without first seeing to the expansion of clinical training facilities might, in effect, do more harm than good. It would dilute our existing supply of trained clinical personnel and might well lower, instead of elevating, existing standards of diagnosis and treatment.

For this reason, the Heart Association strongly urged that the most immediate effect of the bill, if enacted, should be to enable existing training centers to expand and upgrade their clinical and paramedical training programs. We also recommended that, instead of attempting in one stroke to blanket the nation with regional medical complexes, attention be given to a series of planning grants and, possibly, to a few pilot projects.

In other recommendations we were concerned with the administration of the regional complexes (we favor administration by the National Institutes of Health), with the proposed basis for use of matching funds, and with the structure of an advisory council for the regional complexes, and we suggested rewording of the bill at several points to eliminate any unintentional denigration of the service now being rendered the American people by the medical profession.

I believe the foregoing will make it clear that we in the American Heart Association are engaging in quite the same sort of thoughtful analysis of the commission report and the legislative proposals that Langer indicates is in process among other sections of the medical and scientific community. We favor the commission's aims, but we have not bought the legislative package uncritically, and we see flaws that must be corrected if the worthy objectives are to be achieved.

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Chamberlin's Method: A Proposed Application

Chamberlin's 1890 paper "The method of multiple working hypotheses" (7 May, p. 754) can be used today, without changing a word, as a manual for practitioners of an applied science that was still but a gleam in the eye of its creators when the article was first published. I refer to psychodiagnosis and psychotherapy; to theories and practices which have developed over the past seventy years largely out of the work of Freud, his followers, his competitors, his refuters, and his detractors.

Today one still finds many "ruling theories," each with its adherents and disciples, attempting to explain the etiology of deviant and abnormal behavior. These theories range from the narrowly biological (for example, "never a crooked thought without a crooked molecule," various neurological theories) through the narrowly psy-