Letters

History as Social-Scientific Data

The suggestion by Deitsch ("Social change and social science," Letters, 19 June, p. 1407) that generalizations be attempted only after careful investigation of the history of a question is an excellent one. It is unfortunate that he did not follow it in his own letter.

His suggestion that social science depends upon historical evidence now has history against it. Economics, political science, anthropology, and finally sociology have learned the hard way that historical facts are not scientific data. Their situation is not at all the same as that of the geologist in Deitsch's analogy. Historical accounts are in no sense empirical data. One might just as well argue that the journalistic accounts of impending annihilation from pesticides or from atomic fallout constitute empirical data. Furthermore, the comprehensive history of all aspects of any given period has yet to be written.

History has various meanings. In one sense it means only a general background in which time relations may be telescoped without serious loss of understanding. It also means the actual succession of events. The third, and for the scholar the most important, meaning is that of a synoptic interpretation, which is later accepted, willy-nilly out of the welter of such accounts, as a reasonable facsimile of reality. This is the history being pressed upon the social sciences as empirical data. Social scientists have struggled with the problem of historiography, and the Social Science Research Council has issued numerous publications about it.

Deitsch cites the work of Muzafer Sherif as a demonstration of the historical method. I see no dependence at all upon historical evidence in Sherif's work. I should say, rather, that he investigates the background of his subject (as all scientists should) in formulating hypotheses or designing tests. The tests he has carried out are highly refined, applied to limited ranges of behavior in limited situations, and done with extensive facilities and often with expensive equipment. If his work were to be expanded to test generalizations about social change, the costs would run into tens of millions of dollars. And that is precisley the point made in the editorial (6 Mar., p. 999) to which Deitsch took exception.

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New Biology Curriculum: Questions

From the tone of the letters submitted by teachers (10 Apr., p. 136; 15 May, pp. 796, 797), I get the distinct impression that the BSCS program is supposed to be immune to criticism.

I am a high school biology teacher who, unlike the previous writers, was not on the team that wrote the BSCS texts. I have studied the Green and Yellow Versions. I now have some questions or comments to make concerning the BSCS and its use.

First of all, the "feedback" used to revise the texts could have been "conditioned" by the enthusiasm of the teacher using the experimental version. Any good researcher will admit that sometimes it is rather difficult to avoid seeing what he wants to see.

Secondly, what standardized tests were used to evaluate the achievement of the students who were exposed to BSCS? As far as I know, the latest on the market is the Nelson, published in 1951! Needless to say, this test would measure poorly a BSCS program containing concepts never even heard of in 1951.

Thirdly, even assuming that much of the text is not too difficult for the average 15-year-old, how does a teacher cover adequately so much material in 9 or 10 months' time? Furthermore, if there happens to be only one biology teacher in the school (as in mine), where does he get the time to prepare the tremendous amount of lab equipment, demonstrations, and so forth? Maybe some student help is the answer, but I wonder (from previous experience) how long that would last.

I must admit that I am a conservative 26-year-old. If, after another 3 or 4 years of talking with *both* teachers and students who have had the BSCS, I find that such a course would be actually useful to the *average* 15-year-old, I will then adopt it myself. In the meantime, I must wait to see what time, the best judge of all, says.

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BSCS is definitely not above criticism and welcomes every constructive comment. In fact, if it differs significantly from previous efforts to prepare textbooks, laboratory programs, and adjunct materials to modernize the teaching of science in the secondary schools, it does so chiefly because of the vast effort made, over a period of three years, to improve the materials on the basis of the widest possible experimental trials and collection of suggestions and criticism, before any attempt was made to prepare editions for commercial distribution. No such program of repeated trials and revisions has ever been possible before, simply because of the expense. Only through the support of the National Science Foundation has a method for the improvement of scientific curricula through scientific procedures become feasible.

As for the standard tests used in evaluation of the BSCS programs, that matter was explained in some detail and quite accurately by Hulda Grobman in a report in *Science* (17 Jan., p. 265). It may be desirable to add two comments. The BSCS quarterly tests for each version and the comprehensive examination for all three groups at the end of the year have been fully standardized according to accepted procedures carried out by Educational Testing Service, Inc., and by the Psychological Corporation. The examinations, like the other BSCS materials, have gone through three rounds of preparation, field trial, analysis, and revision. No one should delude himself, however, about the ultimate subjective character of all examinations! The questions asked in the BSCS examinations are objective in type, and norms have been established, but the content, factual and conceptual, to which the examinations relate has been *subjectively* determined by