. . . Those who reject the scientific "establishment" apparently share the contemporary conviction that social, economic, and political conditions can only be improved by radical change. Although I cannot agree to the abandonment of science because it "could be perverted and used for evil purposes," I cannot find fault with James Shapiro's decision to forsake a promising scientific career for activism consistent with such ideology.

I do find fault, however, with James K. Glassman's decision to abandon a career of accurate reporting with a number of misleading statements; for example: "The original site [of the Affiliated Hospitals Center] was abandoned, largely because of student protests that use of the site would mean displacement of 180 black families." The original plans for the Center were rejected because of serious financial problems, according to F. Stanton Deland, president of the board of trustees of the A.H.C. Those plans did require the removal of 180 units from the housing market, but less than half that number were occupied by families and few of those were black families. These and other relevant facts appear, among other places, in past issues of the *Harvard Crimson*, which Glassman obviously does not read although he was a Harvard student and it is the students' newspaper.

The land Harvard owns in Boston was not purchased for investment purposes but for the construction of health or educational facilities, and for student housing. Responsible officials of both Boston and Cambridge have urged Harvard to reduce its impact on the urban market by housing its own students. The Harvard Corporation, accordingly, committed itself to construction of 1100 units of new housing —including sufficient new housing to replace that on land to be used for the construction of modern health facilities. Some issues such as where the replacement housing will be constructed and what rents will be are unresolved. This is not to say, however, that officials are not discussing the appropriate issues with the residents of Harvard-owned housing.

Social problems are no longer only problems but often are made political issues. The politicalization of a problem can obstruct even the best efforts to seek rational solutions. Harvard is actively seeking to minimize its impact on Boston's crowded housing market. An effort of the size proposed must include concern for the needs of many groups—married students, employees, and the community-at-large as well as the 180 tenants of Harvard-owned housing. Replacement housing is another issue and Harvard has placed the needs of present tenants above those of other groups. It is one thing for present residents to negotiate issues that affect only them; it is something else for one group to determine Harvard's total housing effort in Boston.

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Esthetics of Asymmetry

In his alternate explanation of some studies regarding Trinity Chapel in Canterbury Cathedral, Barmore concluded that the deviation of the nave axis from the choir axis resulted from an error by the builder (7 Nov., p. 772), and stated that such errors are common even now: that the axis of the nave of Washington Cathedral deviates from the axis of the choir by about 2°.

The deviation of the Washington Cathedral nave axis from the choir axis was laid out by Philip Hubert Frohman, F.A.I.A., our cathedral architect who is still living. The deviation was created intentionally without the slightest degree of error and was done for esthetic reasons to enhance the visitor's view when entering the eventual west portal doors. It would be an insult to the George A. Fuller Company, builders of this cathedral since 1910, to think that their engineers had not the ability to lay out axis lines correctly. The offset of the nave axis to the choir axes is 1 in 48. This results in an angle of 1°11′38″. When the center section of the west portal doors are built, their center point will be 5 feet 7 45/64 inches north of the projected axis of the choir.

Iconographers and clergy frequently like to assume that a broken axis in a cathedral represents the broken or hanging body of Christ from the cross. This has nothing to do with the fact in Washington Cathedral. The architect planned it to give, in his judgment, the best visual perspective and prevent the converging of lines at the east end of the cathedral, such as one sees on distant railroad tracks.

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Defense of Science

Weinberg, in his article "In defense of science" (9 Jan., p. 141), refers to scientific muckrakers as journalists who "see corruption in the scientific-political system" and suggests that "it would be more accurate to say their sensibilities are hurt by the existence of a scientific politics."

In deciding what is "accurate" surely it will not suffice to raise issues of "corruption," "self-service," and "venality" without addressing them seriously. In deciding what is accurate it is pertinent to ponder the results (*1*) of a survey of "Scientists' Views on Ethics and Responsibilities" conducted in 1967 among AAAS members by an ad hoc study group under the chairmanship of Anatol Rapaport. This survey showed strong support for a code of ethics and responsibility for practicing scientists, analogous to codes which govern some other professions (medicine and law). Specifically there was very strong support for the creation of procedures to deal with cases of alleged plagiarism.

A valid "defense of science" requires special objectivity in collecting and weighing evidence which is allegedly adverse to the scientific community, and a vigorous implementation of solutions to bona fide internal problems. Shouldn't this be one of the first of the responsibilities for social engineering to which Weinberg says scientists and technologists should address themselves?

What has happened to the AAAS ad hoc study group which did the "Study of Scientists' Views on Ethics and Responsibilities"? What is being done to implement the findings? When do we start?

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Reference

1. L. Cranberg, *Bull. At. Sci.* **24**, 39 (1968).

Latin America: Bedeviled Science

Nussenzveig in "Migration of scientists from Latin America" (26 Sept., p. 1328) has presented a discouraging picture of the technical and political problems of research and teaching in Latin America. I participated in the First Latin American Solid State Physics Institute in January 1969 and was able to visit a number of Latin American

institutes and universities after the symposium. The problems that Nussenzveig discusses are so severe and pervasive that they were visible even in my brief "outsider's" view.

Among the most discouraging things I saw were some nuclear particle accelerators, which were "gifts" from the United States. Such machines are given away because they are no longer capable of doing "competitive" research. The "gift" of such a machine appears to require of the recipient enormous expense (money for a building and installation costs) and effort (physicists, not engineers, must struggle under the conditions discussed in the article to get the machine running). After years of such struggle, the machine may be in operation, but the financial support for the "auxiliary" facilities—the counters, on-line computers, beam handling systems, and so forth, which now seem to cost about as much as the machine itself—is almost nonexistent. Under these conditions the laboratory is essentially useless for either research or training of graduate students, and the effort and expense have been wasted. This situation is hinted at by Nussenzveig, but I believe the problem should be strongly emphasized.

On the other hand, the *Instituto Venezolano de Investigaciones Cientificas* (outside Caracas) appeared to be relatively well off with respect to level and continuity of financial support and lack of government interference in its operations. The quality of the support is probably due in part to the relative wealth of the country as compared to its neighbors; and the lack of political intrusions is at least partly due to the geographic and organizational separation between the Institute and the large University in Caracas. Regardless of the reasons, though, this Institute has a reasonably supported, well-staffed, and well-motivated research program.

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Man's First Route to America

In "The earliest Americans" (7 Nov., p. 709), Haynes says, "Theories of the initial peopling of the New World are intimately related to sea level and glaciation during the late Pleistocene, because it is generally agreed that man passed from the Old to the New World *by way of an emerged Bering platform* [my italics] and thence through central Canada."

The Bermuda platform is tectonically stable and offers a potential reference section for Quaternary sea-level changes. Precise carbon-14 dates are now available and it appears that 37,000 years ago the Wisconsin-Illinois interglacial was at its climatic optimum, with, however, sea level at or slightly below present sea level. I submit that this, rather than at the height of the subsequent glaciation, was the most likely time for early man to have crossed from the Old to the New World, by island-hopping along the Kuril-Kamchatka-Commander-Aleutian chain or directly from the Chukchi Peninsula to the Seward Peninsula. The presence of early man in Northeast Asia during climatic optimum is much more likely than his presence at the height of a glaciation, when even today the southern limit of permafrost lies around 50°N in eastern Siberia, and conditions under a glacial regime must have been much worse.

As to whether such sea journeys were possible for early man, the initial entry into Australia by the ancestral Aboriginal group or groups is now placed at 30,000 years ago or earlier when sea level was little if any lower than at present, and man obviously came by boat as witnessed by the absence of large placentals, other than the dog, in Australia.

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There is no evidence to preclude the speculations of Pocklington (and others as well). While some immigrants may indeed have taken such a route via boat, I and others, for lack of evidence to the contrary, believe that most (but not necessarily all) of the peopling of the New World took place by normal processes of human population expansion and diffusion across continental land masses such as Beringia during glacial periods because (i) there was paleolithic occupation of northern Siberia during the last glacial period; (ii) there was then an emergent Bering platform; (iii) large land mammals walked across this platform; and (iv) Paleo-Indian hunters followed game herds (*1*). Only future work will lead to a better understanding of the relative importance of population dispersal models for Paleo-Indian occupation of America.