Letters

Reducing Imports of Rare Wildlife

A constructive approach toward conserving the rare and endangered wildlife of Africa and South American countries is hampered by the political and economic conditions in those nations. Only by reducing the export of the wildlife can any control become effective. The United States and European nations are the principal importers of these animals. If these markets were closed, the international agencies might be able, through their educational programs, to gain support for conservation within the developing nations and prevent political moves which would further endanger these species.

At Kennedy Airport alone, between 26 June and 11 September 1967, some 20,000 birds, 4000 primates, and 6000 reptiles and amphibians were declared as imports, mostly from Africa and South America. These were legal, according to the provisions of the Lacey Act of 1900, an obsolete law governing animal imports. Representative Alton Lennon's bill (H.R. 11618), identical to Representative John Dingell's bill (H.R. 6138), proposes to end the importation of endangered species and their transport in interstate commerce. Legitimate scientific imports would be scarcely affected, if at all. This bill will be considered in full committee early in the next session of Congress and deserves the support of the scientific community.

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Scientific Responsibility in Modern Life

In his review of *Contemporary Change in Traditional Societies*, Eric Wolf (10 Nov., p. 759) expresses "anguish" at the social effects of a century of modernization which my colleagues and I describe in Africa, Asia, and Latin America, and, deploring our "neutral view" of social change, he asks "modernization for what?" In letters (1 Dec.) H. Wynberg and others ask "Does science neglect society?" The moral responsibility of scientists for social change and its attendant ills has been increasingly debated in *Science* and elsewhere since the bomb was dropped on Hiroshima. I submit, however, that the issue has been improperly phrased and an unnecessary dilemma thus created. It is my purpose to clarify the issue rather than to answer Wolf's review.

Modernization, or any form of contemporary change, represents the social effects of hundreds of thousands of basic scientific discoveries that have been applied to technology. Its social impact became marked with the industrial revolution. Today, scientific research is a basic culture value, and we obviously cannot hold any particular scientists responsible for its effects. Science must above all remain free. We do not ascribe to the agronomist moral guilt for so increasing crop yields that farmers have been facing a crisis. It is not the fault of the nuclear physicist that enormous new sources of energy are still used largely for potential mass destruction rather than for peaceful purposes. The fundamental issue is what consequences any new scientific research will have. The question, therefore, should be "What are the factors and processes of modernization and how may science predict the outcome of decision-making?" rather than "Should the scientist take moral responsibility in social issues?"

The factors and processes of modern change have been operating irreversibly for several centuries, and scientists have had little idea of the far-reaching and accelerating consequences of their research. Social science has become important with the recognition that change has entailed social disjunctions and conflicting values. Today, the international crises resulting from these conflicts threaten a nuclear holocaust. At the same time, many societies that were formerly traditional welcome modernization, with its promise—if not fulfillment—of better health measures, education, and access to the goods and amenities of the contemporary industrial world. The cost of modernization may be deplorable, but neither the societies nor the scientists know exactly what is in store. We know principally, as our volumes pointed out, that local isolation is replaced by linkage with the institutions of the larger society, that traditional values of sharing tend to break down under competition in the marketplace, and that factionalism and other sources of stress are generally concomitants of emergent nationhood. These are qualitative changes, and many other studies describe similar change.

What, then, is the responsibility of the scientist? The first and fundamentally important task is to assess the consequences of policies and decisions—to understand causality in human affairs so as to lay some basis for predictions. Only by such means can the consequences of future acts be appraised. It is pointless to stress responsibility for changes of the past.

To those who claim that the social scientist cannot separate his science from his human compassion I answer that he can and must. Most of us, for example, deplore the bombing and burning, use of napalm and tear gas, and killing of soldiers and civilians in Vietnam. But the social issue is not resolved simply by expressions of moral indignation or by holding protest rallies. The need is, on the one hand, to ascertain why this is being done—to clarify the objectives and explain the strategies—and, on the other hand, to present with plausibility the probable outcome of this or some other course of action. Anthropology has a considerable body of relevant data on formerly traditional societies that are emerging from colonialism, and if these were mobilized and presented as causal hypotheses which state "If this is done, then that will probably happen," the consequences of present policies would be far more convincing than protests of indignation.

A parallel case involving moral issues is the dropping of the bomb on Hiroshima, for which many nuclear scientists have carried a sense of deep guilt. What has been almost completely overlooked is that the horrors of the bomb lay less in its unprecedented power than in the fact that mass destruction of civilian populations had already become an accepted practice of World War II. By employment of many bombs, more civilians had been

killed and more cities leveled than occurred with the bomb on Hiroshima. The more basic, and difficult, problem therefore was why the nature of warfare changed at this time.

Research in the physical and biological sciences is not likely to cease. The use to which it is put will have far-reaching and usually unexpected consequences. It should be the task of the social scientist to develop a methodology that will permit predictive hypotheses rather than to make moral exhortations. This is not to say that all conflicting values and ideologies can be eliminated, but understanding is a step toward resolution by peaceful means. This basic point, I think, applies across the board. In international affairs, the first need is to understand the nature of free enterprise, communism, and all the intermediate ideologies rather than to deal in stereotypes, and, on the domestic scene, it is to comprehend the reasons for attitudes toward minority groups as well as the nature of these groups. Such understandings can best be achieved from a neutral position, no matter how deeply anguished the scientist may be.

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Can the Ends Justify the Means?

The goals of students in higher education are not the cause of unrest in our universities ("Student unrest," 27 Oct., p. 443). The real problem is the manner in which a minority of students, along with fellow travelers, seek to attain these goals, laudable or not. I am sure that the present-day student can, if he really tries, obtain freedom of thought and commitment, be treated as an individual, acquire the skill or art of learning, have a voice in establishing priorities for educational practices, and participate (to a reasonable degree) in policy-making. In every university that I know of, the student has ample opportunity to participate in making rules, in ways and means of enforcing them, and in becoming involved in activities that are important to him. Trouble comes when the vociferous minority, lacking parental and faculty experience, demands that its desires be realized by means which often disregard existing rules and laws and the rights of others. Yet these changes could, in a large part, be made if legitimate tactics were used in an intelligent manner. To many observers, it seems that the very tactics used to force a change demonstrate that those utilizing these tactics do not merit the goals they seek and that they do not have the intelligence to use, in a sane way, new freedoms and responsibilities.

In my opinion, the administrators of our universities would be remiss indeed if they allow students to have a greater say in their education without first making certain that the majority of the students really want the changes sought by the minority, and without having definite assurance, by past action, that the majority of them have the sense and ability to utilize greater freedom. In such "reforms," haste often leads to chaotic situations and little real progress, whereas deliberate action generally assures worthwhile gains.

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. . . Despite the universal appeal of such cliches as "freedom" and "democracy," the powers demanded by students are frequently neither reasonable nor constructive, nor do they enhance the quality or quantity of freedom on the campus. As a graduate student on the scene, I know that Wolfle's "bright, articulate, committed, influential, activist student leaders" want as much as they can get, and the educational process be damned. Many of them seek the power to impose a political position on the university from their position as self-appointed, but officially recognized, "spokesmen" of the student body. This is not democracy but a gross form of elitism.

The ultimate goal of "student power" would seem to be a North American equivalent of the 1918 University Reform Movement which swept Latin America from the University of Córdoba, Argentina. What has the URM accomplished? It has gravely impaired the quality of Hispano-American education; created a class of professional students subsidized by the government and a disproportion between "intellectuals" and technicians which is tragic for an underdeveloped region. It is largely responsible for the political volatility which has so hindered the improvement of the lives of the peoples of the countries affected.

The traditional purposes of the American university have been teaching and research. To surrender blindly