would serve in this are morally ambiguous. The social sciences are even less able than the physical sciences to operate in a moral vacuum. Complete objectivity or moral neutrality is impossible in the social sciences. Value propositions and value commitments inevitably influence one's work. This is especially true of social scientists who would apply their trade to the solution of real problems in the world.

In operations of the Camelot type, what is the moral basis of their cooperation? From the standpoint of the countries in which the research will be done, the purposes of Project Camelot can have only two meanings: (i) ultimate intervention by the United States in their internal affairs by means not sanctioned by any law or international agreement, and (ii) support of counterrevolutionary forces in these countries, that is to say, of the traditional oligarchy whose economic and social views are contrary to the advanced ideals and practices of America's socially progressive democracy. If the government of the United States believes it must resist "stage-managed wars of liberation" wherever they occur regardless of other consequences, that is a matter for public policy determination. The individual scientist, however, must resolve in his own conscience whether he wishes to cooperate with such a policy or not.

The second issue is technical. Project Camelot, insofar as it reached public knowledge, consisted principally of an extensive interview survey of public attitudes and opinions. The question is whether valid interpretations and policy determinations can be made from data so obtained. I believe not. Cross-section surveys of opinions and attitudes have their uses, but they are likely to lead to totally distorted conclusions where they are not closely related to an intimate knowledge of the history, culture, structure, and social processes in each of the countries surveyed. In the absence of information of this kind, such surveys are potentially dangerous, because they may lead to wrong and even disastrous decisions. Camelot consultants designed what was to all appearances a superbly engineered questionnaire. But they failed to speculate about its uses in decision-making and simply assumed, one is forced to conclude, that someone else would somehow take care of the contextual information.

There is much cross-cultural research that the government could sponsor which would deepen our understanding of different national societies without being a poorly disguised effort at social espionage. Such research, pursued for purely scientific ends, would be legitimate. Ultimately, it might even be helpful in the formulation of realistic foreign policies.

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Monod and His Cello

I was delighted by the information, in Stent's article about this year's Nobel laureates in medicine or physiology (22 Oct., p. 462), that Monod is a serious musician who plays the cello with professional competence. . . . Whenever we talk of the scientist's responsibility to society we think primarily, if not exclusively, of theoretical physicists burdened by the possibility of worldwide nuclear disaster. But recent advances in genetics, immunology, and biochemistry, for example, the breaking of the genetic code, have tremendous possibilities of influencing the lives and fortunes of entire civilizations, possibilities that must sound an equally clear call to the conscience of modern biologists. It is my belief that a person who not only has had sound scientific training, but whose mind and *Weltanschauung* have been tempered by the love of art, music, and philosophy, is better able to cope with the implications of scientific progress than his colleague who is culturally arid outside the laboratory. The sad truth is that it is increasingly difficult to accomplish the basic training of a scientist and to educate him in an "intellectual" sense as well. So three big cheers for Monod and his cello and for anybody who is as well acquainted with Bach, Brahms, and Beethoven as with DNA, RNA, and protein.

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Ages of Experimental Animals

The resolution of the Board of Directors of the AAAS (8 Oct., p. 147) brings to mind another problem in animal research. There is a great need to know as exactly as possible the ages of the animals used, because biological forms change radically with age, especially in the early periods of life. I refer not only to mammals but to all biologic forms. In particular, research in aging would be greatly aided if investigators in all fields were to state, among the other definitions of methods and conditions of experimentation, the ages of the animals or animal tissues used.

So far as feasible, experiments ought to be done on animals of different ages. It is ideal, for example, to use animals of ages related in an exponential fashion, such that whatever the youngest unit age (A), others would be A^2, A^3, A^4, and so on.

Moreover, animal suppliers would do a great service if they could give the exact dates of birth of all their animals and if they could supply older animals for the many researchers now interested in aging. So far we have not been able to locate on the American market animals of exactly known ages beyond the first few weeks.

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The Inner Calm

I do not believe that the letters by D. R. Weidman (3 Sept., p. 1048) and G. E. Morse (15 Oct., p. 292) concerning the "emotional perils" of science reflect the feelings of the majority of scientists, whatever their fields or age. Pavlov said of science that it demands from a man the whole of his life. Indeed, it is a matter of experience that in science one can hardly manage with less. It is from the awareness of this uncompromising truth that one derives an inner calm against disturbances from the outside. Measured against the faith implied in the simple words of Pavlov, most of the frustrations plaguing the scientists, such as slowness of progress in his own field, unsatisfactory working conditions, the cynicism of some administrators, the contempt of the successful, or the envy of the less pure, amount to little. It is only when we build expectations that have nothing to do with science and measure against these our own achievements that the frustrations may be painfully felt. But when this happens we should realize that in this situation we have as good as ceased to be scientists.

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