

nurtured, despite the urgency of present needs. For it is unlikely that the scientist's imagination will often leap to a specified goal. A chaos of facts will seldom fall into an ordered, predetermined pattern useful for a certain end.

Our colleges and universities have long provided a congenial atmosphere for the furtherance of science. They are best suited to integrate all fields of knowledge and to nurture free inquiry and speech. Their faculties inspire and educate our successors in an atmosphere of intellectual adventure. But this will cease to be so if lack of funds limits teachers to the teaching of science that is carried forward in wealthier laboratories outside our educational institutions. Universities will be deflected from the fulfillment of their proper functions if they are required to earn a hand to mouth existence by doing the odd jobs of science.

If universities are to fulfill their vital mission in modern society, they require greater freedom in the use of funds for the work of scientists who cannot honestly define detailed projects because they are explorers on the unexplored frontiers of science. They require more support of men and less of projects favored by administrators who are unversed in science. They need no less support of science, but more support of other scholars who are partners of scientists in the advancement of knowledge. It should be more

generally recognized that the faculties of universities are best able to plan the balanced development of their scholarly activities without direction from others. At a time when vast resources are needed for research that can no longer be performed by individual scientists, universities need to be fortified in their primary devotion to the intellectual development of men. Only thus will the future of science be assured.

Scientists will best fulfill their role in universities if they focus their efforts on the cultivation of the bold adventurous spirit which scientists share with all others who foster lives worth living.

This was expressed in cogent words by the distinguished predecessor of Earl Stevenson who is our distinguished host on this occasion. Said Arthur D. Little: "Ours is the duty and the privilege of bringing home to every man the wonders, the significance, and the underlying harmony of the world in which we live to the end that all undertakings may be better ordered, all lives enriched, all spirits fortified."

This great Association of scholars has a rich heritage from the inquiring minds of those who had the spirit of adventurers and the courage to defend their freedom to seek and state the truth. It is our high mission to preserve that freedom for those who will follow us in the furtherance of science.



## The Duty of Dissent<sup>1</sup>

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YESTERDAY noon I happened to turn on the television set and there was a sidewalk interview going on with my former boss, Harry Truman. He was asked "Do you think that our basic freedoms are being threatened?" To this the former President replied, "They are being threatened, but they are not in danger!" That remark did my spirits a lot of good, depressed as they occasionally are by the rubbish that is being peddled so violently and vociferously these days.

We hear a lot of talk these days about our freedoms and our liberties, which, as former President Truman opines, are being threatened but are not in danger. Occasionally a voice is raised to remind us that liberties and freedoms imply duties and responsibilities. Usually before long it turns out that the writer or speaker is weaving a neat little argument to prove that the duties and responsibilities take the form of pres-

ures toward conformity, and thus act as curbs on the liberties and freedoms.

What I want to express briefly is that conformity, in the sense of uncritical adherence to some established doctrine, is a deadening thing to the scientific and intellectual growth on which progress depends. This being so, we have not merely the freedom and privilege of critical examination of the ideas and facts and interpretations put before us for our acceptance, we have a positive duty to exercise that privilege by active use of our critical faculties, a duty without the exercise of which we cannot be said to have discharged the responsibilities of democratic citizenship.

It is this attitude toward new data and new conclusions that we find well developed in scientific research at its best. It is this attitude that is often so sadly lacking in the politician's approach to social problems, and that is so sorely needed there, even though its use in the political field is so much more difficult because of the emotional connotations of many social problems. It is, I am convinced, the lack of this attitude in handling political problems which, more than anything, retards progress in this field.

<sup>1</sup> At a luncheon meeting Dec. 28, 1953, on the occasion of the presentation of the AAAS-George Westinghouse Science Writing Awards, Dr. Condon, as president of the AAAS, made the principal address from which this is taken. Parts dealing with personal reminiscences of his days as a newspaper reporter in California, 1918-1921, have been omitted.

This point is not as well understood as it should be. I think the science writers understand it pretty well for they are the kind who have a natural inclination toward scientific method. But here at this convention I have talked with several of the working press of Boston who do not ordinarily deal with science. The kind of political misbehavior that is being overdignified these days by calling it anti-intellectualism, and which really represents nazi-type pressures against independent thinking and toward conformity to authoritarian doctrines, seemed to be very much on their minds.

Several of these men seemed vaguely to have the idea that the tendency of the scientists toward independent critical thought is just a kind of unruliness or bad-boy-ism which we perhaps have to tolerate in these eccentric fellows because they are the geese that lay the hydrogen bombs as well as many other great and good things.

When I encounter men who think this way, I labor earnestly with them, trying to get them to see that these are not just little adventitious oddities of the scientific homunculus. I try to get them to see the point I am trying to make here, that the critical questioning attitude is an essential ingredient of the scientists' method of working. Without it the method does not work.

I first came sharply up against this misunderstanding in a hearing before a governmental loyalty board five years ago—a really rich experience if I ever had one. The board chairman was a tired old civil servant without the slightest notion of what science is all about. He was turning over some notes he had made from certain raw, unevaluated files, and finally said to me in an accusingly questioning way: "Dr. Condon, we understand that at times you have been critical of the older ideas in physics!" At first I thought my leg was being pulled, but then I caught a glimpse of the sustained humorlessness of these tiresome proceedings, so I replied by making a stirring affirmation of faith in the truth of Archimedes' principle and of Newton's law of gravitation. This seemed to satisfy the board, for I was not asked to take sides on the matter that brought Galileo before the Inquisition.

Clearly it would have been hopeless with those people on that occasion to try to make the point I am trying to make here, on the duty of dissent. I hope that here it is not hopeless or even necessary.

I think that it is interesting and instructive to observe the degree to which people have a critical questioning attitude, or conversely have an uncritical conformist viewpoint. For example, it is instructive to consider in this light young Americans who have for a time been in some degree associated with the Communists. There are some who showed an interest in the mid-thirties, and I think it is a sign of a good inquiring mind that they did so. I respect them for it more than some of those who never had a lively enough spirit of inquiry to do so. Then they soon became acquainted with the rigid authoritarian boundaries of its doctrine, and pushed it away from themselves as a thing of no value, and I respect them for this, too.

But then there is another type of ex-Communist who never as a Communist had an inquiring or critical mind but who, until they happened to be disillusioned, followed the comrades in blind faith. Then, in a wild emotional reaction, they leaped from slavish adherence to the Communist dogma to an equally violent and passionately slavish adherence to an authoritarian anti-Communism. It is these people who are doing so much harm in America today as they eagerly play the game of the elements in Congress—who have shown that they have little respect for American principles of freedom and fair play.

In my opinion, the most important contribution science is making, and has yet to make, to human welfare is the inculcation of the scientific attitude of objective critical analysis of complicated situations and of the ability to reserve judgment until the facts are in. This is not a passive attitude but an active one, requiring honesty and fairness, combined with the eagerness and activity shown by a good newspaperman on the trail of a story.

I think it is in this actively questioning attitude that scientists and newspapermen have most in common. We have similar ideals and, since we are all human, we have similar shortcomings and inadequacies. It is again a happy occasion on which scientists through the AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE can honor a group of science writers who have been outstandingly successful in interpreting science to the public, and through them can honor the newspapers and periodicals with which they are associated.

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*Editor's Note:* Indicative of the difficulties of comment on a subject highly charged with political emotion is the fact that, in reporting the foregoing remarks, one Boston newspaper took the third from the last paragraph out of context and gave it a front page headline reading "Condon Lauds Pro-Reds;" and a rather misleading account was sent out on one of the wire services, although the Associated Press report was as accurate as a brief report can be.

In amplification of this part of his talk, Dr. Condon has written to *Science* as follows:

Perhaps I did not make my position clear, but I was protesting against the un-American tendency in some quarters to accept almost as national heroes some ex-Communists who were ardent full-time professional devotees of the Communist conspiracy against American democracy in the thirties, while at the same time some young scientists, whose only association with the same conspiracy was that of short-time slight participation in campus study groups in college, have been hounded and harassed from their jobs, and their professional careers ruined, even, in some cases, after a loyal and devoted period of distinguished service in military research during and since the war. We have laws and judicial procedures which are an adequate protection against espionage, sabotage, security leaks or conspiracies to overthrow the government. It is an outrageous thing that we allow unscrupulous politicians to present falsified accounts of these matters to the public at the expense of individuals who have served their country well and whose services today are needed.