

At this point, and particularly with respect to the national defense, I have to say something that I firmly believe in, but which is an important criticism. Thus when the scientist was apparently discovered by the Defense Department, say in about 1946, at least as to his critical role in defense weaponry, he was assigned to somewhat of a high-level consulting basis with military policymakers as well as to advise the civilians who in turn lorded it over the military. But, as the technological accomplishments of research and of industry poured forth, and as the battle for funds for these tremendous weapon systems some of which were brought in by the outer space age with all their sophistication required a decision, I am sorry to say that, in my opinion--the military with their lifetime education and practice in their own art, yielded some of their power of decision to the scientists and the engineers. Again in my opinion this should never have been done. Such specialists cannot function either as cure-alls, nor can they be know-alls. They are merely men who possess a vast amount of theoretical and practical information perhaps not generally available to you in the course of your experience. Their valuable contribution should be used by you as the military leaders. I am assuming that this student body will some day be flag rank and that you are going to have this problem to deal with.

Do not misapply the scientists and the engineers. Do not overrate them and likewise do not underrate them. I think today in the defense area that the scientist and the engineer have, at times, been allowed and encouraged to take away a responsibility that is properly your own! They have been asked to decide, instead of to advise.

Another thing that should be mentioned about science today is the peculiar shift that has occurred in the scientific disciplines. Years ago when one studied physics, the physics book was divided into isolated divisions or chapters. For instance one was a chapter on mechanics, one was a chapter on light, one on sound, one on magnetism, one on electricity, and so on. It was not known, nor ever inferred that light is like any of the other phenomena of physics, or that sound is, or that any of them were manifestations of the others. They were presented as special phenomena of nature which the physicists dealt with, unrelatedly.

The chemist had a somewhat similar problem. But in time there grew up physical chemistry, which had one foot in physics