

Satellites, Rockets, Missiles: Their Meaning for Education

The inquiring mind is democratic man's best defense against the forces of cruelty and coercion.

SATELLITES, rockets and missiles have more meaning for American education than either one person or a group can explore in a single article. As Robert Frost once said, "There is no time when I talk or when you talk that we ought not to introduce ourselves with the expression, 'I make bold to say.'" ¹

So, following Frost's advice, I make bold to say that recently dramatized advances into space present American education with new evidence that it must renew and expand its efforts to teach students to strengthen, deepen and broaden their questing. Graduates of our schools, more than ever before, should learn to seek new answers to both old and new problems, to "do their damndest with their minds, no holds barred."

The Questing Intellect

The questing spirit, the curious intellect, the inquiring mind, label it how you will, is among man's most precious attributes, distinguishing him from the animals and setting him just below the gods. With it, he has produced both the giant machines and the intricate satellites which they carry into space. But what else has he produced at the same

time? As orbiting satellites become larger and larger, as space platforms and space ships are manufactured and propelled into their orbits, what will they take with them? Will they draw more and more of man's resources, material and intellectual, into their orbits? Will the demands and challenges of science so overpower art, literature and social sciences that man will lose his humanness? If schools, misled by federal funds, divert undue proportions of their efforts toward the production of scientists, and so limit questing students to a few narrow experiences, may not man tend to lose many of his most lovable and loving qualities?

Questing students, as they develop, need experience in a variety of areas so that they may eventually select the most intriguing problems for a lifetime of activity. Some of the experiences of all students will be in science and mathematics, but awareness of need here should not lead schools to forget that each student deserves the opportunity to explore new relationships in the arts, the humanities, and the social sciences.

Freedom to provide opportunities for questing minds to investigate all that exists or takes place must extend throughout society, especially in the schools, if students are to learn to think to the best of their ability. Extending and

¹ Robert Frost. *A Talk to Students*. Commencement Address at Sarah Lawrence College, June 7, 1956. Distributed by the Fund for the Republic. Quoted by permission of Robert Frost.

prolonging freedom to be curious is as important to science as to the advancement of other fields of knowledge. Years ago, George Stoddard said, "The freedom the scientist demands in order to be productive and original is no inalienable right, for the simple reason that it cannot stand alone."²

Scientists are, perhaps, even more aware than are educators of the dangers of either limiting the areas about which man can inquire or of inducing men to inquire about only a few areas by rewarding scientific studies in such areas so munificently. Their concerns, and ours, are shared by few politicians and few of the military. And public policy seems more likely to be shaped by Congress and the Pentagon than by scientists and educators. The strange idea of raising a generation of captive scientists who may devote their lives to producing satellites, rockets and missiles apparently does not appear strange to those who now have the power to decide.

Slavery, even when produced by the silken bonds of perquisites, prestige and cash, is an ancient attribute of barbarism. Our culture, like all cultures which maintain military forces, includes strong barbaric elements. Democratic civilization, in which man is free to realize his fullest potentialities, and barbarism, in which man preys on man in the struggle for survival, are found side by side in the world today. But conflict between these opposing ways of life is inevitable; they cannot develop along parallel lines indefinitely. In the past barbarism has eventually arrested the development of civilization and ultimately destroyed it.

Egypt, Assyria, Sumeria, Greece, Carthage, Rome—all have fallen before the strength of the barbaric forces which

they embraced, which were indeed part of the structure of their civilization. Today, we cultivate many forms of barbarism, to protect our existence: armies, guided missiles, nerve gases, hydrogen bombs, and captive scientists. The missile which carried Sputnik to the heights symbolizes the extent to which barbarism is already overtaking civilization.

And what remedies are proposed? "The countermeasure," as George Stoddard stated in the speech from which I quoted earlier, "is in itself monstrous—a life underground. Man is driven into the caves from which he emerged only a few thousand years ago, and he no longer feels at home there."³

Man's Victory

If the forces of barbarism continue to strengthen, as has occurred in all previous eras and all previous civilizations, the cost in carnage and waste can be beyond calculation. The holocaust of thermonuclear war, carried on by intercontinental missiles which strike without warning, will produce a desolate world. The Dark Ages of the future, if war comes, will make the Dark Ages of the past seem like a pleasant interlude.

The current press carries some stories which indicate increasing fear of war among men in every nation. Even our adversaries in the communist world seem aware that they would lose far more than they would gain, should armed conflict arise. True, with typical casuistry, they argue that killing with one kind of weapon is better than killing with some other kind. As a matter of fact, once man has decided to kill man, there are no subsequent moral issues in respect to killing.

³ *Ibid.*, p. 27.

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² George D. Stoddard. *Frontiers in Education*. Stanford: Stanford University Press. 1945. p. 27.

Annually the John Dewey Society holds an open meeting on the eve of the ASCD Annual conference. Topics selected are timely and provocative for an audience made up of active participants in the ASCD who have arrived early for conference responsibilities. Texts of this article and the two following it were presented as major addresses at the John Dewey Society meeting, March 1, 1958, in Seattle, Washington. Already scheduled for the eve of the ASCD conference in Cincinnati, Ohio, on February 28, 1959 in honor of John Dewey's centennial is another challenging program: "John Dewey: Exponent of Intellectual Discipline." This will be the tenth annual meeting of the John Dewey Society at the ASCD conference.

Pounding his skull with a club, shooting him with an arrow, piercing him with a sword, smothering him with gas, burning him with a flame thrower, shattering him with a shell, disintegrating him with a hydrogen bomb—all are equally evil. American education, if it is to continue to produce questing minds, must also continue to help man learn to live with man. No more challenging problem confronts us than learning how to become safe from each other.

But, if questing minds are turned away from such great problems, either by restriction or seduction, the chances of the survival of our civilization are lessened. Here, with our great traditions of freedom, we must continue to oppose both restriction and seduction, whether in science or elsewhere. We must continue to strive for more and more free inquiry into more and more areas of human activity. As we do this, and as we teach the young to continue to expand both freedom of inquiry and the activities of questing minds we can again set an example for others to follow. A nation in which people have learned how

to seek answers to their problems and in which seeking is freely done can provide the vision of a brave new world of peace.

And, with peace at hand, there will still be great problems to be solved before man has conquered himself. "A victory of man over himself will not be won easily, and perhaps not at all. There are divisive forces within families, cities, and nations almost as ruinous as international conflict. The dead may not be piled so high, but the psychologically wounded are innumerable. The world of phantasy reaches out; the means of escape are everywhere at hand. With the coming of peace we shall concentrate upon the appalling ravages of alcoholism, disease, drug addiction, delinquency, crime, neurosis and psychosis. We shall seek again the underlying causes of unhappiness, cruelty and aggression. We shall seek not alone antidotes but the positive means of growth and refreshment."⁴

Here are enough complex problems to take up all of the efforts of all of the inquiring minds that the schools can produce. Without these minds, they will remain unsolved for far longer than necessary. With these minds, solutions will come soon enough to enhance man's life in the reasonably near future.

The great challenge to American education in the years of satellites, rockets and missiles, the years which lie immediately before us, is to develop students who will want to know and who will seek knowledge wherever it is to be found, students who will say, as Robert Frost said, "I would rather think, have an idea myself, than have it given to me. . . . But the main thing is to think of it first myself."⁵

⁴ *Ibid.*, p. 32-33.

⁵ Robert Frost, *op. cit.*

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