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# **Sputnik In American Education: A History And Reappraisal**

## **I**

After a decade during which Americans have suffered through the Vietnam war, assassinations of national leaders, racial conflict, the burning of cities, the 1968 Democratic Convention, Kent State, Attica, the drug scene, Watergate, and other outrageous events, it is difficult to remember that there was a time not so long ago when they thought the biggest problem they had to worry about was a Russian satellite orbiting in space. The launching of Sputnik on October 5, 1957, seems very remote and unimportant now. In fact, most Americans today might wish that a space race with the Russians was the most serious problem they faced. At the time, however, Sputnik truly frightened them and subsequently helped bring about changes in American education which are just beginning to be assessed and placed in perspective. A reexamination of the impact of Sputnik on American education is not only interesting in its own right but also provides additional support for the revisionists' claim that educational reform is never undertaken primarily in the interests of youth but rather in the interests of preserving the existing social order, and that the young are viewed by their elders not primarily as ends in themselves but as so many pawns to be played in the game of maintaining that order.

## **II**

The shock that Sputnik caused among the American public actually took some time to set in. In Boston, public reaction was one of massive indifference at first. In Denver, football and the Asiatic flu remained the primary topics of conversation. The only missiles Milwaukeeans were talking about were the

round, white ones Lew Burdette had thrown at the Yankees in winning the second game of the World Series.<sup>1</sup> But as the days went by, with the television networks and newspapers making clear the implications of the Soviet satellite, the public began to appreciate what some of their scientists and high government officials had understood immediately. The Russians had not only one-upped the United States by being first in space, but the rocket power and guidance system it took to orbit the satellite also could be used to hurl thermonuclear warheads at American cities. It appeared that the Soviets had taken a dangerous lead in weaponry. And although Americans joked about Sputnik cocktails (one-third Vodka, two-thirds sour grapes) and "muttnik" (after Sputnik II with a dog aboard was launched), they were not only frightened but angry. Having been led to believe that American science and technology were the envy of the world, they wanted to know why the United States suddenly found itself second best.

A search for the reasons for the American predicament began immediately and became a favorite pastime of the mass media. Although opinions varied, the consensus among informed observers was that the Russians had put a much greater emphasis on rocketry and getting into space first than had the United States. Furthermore, the American space program had been retarded by lack of funds because an economy-minded Eisenhower administration had decided to spend more money on complex defense systems than on the space program. Finally, inadequate or poor integration of the numerous missile and rocket programs had resulted in duplication of effort, loss of time, and inefficient spending.<sup>2</sup>

These reasons did not satisfy all the critics, however. To many, Sputnik represented not only a triumph of Soviet scientific and technological expertise, but ultimately a triumph of the Soviet educational system. It was the Russian schools, they argued, that had produced the scientists and engineers who made the feat possible. Conversely, many thought, the United States found itself second-best in space exploration because its educational system was second-best. It had not produced the experts that an increasingly scientific and technological age demanded. Suddenly, an institution which had been a source of national pride became the scapegoat for a national failure.

The mass media were quick to pick up these criticisms of American education. The press accused the schools of substituting "life-adjustment" education for rigorous instruction in the teaching of mathematics and the sciences,<sup>3</sup> and the publi-

cation of interviews with leading educational critics who charged that educators had neglected the gifted student became commonplace.<sup>4</sup> Shortly after the launching of Sputnik I, the Columbia Broadcasting System televised a program describing the education of a "typical" Russian teenager, one Ivan by name. While Ivan had his share of extracurricular fun in sports and amateur dramatics, he spent the major part of his time learning a good bit of mathematics, drinking deeply of both Russian and Western literature, learning to speak English, and doing plenty of homework. From Moscow, CBS switched directly to Tennessee where it asked a group of American high school students what they thought of Ivan. The general consensus was that Ivan was probably a "drag." One girl doubted that she would have anything to talk to him about. Furthermore, she thought that the things Ivan was studying were not only a waste of time but downright boring. The rest of the students concurred with her judgment. As far as they were concerned, the most important lesson to be learned in school was how to get along with other people.<sup>5</sup> The comparison seemed devastating, especially since the American youth took such pride in their ignorance and manifested the "organization man" philosophy that was under attack in the mid-50s.

Actually, there was nothing very new in all of this. Similar criticisms of American education, and progressive education in particular, had been made before in earlier decades of the 20th century by intellectuals such as Irving Babbitt, Paul Elmer More, Albert Jay Nock, and Robert Maynard Hutchins.<sup>6</sup> These criticisms reached a highpoint between 1953 and 1955 with the publication of Arthur Bestor's *Educational Wastelands*, Hutchins' *The Conflict in Education*, Paul Woodring's *Let's Talk Sense About Our Schools*, Albert Lynd's *Quackery in the Public Schools*, and Rudolph Flesch's *Why Johnny Can't Read*.<sup>7</sup> In the years just after World War II, James Conant, then President of Harvard University, had argued that the United States, as the leader of the free world, could not become complacent, and that its survival depended on the marshalling of its talented youth for scientific and military purposes.<sup>8</sup> Fifteen months prior to Sputnik, Caspar Green had worried in the *Atlantic Monthly* that the "Dullards" were interfering with the education of the gifted.<sup>9</sup> And only a year before, Dr. Vannevar Bush and former Senator William Benton had warned Americans of the great strides the Russians had made in mass education, particularly the training of scientists and technicians, and of the increasing sophistication and capabilities of Soviet science and technology.<sup>10</sup>

But while these criticisms caused some stir among the American intelligentsia, the public remained largely undisturbed.<sup>11</sup> In 1950, for example, *Life* magazine reported that a Roper survey had found that while some Americans were dissatisfied with the schools in their own neighborhoods, on the whole they were basically content with American education. The same issue of *Life* celebrated American education with Henry Steele Commager's famous article, "Our Schools Have Kept Us Free."<sup>12</sup> As Paul Woodring observed, before 1957 Americans by and large assumed that because they had more schools and kept their children in them longer, their educational system must be better. They also found it comfortable to believe that the Russians substituted propaganda for liberal education, that their scientific and technical schools were inferior, and that they had been able to develop an atomic bomb only by stealing American secrets.<sup>13</sup>

What was new about the post-Sputnik criticisms then was that the American public finally took notice. The editors of *Life* now commented:

For years most critics of U.S. education have suffered the curse of Cassandra — always to tell the truth, seldom to be listened to or believed. But now the curse has been lifted. What they were saying is beginning to be believed. The schools are in terrible shape. What has long been an ignored national problem, Sputnik has made a recognized crisis.<sup>14</sup>

*Time* magazine declared, "It seemed for a while that all the critics of United States public education, so vociferous since the war, had just about shot their bolt. Then came Sputnik." Clifton Fadiman added, "What opened our eyes? A flying box containing a dying dog. We are going to reform American education not because we are eager to produce finer citizens but because we are scared stiff."<sup>15</sup>

There was something else that was also new, a new seriousness on the part of the public about education. Benjamin Fine, then education editor for the *New York Times*, reported that while 1957 had begun quietly enough in education, by year's end the two Soviet satellites had changed the public attitude toward education and people were asking whether their children were being educated properly. There was a growing concern over the way Americans had taken education for granted and had defeated bond issues for new buildings and ignored teachers' pleas for higher salaries. And there was a new awareness that education could no longer be treated as a marginal luxury. Education had thus become front-page news. Suddenly the nation had realized that scientific and techno-

logical advances and the public welfare and defense were irrevocably interwoven.<sup>16</sup>

These new attitudes of the American public toward education were reflected in the speeches and writings of leading politicians. Vice-President Nixon, who in the summer of 1957 had told the annual NEA convention that no other institution had contributed more to American progress than the school,<sup>17</sup> now gave his blessings to the critics of education. The fundamental challenge of the Soviet launchings, he declared, was in the field of education. Our military and economic strength could be no greater than our educational system. That was why the American educational system was being subjected to one of the most penetrating periods of criticism and re-examination in our national history. Even though our educational system was good, it could be made better, and, after all, making things better had been "the secret of American progress." Nixon adopted many of the critics' viewpoints. Our major problem, he said, was quality not quantity. We had to have better teachers and less soft courses, for just as a soft physical life results in flabby muscles, a soft mental life results in underdeveloped brains and weak intellects. We also had to place less emphasis on adjustment and more on standards. Students had to be taught to face failure and learn how to compete, just as in real life.<sup>18</sup>

In a similar vein, Senator John F. Kennedy wrote that America's world leadership and survival depended on whether her educational system was capable of meeting the challenge of the day or whether a shortage of teachers, classrooms, and money — with a resulting lack of high-quality education — would prove to be the undoing of the nation. More aid to schools was imperative because the fate of the nation rested on education.<sup>19</sup>

Public concern about education, concern that at times bordered on panic, continued throughout 1958.<sup>20</sup> Fred Hechinger reported that hardly a week passed without several television programs examining education. And when the Rockefeller report on education appeared, it was, not surprisingly, headline news even in small-town dailies.<sup>21</sup>

The Rockefeller report was the product of a panel chaired by John W. Gardner, then president of the Carnegie Corporation, and which included David Riesman and James R. Killian, Jr., president of MIT and then newly appointed Special Assistant to the President for Science and Technology.<sup>22</sup> The report was one of six prepared under the auspices of the Special Project of the Rockefeller Brothers Fund. The Project had

been organized in 1956 to define the major problems and opportunities that the United States would confront in the following fifteen years.<sup>23</sup> Work on the report had begun prior to Sputnik, and this fact undoubtedly helped the report strike a more sober and thoughtful note in the midst of a flurry of polemics on education.

Formally titled *The Pursuit of Excellence*, the report introduced the public to a word that was to be the keynote of educational reform in the next few years.<sup>24</sup> While agreeing that world conditions required us to think of our performance as a nation, the report was fundamentally concerned with the subject of individual excellence, arguing that the fundamental value of a free society was individual dignity and that a nation's greatness ultimately depended on the greatness of the individuals who constituted it.

The report adopted the criticism popularized in the 1950s by Riesman in *The Lonely Crowd* and William H. Whyte, Jr., in *The Organization Man* that "our society has given too little attention to the individual of unusual talent or potentialities." This assertion was not meant to demean society's attempt to raise the general level of achievement. Instead it pointed up the need for attention to the education of the gifted and the need to encourage excellence of all kinds.

Every democracy *must* encourage high individual performance. If it does not, it closes itself off from the main springs of its dynamism and talent and imagination, and the traditional democratic invitation to the individual to realize his full potentialities becomes meaningless. More, perhaps, than any other form of government, a democracy must maintain what Ralph Barton Perry has called "an express insistence upon quality and distinction."<sup>25</sup>

The report noted that Americans had always told themselves that education was vital to the nation's strength, and while it agreed that the times had "grimly underscored the correctness of that view," it argued that it was no longer enough merely to repeat this cliché. Americans had to recognize that in many areas of the nation their educational facilities were poor and their educational effort "slovenly." The schools were overcrowded, understaffed, and ill-equipped. Often chemistry, physics, and mathematics were not offered because there were no teachers to teach them. Teachers were often hard to find for such basic subjects as English and social sciences.

These conditions could not be blamed on educators entirely. The public had demanded the expansion of the educational system but without providing adequate funds for buildings

and salaries. Furthermore, schools had been asked to include in their curricula an incredible variety of subjects in order to assume more and more of the functions of the home, and to take responsibility for virtually every psychic and civic crisis involving young people. The report marveled at the fact that educators had held up under the pressure, and while its authors did not wish to absolve educators of their failures, above all they did not want to absolve the public of its failure. "The fateful question is not whether we have done well, or whether we are doing better than we have in the past, but whether we are meeting the stern demands and unparalleled opportunities of the times. And the answer is that we are *not*."<sup>26</sup>

If the nation was to get the high quality educational programs the times demanded, there would have to be a thorough re-examination of current practices, patterns of organization, and objectives. Americans would also have to overcome the "cult of easiness," the quest for security, comfort, and luxury. A culture, if it is to survive, the report claimed, must offer "great meanings, great objectives, great convictions," and these must inspire the education of its youth.

*The Pursuit of Excellence* seemed to confirm the necessity for the new public seriousness about education. The *New York Times* editorialized that the report was a challenge to Americans to take action before it was too late.<sup>27</sup> The way Americans had thought about education in the past was no longer good enough. Pieties about the value of schooling to democracy without the necessary financial and moral support would no longer do. Americans had to put their money and attention where their mouths were.<sup>28</sup>

The year 1959 brought the climax of post-Sputnik educational criticisms. President Eisenhower condemned the educational philosophy of John Dewey in a letter published in *Life* on March 15, 1959, implying that Dewey was to blame for the embarrassment his administration had suffered. "Educators, parents, and students must be continuously stirred up by the defects in our educational system," he wrote. "They must be induced to abandon the educational path that, rather blindly, they have been following as a result of John Dewey's teachings."<sup>29</sup>

That same year, the Council for Basic Education published *The Case for Basic Education* which accused the schools of shoddy intellectual standards and urged them to upgrade academic requirements.<sup>30</sup> The journal of the American Academy of Arts and Sciences, *Daedalus*, devoted its entire winter

issue to the subject, "Education In The Age Of Science," with such contributors as Arthur Bestor, Sidney Hook, and David Riesman rehearsing by then familiar points of view.<sup>31</sup>

1959 was also the year Jacques Barzun published *The House of Intellect*, an arrogant and elitist tract which once again presented the argument that the school's chief responsibility was to foster ability and achievement.<sup>32</sup> Barzun announced that he was nauseated by the word "education," labelling it "damnable." Besides all the educating for health, character, happiness, and pedestrian safety, there was now driver education, alcohol education, cancer education, and sex education, "just as next to the *Education of Henry Adams* we have *The Education of a Poker Player*." The word "education" should therefore be used only in reference to these subjects and absolutely banned from discussions of "schooling" and "instruction." "Education" never seemed to end, whereas in "instruction" there was a point at which one knew how to read, write, count, speak German, or understand physics. If we really wanted to improve our schools, Barzun declared, we would have to "forget the language and especially the slogans, of mass education." Nonsense such as keeping the schools "democratic" only resulted in neglect of ability differences. It was a "wasteful, dangerous, and unjust attitude." Ability and achievement were too important to the nation to trifle with. The analogy of athletics had to be pressed until everyone recognized "that in the exertions of intellect those who lack the muscles, coordination, and will-power can claim no place at the training table, let alone the playing field."

Barzun concluded that we could not make intellectuals out of two million students since too many were simply incapable of a bookish education and realized themselves that some marketable vocational training was what they needed most. But we could foster ability by selecting those students with a talent for abstraction, articulateness, and ideas by giving them a special schooling. This did not mean the gifted would have to be segregated since they could still share many classes with their peers, but it did mean they would be speeded toward higher goals. In this way the schools could begin honestly to serve the ends of intellect.

The most acerbic criticisms of the schools in 1959 came from Vice Admiral Hyman G. Rickover in his *Education and Freedom*.<sup>33</sup> Rickover's interest in education was stirred by his assignment in 1947 to help build nuclear reactors. In the course of interviewing two thousand men for his engineering group, he was able to find only one hundred fifty who met his re-



quirements. This experience, he said, left a deep impression and led him directly to a study of why the educational system produced so few men who were qualified to do the work necessary for progress. Rickover's study subsequently led him to the conclusions that the schools were the greatest cultural lag in American society and that only massive upgrading of the scholastic standards of the schools would guarantee the future prosperity and freedom of the Republic.

Rickover joined Eisenhower in laying blame for educational failures squarely at the feet of John Dewey and other "educationists." It was they who had led the schools down the road of life-adjustment education and away from their responsibility to provide solid grounding in educational fundamentals. The American people had never authorized the schools to replace education with life-adjustment training and behavioral conditioning, and yet they had permitted the schools to experiment with John Dewey's ideas for a long time.

Rickover admired European schools because they were not "social clubs" or "finishing schools" but aimed at the development of intellectual excellence. If American schools were to meet the requirements of the modern world, they would have to follow this example. Only in this way could the schools hope to produce "the man of the future," the technical expert.

*Education and Freedom* was the climactic statement of post-Sputnik educational criticism. In fact, it can be argued that it was the climax of the educational criticism that had begun in the 1920s. For not only was it the most artless appeal to improve education in order to insure American military superiority (Sidney Hook scowled that it should have been properly entitled "Education for Victory in the Next War"<sup>34</sup>), but one could not read it without a strong feeling of *déjà vu*. It repeated most of the major criticisms of the previous forty years, but without the urbanity or sophistication of a Hutchins or a Bestor. At times Rickover's arguments were amateurish. His learning theory — "the same basic process of storing the mind with knowledge can be adapted for each group of students" — was antedeluvian. His account of how Dewey had corrupted the schools was sheer fantasy. Despite Rickover's sincere concern about America's need for competent and independent minds, *Education and Freedom* came close to being a parody of educational criticism.

### III

There was another reason why 1959 brought the climax of

post-Sputnik educational criticism. James B. Conant's *The American High School Today* was also published that year.<sup>35</sup> While Americans had manifested a new seriousness about education in the months following Sputnik, by 1959 their seriousness had turned to weariness. Conant now told them what they wanted to hear, that the high schools were not that bad after all, and in doing so he put a damper on the criticism of the schools.<sup>36</sup>

Conant's study grew out of his belief that the United States had to develop all the expert manpower it could in order to win the Cold War and his curiosity about just how well talented youth were being educated in American high schools.<sup>37</sup> Conversations with John W. Gardner led to the Carnegie Corporation's commissioning Conant in the winter of 1957 to do a study of the high school. In the aftermath of Sputnik, Conant's report became a best seller.<sup>38</sup>

Conant's approach differed from that of the Bestors and Rickovers. His research group went out and visited over a hundred high schools throughout the country to see what they were actually doing.<sup>39</sup> The results of this empirical study proved a devastating blow to the criticisms of those who had attacked the schools from a purely ideological standpoint.<sup>40</sup>

Conant disdained comparing American education to education elsewhere. Such comparisons left him cold, he said. As far as he was concerned, the only thing there was to compare between two educational systems was the social and political structure encompassing them. The American high school, Conant contended, is a unique institution with no counterpart in any other country. Unlike the German *gymnasium*, for example, it does not provide the students' entire general education and its students do not go directly into professional studies at the university. Instead, the American student takes two to four more years of general education at college before beginning professional studies. Therefore, the standards met upon graduation from high schools are obviously not equal to those met after graduation from the *gymnasium*. Furthermore, the American high school is a comprehensive school which encompasses all the children of a community and attempts to provide an appropriate education for each. For some, a full program of general education is appropriate, but for the majority vocational training is imperative. No one type of education is suitable for all.

Conant did not attempt to answer the question of whether the high schools were good enough. Instead, he asked whether schools met three criteria: (1) Did they provide a good gen-

eral education for all students? (2) Did they provide vocational courses that would enable students to develop skills they could market after graduation? (3) Did they provide the opportunities for the academically able (which he estimated to be approximately 15-20 per cent of the high school population) to take advanced work in science, mathematics, and foreign languages? Although he found only eight schools meeting all three requirements to his satisfaction, he still concluded that aside from needed consolidation of small school districts, no radical alteration in the basic pattern of American education was necessary in order to improve the public schools. If all the high schools were functioning as well as some he had visited, he claimed, the education of all American youth would be satisfactory.

There were, of course, some minor changes that would have to be made. Foreign language instruction had to be improved along with the guidance of more able girls. And Conant did complain that, in general, the academically talented student was not being sufficiently challenged, working hard enough, or pursuing an academic program of sufficient range. But if schools adopted his recommendations for able students and communities began to de-emphasize sports, marching bands, and other extra-curricular activities in favor of academic activities, this situation could be remedied.

Conant restored the faith of Americans in their schools. His report disputed the claim that the schools were in bad shape, while assuring Americans that with more money, community concern, and the adoption of the report's recommendations, the schools could produce students who would meet the manpower needs of America in the Space Age.<sup>41</sup>

Conant's report did not go uncriticized — some charged that it was a whitewash and an attempt to bail out the educational status quo, while schoolmen denied that it was true that able students were not working hard enough — but it did signal the end of the educational storm.<sup>42</sup> By the end of 1960, Fred Hechinger reported that the violent debate between lay critics and professional educators had subsided, and the argument over proposed school reforms was now concentrated within the education profession itself.<sup>43</sup>

#### IV

What can be said about the furor in education that followed Sputnik? First of all, as Burgess and Borrowman have argued, the public dismay that followed Sputnik must be seen as an

expression of the general disillusionment and frustration that Americans experienced in the years after the end of World War II when their hopes for world peace did not materialize.<sup>44</sup> It was similar to the public dismay that had earlier followed the Russian's development of an atomic bomb years before American experts had predicted they would, except this time the Russians had achieved a major scientific and technological advance first. Sputnik made Americans feel even less secure than they felt already.

Secondly, history had left the schools in a position where they were vulnerable to the charges that they were largely to blame for the space gap. The schools, especially the high schools, had in fact drifted towards "life-adjustment" education during the 1930s and early 1940s because they were faced with having to cope with more students staying on in school for longer periods of time than ever before since the Depression had left youth with few other places to go. In an effort to keep this new mass of students sufficiently entertained and in school, educators began to focus on the personal problems of youth and to increase the number of extra-curricular activities. As Burgess and Borrowman remark, "At no other time in our history . . . had it seemed so important that students enjoy what they were about."<sup>45</sup> And in the years during and after World War II, when it became apparent that the mass of youth was in school to stay, educators continued to believe that since the majority of American youth were interested in neither vocational nor college preparation, life-adjustment education was the answer for them. This attitude was symbolized by the famous Educational Policies Commission publication *Education For All American Youth*. The fact that James Conant was a member of the EPC at the time was indicative of the fact that many educators did not regard a rigorous academic program as being suitable for most youth in the post-War world.<sup>46</sup> However, when Sputnik made it appear that the post-War world demanded that American schools stress rigorous academic programs, the emphasis of educators on life-adjustment education proved to be embarrassing.

Furthermore, the "Cold War" among American educators, as Willis Rudy called the battle that had been raging between professional educators and their critics for decades over whether the schools should devote their energies primarily to the education of the gifted or to trying to educate "all" youth, also left schoolmen in a bad position. Educators had always claimed that they were providing an education that met the needs of the gifted as well as those of other students, while

their critics consistently had argued that talented youth were being neglected and lost to the society.<sup>47</sup> Sputnik seemed to prove the critics were right and that if the schools had indeed been attending to the gifted, America would have gotten into space first.

Finally, because of their deep faith in education, Americans not only look to their schools to solve most of their problems, but they frequently blame the schools when things go wrong. It was characteristic therefore that Americans should think that Sputnik was a sign that their schools had failed. It was also natural that they should think the space race could be won if the schools were beefed-up.

## V

Americans wasted little time in trying to do just that. As Sidney Hook has observed, it is no exaggeration to say that before Sputnik and after Sputnik mark two eras in the history of American education.

The nation came out of the shock to its pride and self-confidence produced by the glittering orbit of the Soviet satellites with a frenzied scramble for educational short cuts which would restore its much vaunted technological superiority . . . Crash programs were called for to produce more engineers and scientists, to teach intensive courses in mathematics and sciences at all educational levels, to prune the curriculum of high schools and colleges of the dry rot of needless cultural courses, and to favor the gifted students by accelerating their educational development.<sup>48</sup>

Asa Knowles, then president of the University of Toledo, commented, "Truly our educators and teachers are on the spot! Society is expecting them to fulfill a much more important role than at any previous time in our history. They are expected to produce an intellectual renaissance for the Western world — intellectual leadership on the part of the U.S.A."<sup>49</sup>

An intellectual renaissance was a bit too much to expect, but what did emerge after the dust had settled was a stepped-up attempt to reform curricula and teaching methods. By the end of 1960, Hechinger reported that "the theme for American education was curriculum reform. For the first time in more than a generation American educators were introducing drastic changes."<sup>50</sup>

As several writers have already pointed out, the so-called "revolution" in American education did not begin with Sputnik. Several factors had spurred significant efforts to upgrade the quality of American education earlier in the 1950s. For one thing, the examination of draftees during World War II,

which revealed that many high school graduates were mathematical and scientific illiterates, had aroused the concern of those scientists who made it their business after the war to investigate the quantity and quality of secondary school science and mathematics. According to director E. G. Begle, for example, the roots of the School Mathematics Study Group, founded in 1958, could be traced to a conference of mathematicians held in the early '50s concerning the quality of high school mathematics.<sup>51</sup>

Curriculum reform was also supported at that time by increasingly affluent middle class parents who desired a college education for their children and who assumed that a pre-collegiate curriculum prepared by distinguished scholars would help ready their children to compete for the limited number of college openings.<sup>52</sup>

Another base for the reform movement that pre-dated Sputnik was the knowledge explosion which had left the schools teaching outdated information and which made scholars aware that students had to be acquainted with the theoretical constructs that give "facts" meaning. Consequently, there was a new emphasis on the "structures" of the academic disciplines and the methods of knowing employed by scholars. This new emphasis led, in turn, to an interest in how children could best learn these structures and strategies, and considerable attention to Piaget's studies of children's learning and the problems of programming and instruction.<sup>53</sup>

Probably the most important factor that helped spawn the reform movement, however, was the conviction shared by post-War leaders of the federal-scientific establishment such as Rickover and Conant that the United States had to create the technologically trained manpower and management personnel that the growing electronics, aerospace, and atomic industries required.<sup>54</sup> Their efforts led to the establishment of the National Science Foundation, the Ford Foundation's Fund for the Advancement of Education, and eventually the Carnegie Corporation's support of Conant's study of the high school.<sup>55</sup>

Established as an independent agency of the executive branch in 1950, the NSF was charged with strengthening basic research and education in the sciences. Its budget, which grew from a few hundred thousand dollars in 1950 to \$121 million in 1967, was used in large part to provide fellowships for graduate and post-doctoral students in science; to promote the training of teachers of science, mathematics, and engineering; to improve science and mathematics curricula, especially in the high schools; and to identify talented high school

and college students. The Fund for the Advancement of Education, founded in 1951, supported experimental programs in teacher education, classroom television, teacher aids and similar innovations.<sup>56</sup>

Despite the significance of all these factors, in the end the primary catalyst for the educational "revolution" was Sputnik. Before Sputnik, educational reform was the concern of a few people and a few foundations. After Sputnik it was a matter of national and governmental concern. "Sputnik has been referred to so many times and in so many contexts," writes Goodlad, "that we are too much inclined to ignore or underestimate its significance as a factor productive of school reform."<sup>57</sup>

The National Science Foundation, which had earlier funded the Physical Science Study Committee, now went on to fund such curriculum revision projects as the School Mathematics Study Group and the Biological Sciences Curriculum Study. In 1958, in direct response to Sputnik, Congress passed the National Defense Education Act which provided funds for the U.S. Office of Education to sponsor research and innovation in science, mathematics, modern foreign languages, and guidance. The Act also permitted the federal government to finance new teacher training programs, experiments with new educational methods, educational research centers, and it allowed the federal government to grant money to the states on a matching basis for the purchase of science equipment and the construction of science laboratories in an effort to improve science instruction in the secondary schools.<sup>58</sup> The government-sponsored curriculum reform in science and mathematics also inspired subsequent private curriculum reform projects in the social sciences sponsored by the American Council of Learned Societies and its various members.<sup>59</sup>

It is interesting to note that the curriculum reformers were criticized by such educational scholars as TheodoreSizer and Lawrence Cremin for their apparent lack of concern about the ultimate aims of education.<sup>60</sup> And Charles Silberman later concluded that one of the reasons the new curricula did not have more impact on the schools was their "failure" to give sufficient attention to such questions as "What is education for?" or "What kind of human beings and what kind of society do we want to produce?"<sup>61</sup> But these criticisms really seem a bit strange, if not ludicrous, because if the curriculum reformers failed to write elaborate rationalizations or philosophies of education for what they were doing, it was probably because they felt no need to. The ultimate purposes of the new curri-

cula were undoubtedly clear to them — to produce competent scientists, technicians, and scholars who would insure that the United States survived and maintained its dominant place in the world. Certainly there could have been no doubt in the minds of the Congressmen who rushed to pass the most massive bill for federal aid to education up to that time in American history that these were the ultimate purposes of educational reform. As Burgess and Borrowman argue, at bottom it was the Cold War and the nation's felt need for highly trained manpower that spurred educational reform in the 1950s and 1960s. Any concerns about the humanity of the students themselves or about how education might enrich the quality of their lives necessarily got lost in the shuffle.<sup>62</sup>

## VI

It is now seventeen years since Sputnik was launched; the United States landed on the moon first, and contrary to our worst fears in the fall of 1957, the Russians are not in control of outer space. (Ironically, while the schools were blamed for Sputnik, they were given no credit for the moon landing.) But having taken the lead in space exploration, we now find ourselves in a position we could not possibly have conceived of back then — we have scaled down our space program, and many of the engineers and Ph.D.'s in physics we thought we needed so desperately and expanded our university programs so feverishly to produce are out looking for work. The Vietnam war drained off resources that might have been spent on space research, and our increasing domestic problems over the last several years have made space exploration seem less and less crucial, a luxury on which we can no longer afford to spend so much of our national treasure.

In the field of education we also find ourselves in a situation we could not possibly have imagined seventeen years ago when the paths that educational reform needed to take seemed so clear. The rebellions of minority groups and middle-class youth against their educational predicaments in the 1960s have made the arguments of the 1950s over academic rigor and "life-adjustment" seem ancient.<sup>63</sup> Certainly the obsession of Sputnik era critics with the education of the gifted seems extremely elitist and snobbish indeed after a period in which we have become acutely aware of the educational oppression of the poor. Even the 1950s stress on individualism seems rather excessive now that we have begun to rediscover the virtues of collectivism and to realize that the pursuit of individualism



often ends in loneliness, unhappiness, and ecological disaster, among other things.<sup>64</sup>

Furthermore, despite all of the changes that the curriculum reform movement introduced into schools, at bottom schools appear to have changed little.<sup>65</sup> Jerome Bruner has also recently confessed that the new curricula did not seem to meet the intellectual needs of either advantaged or disadvantaged youth and that he is now at something of a loss to know exactly what to suggest in the way of educational reform.<sup>66</sup> As a result of all this, we now find ourselves debating proposals for reform — even proposals to deschool society — that would have seemed absolutely soft-headed or preposterous in the late 1950s. In fact, the current educational enthusiasm, open education, is to a large extent progressive education resurrected. We have come full circle.

Going through cycles of reform is, of course, a characteristic feature of American education. In the last forty years, we have gone from the child-centered educational rhetoric of the 1930s to the society-centered rhetoric of the 1950s back to the child-centered rhetoric of the 1970s. This has been a function not only of such immediate crises as Sputnik and the rebellions against schools and colleges in the 1960s, but also a function of the ups and downs of the labor market, with child-centered rhetoric dominating during periods of labor surplus and society-centered rhetoric dominating during periods of labor shortage.<sup>67</sup> When there are few places for the young to go in the society, educators start stressing the importance of making educational practice humanistic and directing it towards the individual development of students. When the society suddenly finds itself in need of certain kinds of personnel, however, humanistic pretenses are thrown to the wind in the interests of grinding out manpower. Interestingly, foundations such as the Carnegie Corporation have responded to periods of educational crisis by supporting the studies of moderates appropriate to the particular crisis — Conant in the '50s, Silberman in the '70s — thus co-opting demands for the radical reform of schools and recommending limited changes aimed at bailing out the educational system, preserving the social order, and keeping things on an even keel.<sup>68</sup>

What makes this business of rushing from one hysterical period of reform to the next so insidious then is the obvious fact that reform is never undertaken primarily for the sake of young people's welfare, but rather for the sake of preserving the existing social, economic, and political system. And it is not just the extent to which young people are treated as the

tools of state and private interests that is so disturbing, but it is also the fact that the educational establishment always moves so quickly and mindlessly to support a social order which, as the years since Sputnik have made clear, is so inhumane. A social order that uses its scientific and technological expertise not only to land men on the moon but to rain terror on the Indochinese, that keeps a huge portion of its population in poverty and misery, that periodically finds it necessary to have an economic recession, that renders meaningless and ruins the lives of even those members who have achieved the American Dream is not worthy of the support of educators or anyone else.<sup>68</sup> Charles Silberman is more right than he understands when he argues that America's most pressing educational problem now "is not how to increase the efficiency of the schools; it is how to create and maintain a humane society."<sup>69</sup> It seems finally to have dawned on Jerome Bruner as well that the issue is no longer "which way educational reform" but rather hinges on our capacity to create a culture that not only feeds us but keeps us caring and belonging.<sup>71</sup>

Contrary to the persistent American belief, however, a more humane and just society will never come simply through better schooling, but only through direct political action aimed at achieving that end. Whether American society will ever consent to making the radical changes that are needed to make it reasonably humane and just for most people is, of course, an imponderable question given the conservative history of American reform movements. But unless it does, the schools will continue to reflect the injustices of the social order, they will continue going through periods in which they are either trying to train manpower or just keep youth happy, and the lives of the young will continue to be sacrificed on the altar of social necessity.

## notes

1. Richard Witkin, ed., *The Challenge of the Sputnik*, Garden City, N.Y.: Doubleday, 1958, p. 3.
2. H. B. Parkes and V. P. Carosso, *Recent America: A History*, Vol. II, New York: Thomas Y. Crowell, 1963, p. 467.
3. Merle Curti, *The Social Ideas of American Educators*, Paterson, N.J.: Littlefield, Adams, 1965, p. xxxv.
4. See, for example, an interview with Arthur Bestor entitled "What Went Wrong with U.S. Schools," in *U.S. News and World Report*, January 24, 1958, pp. 68 ff.

5. Fred M. Hechinger, *The Big Red Schoolhouse*, Garden City, N.Y.: Dolphin, 1962, pp. 23-24.
6. Clarence Karier, *Man, Society, and Education*, Glenview, Ill.: Scott, Foresman, 1967, pp. 184-216. See also Willis Rudy, *Schools in an Age of Mass Culture*, Englewood Cliffs, N.J.: Prentice-Hall, 1965, pp. 309-340, and Charles Burgess and Merle L. Borrowman, *What Doctrines To Embrace*, Glenview, Ill.: Scott, Foresman, 1969, p. 126.
7. For capsule summaries and analyses of these works see Lawrence A. Cremin, *The Transformation of the School*, New York: Vintage Books, 1961, pp. 324-347; Rudy, *loc. cit.*; and Robert McCaul, "Twentieth Century Books Influencing American Education," *Education Digest*, XXXVI, No. 1 (September, 1970), pp. 71-82.
8. James B. Conant, *Education in a Divided World*, Cambridge, Mass.: Harvard University Press, 1948. See also Thomas Grissom, "Education and the Cold War: James B. Conant," in Clarence J. Karier et al., *Roots of Crisis: American Education In The Twentieth Century*, Chicago: Rand McNally, 1973, pp. 193-194. It was also at the urging of Conant that the Educational Policies Commission had issued a statement on *Education For The Gifted* in 1950. See Conant's brief biography in The National Society For The Study Of Education, *Leaders In American Education*, Chicago: The University of Chicago Press, 1971, pp. 126-128.
9. Rudy, p. 175.
10. Frank G. Jennings, "It Didn't Start With Sputnik," *Saturday Review*, September 16, 1967, p. 96. Benton published what seems to have been the first article in a large-circulation publication dramatizing the Russian educational challenge under the title "Now the 'Cold War' of the Classrooms" in *The New York Times Magazine* of April 1, 1956. This article and his subsequent reports and warnings were published in book form two years later under the title *This Is The Challenge*, New York: Associated College Presses, 1958.
11. See Paul Woodring's introduction to Hechinger, p. 10.
12. See *Life*, October 16, 1950, p. 11, and pp. 16-17.
13. Hechinger, p. 10.
14. "Crisis In Education," *Life*, March 24, 1958, p. 25. This was the first in a series of *Life* articles on the "Crisis In Education," the remainder of which appeared in the issues for March 31, April 7, 14, and 21, 1958. The series is representative of popular educational journalism in the months after Sputnik and dealt with such topics as the poor working conditions of teachers, the neglect of gifted children, the Physical Science Study Committee, and the influence of the family on learning.
15. "What Price Life Adjustment?" *Time*, December 2, 1957, p. 53, and Clifton Fadiman, "The Mess in Education — Who Is Responsible?" *Reader's Digest*, October, 1958, p. 51, both quoted in David W. Martin, "American Education As Seen in Periodical Literature, 1956-58," unpublished Ph.D. dissertation, Ohio State University, 1959, p. 143.
16. Benjamin Fine, "Education In Review: Year Has Brought An Awareness of the Need For a Better System of Schools," *The New York Times*, December 29, 1957, p. 7E. The degree to which education had taken on added importance in the public mind was well

illustrated by the increase in periodical articles devoted to education. During the year after Sputnik, the number of articles devoted to education in mass circulation periodicals increased by 30 per cent. See Martin, p. 141.

17. National Education Association, *Proceedings*, (1957), p. 55.
18. Richard M. Nixon, "A Challenge To American Education," *School and Society*, LXXXVI (September 27, 1958), p. 103.
19. John F. Kennedy, "The Fate of the Nation," *NEA Journal*, XLVII (January, 1958), pp. 10-11.
20. An example of the hysteria over education at the time is an advertisement which appeared in an October, 1958 issue of *Newsweek* and was later reprinted in *Reader's Digest* that warned, "Johnny had better learn to read. Because you can bet Ivan is spending a lot of time on his books." "We Americans don't want to move the world. But we don't want anyone else to either." See Rudy, p. 175.
21. Fred M. Hechinger, "Five Basic Problems of Education," *The New York Times Magazine*, January 25, 1959, p. 11.
22. Riesman himself had offered an analysis of the ills of American education in 1956 in *Constraint and Variety in American Education*. See Rudy, pp. 330-332.
23. *Prospect For America: The Rockefeller Panel Reports*, Garden City, N.Y.: Doubleday & Co., Inc., 1961, pp. xv-xviii.
24. Rockefeller Brothers Fund, Inc. *The Pursuit of Excellence: Education And The Future of America*, Garden City, N.Y.: Doubleday, 1958. Gardner later elaborated on the theme of excellence in two books, *Excellence*, New York: Harper & Row, 1960 and *Self-Renewal*, New York: Harper & Row, 1963.
25. *Ibid.*, p. 16.
26. *Ibid.*, p. 22.
27. "The Educational Challenge," *The New York Times*, June 29, 1958, IV, p. 8:2.
28. The Educational Policies Commission, in a statement entitled *The Contemporary Challenge to American Education*, Washington, D.C.: National Education Association, 1958, arrived at conclusions similar to those of the Rockefeller panel. A statement issued the following year by the President's Science Advisory Committee, *Education for the Age of Science*, Washington, D.C.: U.S. Government Printing Office, 1959, was also reminiscent of the Rockefeller report.
29. Quoted in Sidney Hook, *Education For Modern Man*, New York: Alfred A. Knopf, 1963, p. 11.
30. James D. Koerner, ed., *The Case for Basic Education*, Boston: Little, Brown, 1959.
31. *Daedulus*, LXXXVIII (Winter, 1959).
32. Jacques Barzun, *The House of Intellect*, New York: Harper Torchbook, 1961.
33. Hyman G. Rickover, *Education and Freedom*, New York: E. P. Dutton, 1959.
34. Hook, p. 11.
35. James B. Conant, *The American High School Today*, New York: The New American Library, 1964.

36. Karier, *Man, Society, and Education*, p. 254.
37. NSSE, pp. 132-133.
38. Conant himself commented that "the Russians really put Sputnik up right on schedule in 1957 for my purposes. That book was addressed to 20,000 local school boards, all under tremendous pressure from Sputnik." See Terry Ferrer, "Conant Revisited," *Saturday Review*, March 18, 1967, p. 57.
39. James Koerner complained, however, that there were no recognized scholars in any subject involved in Conant's study. See Koerner, p. viii.
40. Karier, *Man, Society, and Education*, p. 253.
41. The Educational Policies Commission's *An Essay on Quality in Public Education*, Washington, D.C.: National Education Association, 1959, apparently influenced by Conant who was a member of the Commission, made recommendations similar to those of Conant's report.
42. For additional criticisms of Conant's study, see Rudy, p. 320.
43. F. M. Hechinger, "Education: The Trends of 1960," *The New York Times*, January 1, 1961, IV, p. 8:1.
44. Burgess and Borrowman, p. 125.
45. *Ibid.*, p. 121.
46. It is clear, however, that Conant had always been concerned about the education of the gifted. This was demonstrated by the fact that at the same time he was participating in the writing of *Education For All American Youth*, he had established the Harvard committee that authored *General Education in a Free Society*, which stressed the importance of high schools giving special attention to the gifted. Conant saw no contradiction between the two documents. See NSSE, pp. 122-126, Burgess and Borrowman, pp. 129-130, and Grissom, pp. 189-193.
47. Rudy, pp. 309-340.
48. Hook, p. 9.
49. Asa S. Knowles, "Education As An Instrument Of National Policy," *Phi Delta Kappan*, XXXIX (April, 1958), p. 309.
50. Hechinger, "Education: The Trends of 1960," p. 8:1.
51. John I. Goodlad, "The Curriculum," in The National Society For The Study Of Education, *The Changing American School*, Chicago: The University of Chicago Press, 1966, p. 31.
52. *Ibid.*, p. 36.
53. *Ibid.*, pp. 37-38. These themes were discussed in Jerome S. Bruner, *The Process of Education*, New York: Vintage Books, 1960, and W. Kenneth Richmond, *The Teaching Revolution*, London: Methuen, 1967.
54. Burgess and Borrowman, pp. 117, 125, and 136. See also Grissom, pp. 193-194.
55. Jennings, p. 96.
56. The Ford Foundation has recently published an assessment of The Fund's attempts to generate educational reform entitled *A Foundation Goes To School*. The general finding was that the attempts had failed because of the conservatism of educators and school systems.

57. Goodlad, p. 35.
58. This description of the NDEA provisions is based on the one given in S. Alexander Rippa, *Education in a Free Society*, New York: David McKay, 1967, pp. 334-335. The NDEA act was renewed by Congress in 1964 and expanded to provide funds for the improvement of instruction in reading, English, geography, history, and civics.
59. Descriptions of these and most other curriculum projects may be found in John I. Goodlad, *The Changing School Curriculum*, New York: The Fund for the Advancement of Education, 1966.
60. TheodoreSizer, "Reform Movement or Panacea," *Saturday Review*, June 19, 1965, and Lawrence A. Cremin, *The Genius Of American Education*, New York: Vintage Books, 1966, pp. 57-58.
61. Charles E. Silberman, *Crisis In The Classroom*, New York: Random House, 1970, p. 182.
62. There were a few educators who managed to keep their wits about them. See, for example, Philip H. Phenix, "Necessity and Educational Policy Reconsidered," *Phi Delta Kappan*, XL (April, 1959), pp. 269-271. Among other things, Phenix argued incisively that "The true necessities of our nation's life today are the compulsions of knowing the truth and doing the right, and these are and have always been the proper goals of education. Insofar as educators become instruments for a national policy more narrowly conceived — in particular, in terms of a power struggle — they not only prove themselves unfaithful to their professional trust, but ultimately disloyal to their nation and to humanity."
63. Ronald and Beatrice Gross, eds., *Radical School Reform*, New York: Simon and Schuster, 1969, p. 13.
64. For a discussion of the poverty of individualism, see Philip Slater, *The Pursuit of Loneliness*, Boston: Beacon Press, 1970.
65. Silberman, p. 159.
66. Jerome S. Bruner, "The Process of Education Revisited," *Phi Delta Kappan*, LIII (September, 1971), pp. 18-21.
67. Karier, et al., *Roots of Crisis*, p. 137. On this point see also Burgess and Borrowman, pp. 118-126.
68. *Ibid.*
69. On the issue of what American culture does to even its more fortunate members, see Slater and Anne Roiphe, "'An American Family': Things are Keen but Could be Keener," *The New York Times Magazine*, February 18, 1973, pp. 8 ff.
70. Silberman, p. 203.
71. Bruner, p. 21.