GENERAL SCIENCE

Candidates on Science

The presidential candidates give their views on science and technology. Nixon emphasizes need to train scientists and educate public. Kennedy discusses automation.

Nixon Statement

NEED FOR SCIENCE EDUCATION for the public is critical and urgent, Vice President Richard M. Nixon told SCIENCE SERVICE.

A general public with "a high degree of scientific literacy" is as necessary for the maintenance of the national scientific effort as are highly trained scientists and engineers, he said.

Science and technology play an increasingly important role in political, economic and social areas. Public understanding of the interrelationship is essential for "sound, long-term national policies and programs." The Vice President stressed the importance of achieving balance in education in the fields of both science and the humanities in order to produce citizens capable of meeting the challenge of this new age.

Following is the complete text:

Nothing could be more obvious than the impact of science and technology on our national life—indeed, on our very survival.

But because our attention is focused so largely on the dramatic and the spectacular —on satellites and missiles and space exploration—we may tend to lose sight of the almost routine interrelation of scientific advance and our day-to-day lives: in the fields of health and nutrition, communications of every form, business and industry, and all the processes of an abundant and productive living standard. The potentials opened to us by science and technology—for our material convenience and our cultural growth—are limitless.

This close and constant interrelationship raises two great problems for all of us. The first, of course, is the critical need to train scientists and engineers, skilled in the latest developments of this new and revolutionary age and prepared to push still farther ahead.

But there is a second and equally important area of concern. We also need scientific education for the general public. If our national scientific effort is to be maintained, the American people must have deeper motivations than simply a desire for immediate practical benefits. This new age will require of the public generally a high degree of scientific literacy and the blending of science into our total culture and way of life.

Increasingly, major national decisions—political, economic and social — involve scientific and technological decisions. Obtaining adequate public support for projects with obvious military value is relatively easy. But we need a high level of public understanding to develop sound, long-term national policies and programs.

It is not a question of making every citizen into a scientist: what we must try to do is provide for the nonscientists the insight and understanding with respect to science that we have historically sought to give all our citizens in the general field of the humanities. What we need is continued public support for basic research.

This will require a judicious sense of balance. We must avoid turning out future generations of scientific materialists or automatons. By balancing scientific and humane education, our aim must be men and women in every field who are ready to assume the total responsibilities of citizenship in a free society.

This, I find, is a view which is held by all our top scientists. They well recognize the need for highly trained scientists and engineers if we are to maintain our position of world leadership.

But we must not and will not depend on forced-draft or on arbitrary selection. The scientists and engineers who have contributed so much to America's greatness chose their careers freely. They realized the importance of this work; they were challenged by its vast frontiers; they saw its opportunities and were willing to undergo the rigorous preparation. They made their choice with greater freedom than is allowed anywhere else in the world.

This is the crucial ingredient of America's scientific and technological greatness up to now—and so it must continue to be.

Kennedy Statement

THE REPLACEMENT of men by machines is the "challenge" of "a new industrial revolution — the revolution of automation," Democratic presidential nominee Sen. John F. Kennedy (D.-Mass.) told SCIENCE SERVICE.

The advance of automation, said the Senator, is threatening thousands of jobs and entire plants, and is creating fear among workers and their families.

"It is menacing the existence of entire communities," he stated.

The threat of automation, however, can be turned into "the key to a brighter future" if labor and management and Government "work together to ease the inevitable dislocations and hardships which this new industrial revolution will bring."

The Democratic leader indicated that the challenge of technological progress can be met with Federal help and planning which would assure increased productivity by automation while at the same time "providing new jobs and new hope for the victims of industrial advance."

Sen. Kennedy expressed his faith in labor's support for technological advances even though they may threaten jobs.

"No one wants to work the old, backbreaking way if there is an easier way to do the job. No worker and no labor leader wants to stand in the way of America's economic growth," Sen. Kennedy said.

His complete statement follows:

Today we stand on the threshold of a new industrial revolution—the revolution of automation. This is a revolution bright with the hope of a new prosperity for labor and a new abundance for America—but it is also a revolution which carries the dark menace of industrial dislocation, increasing unemployment, and deepening poverty.

Already entire automobile engines are being manufactured, untouched by human hands. Modern lathes and drills are turning out parts machined to the closest tolerances, guided only by electrical impulses which make the settings and automatically correct all errors. Electronic equipment is sorting material as it enters a warehouse and carrying it—without human guidance —to its proper place of storage. And in the future, as the complexity, the versatility, and the precision of modern technology continue their inevitable advance, thousands of processes and functions now performed by men will be done, more cheaply and more efficiently, by machine.

These revolutionary changes in the nature of our industrial system are a challenge to our leadership, our vision and our resourcefulness. For the steady replacement of men by machines—the advance of automation—is already threatening to destroy thousands of jobs and wipe out entire plants. It is creating fear among workers, and among the families of workers. It is menacing the existence of entire communities. And it can create poverty and want and even hunger—as it has already done in the coal mines of West Virginia where I saw the sad spectacle of men, displaced by machines, unable to find work, unable to shelter their families, and unable to feed their children—the forgotten children of the richest country in the history of the world.

But this is not the inevitable product of advancing technology. We have not created new machines so that they can destroy our prosperity and our economic health. Today —as we have done in the past—we must translate our skill and our inventive genius into abundance and strength and a better life for all Americans.

Only because advancing knowledge has been adapted to the production of goods, are washing machines, and television sets, and automobiles and electric lights and a thousand other products, now within the range of the average income. And only because of new discoveries do we enjoy the unparalleled luxury of being the first nation ever to worry about an overabundance of goods. The history of man's economic progress has been the history of such discoveries: Looms replaced hand weavers. Electric motors replaced human muscle. Bulldozers and hydraulic lifts

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have replaced men digging with shovels and straining at heavy weights. And each advance—each more efficient machine—has not only increased production and raised our standard of living, but it has also improved drastically the hours and the conditions of labor. In an eight-hour day, five-day week, the modern worker produces more than twice as much as his grandfather did, working twelve hours a day, six days a week.

And there is no reason why the advances of the future—like those of the past—should not bring even greater changes, easing the conditions of labor, shortening hours, lightening work, and bringing new and cheaper and better products into every American home.

But if this vision of a stronger and more prosperous America is to become a reality—if automation is to be the key to a brighter future rather than the forerunner of economic distress—then labor and management and Government must work together to ease the inevitable dislocations and hardships which this new industrial revolution will bring. No one—especially labor—is opposed to economic progress. No one wants to work the old, back-breaking way if there is an easier way to do the job. No worker and no labor leader wants to stand in the way of America's economic growth. No one wants to keep his fellow worker from sharing the benefits of increased productivity. But our workers do want assurance that they will not be tossed on the scrap heap and forgotten like so many obsolete machines—that they will not be the neglected victims of industrial change, shut off from the new richness which their skill and labor has helped to create.

This, then, is the challenge to American leadership: to welcome and stimulate technological progress—with its promise of increasing productivity—while providing new jobs and new hope for the victims of industrial advance.

• Science News Letter, 78:83 August 6, 1960

PSYCHIATRY

Do Not Try to Jolly Suicidal Person

DO NOT TRY to jolly a deeply depressed person who is threatening suicide out of his "blues," Dr. Joseph Hirsh of Yeshiva University, New York, warns. Not only is argument or jollying ineffective, it may actually increase the person's depression and push him closer to suicide, he indicates.

Do not take lightly suicide threats, Dr. Hirsh warns. In a study of the history of a group of suicides, it was found that 68% had previously expressed suicidal ideas and 38% had specifically stated that they intended to kill themselves.

It is not wise to take lightly even what appears to be casual talk about suicide. The various fantasies and ideas, or more specific statements of intent should be taken with the utmost seriousness, Dr. Hirsh advises.

Psychiatrists have questioned the wisdom of putting the depressed person who is brooding about suicide into a mental hospital. Taking him away from his job and his home may make him desperate enough to turn his suicidal thoughts into suicide itself.

But neither should the mental hospital patient be prematurely discharged from the hospital. A number of depressed patients have killed themselves within eight months after discharge from a psychiatric hospital.

Suicide prevention and control should not be left entirely to the medical profession, Dr. Hirsh says in Mental Hygiene, 44:382, 1960.

"Suicide prevention is everyone's business, and the sooner the recognition that suicide is more than a final fact but a long process with many prominent and measurable antecedents, the greater is the likelihood that much can be done to prevent it."

Susceptibility to suicide is lowest among those who have strong family ties, church, work and community relationships. Single persons, the widowed and divorced generally have higher suicide rates than married people.

For persons in depression, the early morning hours may be critical from a suicidal point of view.

Suicide is rarely an impulsive, highly agitated, unpremeditated act. It is generally a well-defined, deliberate act.

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PSYCHOLOGY

Parents Love Children They Put in Institutions

PARENTS who put a retarded child in an institution love him just as much as those who keep him at home. Four completely different factors influence the institutionalization of retarded persons.

At a conference on scientific study of mental deficiency held in London, England, Dr. Gerhart Saenger, director of the Research Center of New York University's Graduate School of Public Administration and Social Service, presented the findings of a two-year study of factors influencing institutionalization of retarded persons in New York City. The study was released in Albany, N. Y., by Dr. Paul H. Hoch, New York State Commissioner of Mental Health.

The four factors are:

1. The degree of mental retardation. (All with an intelligence quotient of less than 20 are normally committed.)

2. The family income and racial background.

3. Family adequacy. (Conditions in substandard homes or slum areas often determine that a child shall be put in an institution.)

4. Adjustment of the retarded child to the community. (Sexual offenses were found to lead almost invariably to placement in an institution.)

One of the most significant findings of the study was the fact that parents do not love their retarded child less if they decide to send him to an institution.

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INVENTIONS

Automobile Owners Benefit from New Patents

AUTOMOBILE OWNERS and drivers may well profit by one of the 942 patents issued this week—a burglar alarm that may be placed anywhere in the car.

The burglar alarm, for which Otto C. Wehrig of Seguin, Texas, was awarded patent No. 2,946,867, is simple in design, consisting of a block of some material such as wood or plastic, two wires and a steel ball.

The block contains a funnel-shaped hole in the top that leads into a horizontal tube through the block. At the top of the funnel there is a ledge with a slight rim on the inside and a relatively high wall on the outside. Two parallel wires are set in the floor of the horizontal tube so they do not touch one another, and these are connected into the horn circuit.

To set the alarm, the steel ball is placed on the ledge at the top of the block. Unauthorized activity in the car will jolt the ball off the ledge so that it will drop through the funnel into the tube to form a contact between the two wires. The horn will sound and continue to do so until the steel ball is removed or the battery runs down.

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