AUTOMATION

Can Americans Adjust?

The economic and social impact of the rising tide of technological changes promises to be harsh, but optimists foresee a rosy future in its wake—By Walter Wingo

➤ "AUTOMATION—Good or Bad?" has become a favorite question for school debate teams. It has replaced such weary topics as high and low tariffs and the merits and demerits of recognizing Red China.

Both "pro" and "con" teams generally agree that automation, good or bad, will bring certain inevitable results.

For one thing, we can expect pleas for still more Federal controls as automation builds up steam and its economic and social effects become more complex.

Modern mechanization is expensive, and only the larger companies can afford much of it. Thus automation threatens to erode the foundation of American competitive economy—the small businesses.

If automation fails to supply more jobs than it eliminates, the jobless will swamp the Government with requests for help. How long could capitalism as we know it withstand such a strain?

But a nation that tries to pull the reins on automation runs the risk of weakening itself in the foreign market. The Soviet Union, Western Europe and Japan are rapidly becoming automated. From the rubble of war they have built modern factories using the latest equipment, including computers.

It is estimated that it would cost $95 billion to tear down America's obsolete industrial machinery and replace it with modern, automated equipment.

Even more cumbersome will be the task of reconstructing our educational system to serve an automated society. There will be the obvious need to prepare youths for job openings expected in expanding fields such as scientific research.

Leisure Time Increased

Education's greater challenge will be that of preparing people to live meaningfully in a world of ever-increasing leisure time. Knowledge of the humanities and the creative arts takes on new value in a highly technological society.

Man will have to make many moral adjustments, too, if he is to adapt to a leisured society. He will have to alter his age-old concept of work, which the Greek poet Hesiod expressed this way: "Before Virtue the immortal gods have put the sweat of man's brow."

While work already has lost some of its status as a virtue, so, under automation, it is expected to lose its function as a symbol of status itself. Dr. Edward T. D. Calhoun of Bell Telephone Laboratories has a theory that our culture determines a person's worth by how important he is to the operation of the system in which he works.

If the theory is true, automation will force a change in the practice. Automatic systems will take over the chores that so many men feel are uniquely their own. Automation thus will revolutionize even the way we evaluate ourselves.

If there is truth to the old saw about idle hands being the devil's workshop, increased leisure from automation will result in an enormous crime problem, too.

Contemplate Bright Side

It is, however, more fun to contemplate the bright side of what is just around the corner. Consider this prediction by Dr. Yale Brozen, professor of business economics at the University of Chicago:

"The common man will become a university-educated world traveler with a summer place in the country, enjoying such leisure time activities as sailing and concert-going; able to call on superior medical services to maintain his health, eating exotic foods from the far corners of the world in fine restaurants, and living in a home equipped with beautiful furniture and paintings."

Such is the rosy picture envisioned by the pro-automation people, and this idea of a new slaveless Athens may well be the one that will be accepted by the American people. After all, who doesn't want to live a little?

(Last in a series of five)

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TECHNOLOGY

Harvard Computer Finds English Language Fuzzy

➤ ALTHOUGH there is usually only one correct way to diagram a sentence, Harvard University's youngest English student, an International Business Machines 7090 computer, does not agree.

Armed with some 3,000 grammatical rules and 20,000 vocabulary words by its teachers, Prof. Anthony Oettinger and Susumu Kuno, the computer is analyzing English in the same way most high school freshmen do—subject, predicate, object, etc.

But whereas human understanding interprets a sentence like 'Time flies like an arrow," in only one way, the machine is more broad-minded. Among its interpretations would be, "Determine the speed of flies as quickly as you can," and "A species of fly, called time flies, enjoy an arrow."

The problem of reducing the way people understand a language to the formal code of a computer is one of semantics, the science of meanings. Using the "automatic syntactic analysis" developed by a group of Harvard researchers under Prof. Oettinger's direction, the machine interprets language in all ways allowed by grammatical rules.

Although it will be a long while before computers replace humans in translating languages or answering questions in everyday language, the Harvard computer is still valuable in helping researchers explore the ambiguities of the English language.

Lawyers, for example, can test the different meanings of their statements before ever going to court or writing a legal document.

The two Harvard researchers reported the progress of their "student" at the joint fall computer conference of the American Federation of Information Processing Societies in Las Vegas.

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Fremont Davis

SERVICE WITH A DIAL—At the Cafe de la Pay, tall vending machines upon the twist of a dial do almost everything once done by a team of cafeteria workers. The lady in the background is putting a polyfoam plate of frozen meat loaf into a microwave oven. The machine at her right changes dollar bills.