

IS IT A DREAM OR A NIGHTMARE?

IN 1960 the weekly *l'Express* of Paris published a series of extracts from texts by American and Russian scientists concerning society in the year 2000. As long as such visions were purely a literary concern of science-fiction writers and sensational journalists, it was possible to smile at them. Now we have like works from Nobel Prize winners, members of the Academy of Sciences of Moscow, and other scientific notables whose qualifications are beyond dispute. The visions of these gentlemen put science fiction in the shade.

By the year 2000, voyages to the moon will be commonplace; so will inhabited artificial satellites. All food will be completely synthetic. The world's population will have increased fourfold but will have been stabilized. Sea water and ordinary rocks will yield all the necessary metals. Disease, as well as famine, will have been eliminated; and there will be universal hygienic inspection and control. The problems of energy production will have been completely resolved. Serious scientists, it must be repeated, are the source of these predictions, which hitherto were found only in philosophic Utopias.

The most remarkable predictions concern the transformation of educational methods and the problem of human reproduction. Knowledge will be accumulated in "electronic banks" and transmitted directly to the human nervous system by means of coded electronic messages. There will no longer be any need of reading or learning mountains of useless information; everything will be received and registered according to the needs of the moment. There will be no need of attention or effort. What is needed will pass directly from the machine to the brain without going through consciousness.

In the domain of genetics, natural reproduction will be forbidden. A stable population will be necessary, and it will consist of the highest human types. Artificial insemination will be employed. This, according to [Nobelist Hermann J.] Muller, will "permit the introduction into a carrier uterus of an ovum fertilized *in vitro*, ovum and sperm . . . having been taken from persons representing

the masculine ideal and the feminine ideal, respectively. The reproductive cells in question will preferably be those of persons dead long enough that a true perspective of their lives and works, free of all personal prejudice, can be seen. Such cells will be taken from cell banks and will represent the most precious genetic heritage of humanity. . . . The method will have to be applied universally. If the people of a single country were to apply it intelligently and intensively . . . they would quickly attain a practically invincible level of superiority. . . ." Here is a future Huxley never dreamed of.

PERHAPS, instead of marveling or being shocked, we ought to reflect a little. A question no one ever asks when confronted with the scientific wonders of the future concerns the interim period. Consider, for example, the problems of automation, which will become acute in a very short time. How, socially, politically, morally, and humanly, shall we contrive to get there? How are the prodigious economic problems, for example, of unemployment, to be solved? And, in Hermann Muller's more distant Utopia, how shall we force humanity to refrain from begetting children naturally? How shall we force them to submit to constant and rigorous hygienic controls? How shall man be persuaded to accept a radical transformation of his traditional modes of nutrition? How and where shall we relocate a billion and a half persons who today make their livings from agriculture and who, in the promised ultrarapid conversion of the next forty years, will become completely useless as cultivators of the soil? How shall we distribute such numbers of people equably over the surface of the earth, particularly if the promised fourfold increase in population materializes? How will we handle the control and occupation of outer space in order to provide a stable *modus vivendi*? How shall national boundaries be made to disappear? (One of the last two would be a necessity.)

There are many other "hows," but they are conveniently left unformulated. When we reflect on the serious although

relatively minor problems that were provoked by the industrial exploitation of coal and electricity, when we reflect that after a hundred and fifty years these problems are still not satisfactorily resolved, we are entitled to ask whether there are any solutions to the infinitely more complex "hows" of the next forty years. In fact, there is one and only one means to their solution, a world-wide totalitarian dictatorship which will allow technique its full scope and at the same time resolve the concomitant difficulties. It is not difficult to understand why the scientists and worshippers of technology prefer not to dwell on this solution, but rather to leap nimbly across the dull and uninteresting intermediary period and land squarely in the golden age. We might indeed ask ourselves if we will succeed in getting through the transition period at all, or if the blood and the suffering required are not perhaps too high a price to pay for this golden age.

If we take a hard, unromantic look at the golden age itself, we are struck with the incredible naïveté of these scientists. They say, for example, that they will be able to shape and reshape at will human emotions, desires, and thoughts and arrive scientifically at certain efficient, pre-established collective decisions. They claim they will be in a position to develop certain collective desires, to constitute certain homogeneous social units out of aggregates of individuals, to forbid men to raise their children, and even to persuade them to renounce having any. At the same time, they speak of assuring the triumph of freedom and of the necessity of avoiding dictatorship at any price. They seem incapable of grasping the contradiction involved, or of understanding that what they are proposing, even after the intermediary period, is in fact the harshest of dictatorships. In comparison, Hitler's was a trifling affair. That it is to be a dictatorship of test tubes rather than of hobnailed boots will not make it any less a dictatorship.

When our savants characterize their golden age in any but scientific terms, they emit a quantity of down-at-the-heel





platitudes that would gladden the heart of the pettiest politician. Let's take a few samples. "To render human nature nobler, more beautiful, and more harmonious." What on earth can this mean? What criteria, what content, do they propose? Not many, I fear, would be able to reply. "To assure the triumph of peace, liberty, and reason." Fine words with no substance behind them. "To eliminate cultural lag." What culture? And would the culture they have in mind be able to subsist in this harsh social organization? "To conquer outer space." For what purpose? The conquest of space seems to be an end in itself, which dispenses with any need for reflection.

We are forced to conclude that our scientists are incapable of any but the emptiest platitudes when they stray from their specialties. It makes one think back on the collection of mediocrities accumulated by Einstein when he spoke of God, the state, peace, and the meaning of life. It is clear that Einstein, extraordinary mathematical genius that he was, was no Pascal; he knew nothing of political or human reality, or, in fact, anything at all outside his mathematical reach. The banality of Einstein's remarks in matters outside his specialty is as astonishing as his genius within it.

It seems as though the specialized application of all one's faculties in a particular area inhibits the consideration of things in general. Even J. Robert Oppenheimer, who seems receptive to a general culture, is not outside this judgment. His political and social declarations, for example, scarcely go beyond the level of those of the man in the street. And the opinions of the scientists quoted by *l'Express* are not even on the level of Einstein or Oppenheimer. Their pomposities, in fact, do not rise to the level of the average. They are vague generalities inherited from the nineteenth century, and the fact that they represent the furthest limits of thought of our scientific worthies must be symptomatic of arrested development or of a mental block.

Particularly disquieting is the gap between the enormous power they wield

and their critical ability, which must be estimated as null. To wield power well entails a certain faculty of criticism, discrimination, judgment, and option. It is impossible to have confidence in men who apparently lack these faculties. Yet it is apparently our fate to be facing a "golden age" in the power of sorcerers who are totally blind to the meaning of the human adventure.

When they speak of preserving the seed of outstanding men, whom, pray, do they mean to be the judges? It is clear, alas, that they propose to sit in judgment themselves. It is hardly likely that they will deem a Rimbaud or a Nietzsche worthy of posterity. When they announce that they will conserve the genetic mutations which appear to them most favorable, and that they propose to modify the very germ cells in order to produce such and such traits; and when we consider the mediocrity of the scientists themselves outside the confines of their specialties, we can only shudder at the thought of what they will esteem most "favorable."

None of our wise men ever pose the question of the end of all their marvels. The "wherefore" is resolutely passed by. The response which would occur to our contemporaries is: for the sake of happiness. Unfortunately, there is no longer any question of that. One of our best-known specialists in diseases of the nervous system writes: "We will be able to modify man's emotions, desires, and thoughts, as we have already done in a rudimentary way with tranquilizers." It will be possible, says our specialist, to produce a conviction or an impression of happiness without any real basis for it. Our man of the golden age, therefore, will be capable of "happiness" amid the worst privations.

WHY, then, promise us extraordinary comforts, hygiene, knowledge, and nourishment if, by simply manipulating our nervous systems, we can be happy without them? The last meager motive we could possibly ascribe to the technical adventure thus vanishes into thin air through the very existence of technique itself.

But what good is it to pose questions of motives? Of why? All that must be the work of some miserable intellectual who balks at technical progress. The attitude of the scientists, at any rate, is clear. Technique exists because it is technique. The golden age will be because it will be. Any other answer is superfluous.

—JACQUES ELLUL
in *The Technological Society*,
translated from the French
by John Wilkinson
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LETTER FROM CLEVELAND

WHERE'S THE DOCTOR?

A Medical Engineer's Plea

ALL of you are sufficiently aware of the important trend linking the destiny of medicine to government. It has been growing rapidly in the past five years, and to some the rate is alarming. Government is deeply involved in research, education, hospital construction, disease prevention programs, international relations, care of the young and of the old—in fact, just about every facet of medicine. Both the advice government receives and the intellectual relationships among government officials, research workers, and practicing physicians are so chaotic that a meeting of the minds on a democratic basis is all but impossible. Indeed, this chaos is highlighted by such examples as the grumbling hostility between the American Medical Association and Washington. But even within the AMA, the separation of thought between general practitioners and specialists has been called by Morris Fishbein, "A House Divided." Recently, even business has gotten into the act with hard words flying between the drug manufacturers and the Food and Drug Administration.

At the moment there seems little chance that the varied general and special societies to which most physicians belong will close ranks and supply both the advice and the persuasion necessary to make decisions of wisdom and put these policies into practice. There are just too many societies, and their organizational structures are too antiquated and cumbersome. Few have kept abreast of even such relatively "simple" problems as the vast increase in numbers of physicians, quite aside from the vast financial resources and their accompanying problems. Reluctantly, I recognize that internal reorganization to face up to major problems is unlikely to occur.

Engineers have at last recognized their problem and are now in the process of doing something about it. It has just been announced that a new academy is to be founded, a National Academy of Engineering, to give suitable recognition to engineers, to bring the benefits of high-quality advice to government, and to exert influence on national affairs. . . .