THE TWENTIES IN CONTEMPORARY COMMENTARY

"A vision of modern progress," illustration in *Popular Science Monthly*, February 1928 (detail)

— THE "MACHINE AGE" —

Will MACHINES liberate man or enslave him? Will they deliver a bounteous future previously unimaginable, or a barren soulless prison of man's making? Perennial questions. Here we examine how they were addressed in the 1920s through the writings of industrialists, engineers, economists, clergymen, novelists, a dramatist, a humorist, and other voices who cheered, mourned, or questioned the longterm consequences for man of his precocious offspring, the machine.

Edward S. Martin
"Model T and the Millennium"
Harper's, February 1928

People call this the mechanistic age, enlarge upon its many objectionable features and grumble about the acceleration of life and all that. But what would they have? Is the mechanistic age a good thing or a bad thing? Is the speeding up of life a basis for satisfaction or for regret? Twenty miles on the highway in old times used to be a pretty fair day's work for a team. It took three or four hours to do it. When it was done the horses needed to rest and be fed. Now it is something to be done, where the roads are good, in half an hour or a little more by a creature that is not tired when it has done it. The speeding up of life is trying of course, but who can doubt that it is an immense achievement! Our great property in this life is time, and when we get about more quickly we save it. The mechanistic civilization has put wheels under us.

Henry Ford
"The Meaning of Power"
Today and Tomorrow, 1926

We speak of a "machine age." What we are entering is a power age, and the importance of the power age lies in its ability, rightly used with the wage motive behind it, to increase and cheapen production so that all of us may have more of this world's goods. . . .

The function of the machine is to liberate man from brute burdens, and release his energies to the building of his intellectual and spiritual powers for conquests in the fields of thought and higher action. The machine is the symbol of man's mastery of his environment. . . .

To release himself to more human duties, man has trained beasts to carry burdens. The ox team and camel represent man's mind plus brute strength. The sail is man's release from the slavery of the oar. The use of the swift horse was man's dim sensing that time had value for himself and his concerns.

Did man thus increase his slavery, or did he increase his liberty?

It is true that the machine has sometimes been used to by those who owned it, not to liberate men, but to exploit them. This was never accepted by society as right. . . . The right and serviceable use of the machine always makes unprofitable and at last impossible the abuse of it.

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Stuart Chase
Prosperity: Fact or Myth?
1929

Economist and consumer activist Stuart Chase published several bestselling works on consumer culture and the social effects of technological innovation (see pp. 14-16), all based on extensive research into the realities of modern American life.

__THE NEW STANDARD OF LIVING__

[I]t will be well . . . to enumerate again the specific goods, services and qualities which comprise the new American standard of living. Remember that it is not a list which all possess but only a list to which all aspire . . . . Or almost all.

SHELTER

More apartment living[1]
More attractive villas for the business class
Furnaces and oil heaters
Plumbing and bathtubs
Electric lights
Electric appliances, such as washing machines
Refrigeration
Sleeping porches
Overstuffed furniture
Radios
Phonographs
Telephones
Five-foot shelves
Glittering cocktail services

And smaller space.

CLOTHING

More variety
More style
More silk
Rayon
More accent on underwear
More commercial laundry, pressing, and cleaning work
More cosmetics
More fat reducers
Permanent waves
More colorful vestments for men

And poorer quality.

FOOD

More variety with fewer calories
More fresh vegetables
More fresh fruit
More tin cans
More quick lunches
More attractive service
More milk products
More packaged foods
More delicatessen shops
More restaurant eating
More tea houses
More drugstore bars[2]
More candy and sugar
More chewing gum

And less home cooking.

SUNDRY [Misc.]

Motor cars
Moving and talking pictures
More elaborate children's toys
More books
More cigarettes
More comic strips
More athletic shows
More clubs, including night clubs
More high school and college education
More correspondence courses
More magazines and tabloids
More parks and playgrounds
More golf
More traveling—particularly to Florida and California
More bridge
More jazz

And more noise and speed.

Robert S. Lynd & Helen Merrell Lynd
Middletown: A Study in American Culture
1929

Selected in 1924 as a typical town of "middle America," Muncie, Indiana, was the focus of two sociologists' research into the changes wrought in modernizing America since the late 1890s. One of the six areas studied was the residents' use of leisure time.

"Go to a motion picture . . . and let yourself go," Middletown reads in a *Saturday Evening Post* advertisement. "Before you know it you are living the story—laughing, loving, hating, struggling, winning! All the adventure, all the romance, all the excitement you lack in your daily life are in—— Pictures. They take you completely out of yourself into a wonderful new world. . . . Out of the cage of everyday existence! if only for an afternoon or an evening—escape!"

[1] By "more," Chase notes, is meant "relative to population. These items are increasing faster than the number of people in the country."
[2] Soda fountains.

Edward S. Martin
"The War Against Prejudice"
Harper's, September 1924

These are very extraordinary times. It is a mere truism to say that. Everybody sees it. Things move very fast. Life changes while you wait. New inventions and new developments of inventions constantly press in. The people of the world are daily being drawn nearer together by increased rapidity of communication. No nation can be a laggard in such times as these. Every nation that hopes merely to keep its place, much more to forge ahead, must find its job and do it with all its power.

Percival White
"The Almighty Minute"
The Atlantic Monthly, July 1920

If the business man sees a device for saving time, he will have it, at all costs. All great inventions of this age have been time-saving inventions. They are great inventions because they save time. These uncanny contrivances machinate to accomplish in minutes what formerly took us hours, or even days. (Paradoxically, the more time-saving inventions you have about, the less time you have to spare; but that is beside the point.)

We do not call, we telephone. It is so much quicker. We do not travel, we telegraph. It does not take so long. . . . What becomes of the time you save, no one can tell, not even our new-fangled time-study artists. For, although we have learned a great deal about saving time, we have learned little or nothing about spending it.

Robert Benchley HUMORIST
"One Minute, Please!"
Benchley Beside Himself, 1930

It is possible that the telephone has been responsible for more business inefficiency than any other agency except laudanum.[3] It has such an air of pseudo-efficiency about it that people feel efficient the minute they take the receiver off the hook. A businessman could be talking with Ajax, the mechanical chess player, on the other end of the wire and still feel he was getting somewhere, simply because to anyone passing the door he looks as if he were very busy. There is something about saying "O.K." and hanging up the receiver with a bang that kids a man into feeling that he has just pulled off a big deal, even if he has only called up Central to find out the correct time. For this reason businessmen use the telephone exclusively when almost any other form of communication would be quicker. . . .

A busy executive said to me the other day in an exasperated tone: "Aren't you ever in? I have been trying to get you on the telephone for five days. What do you do with your time, cut lawns?" You see, I am the one who was in the wrong. I was the impractical one.

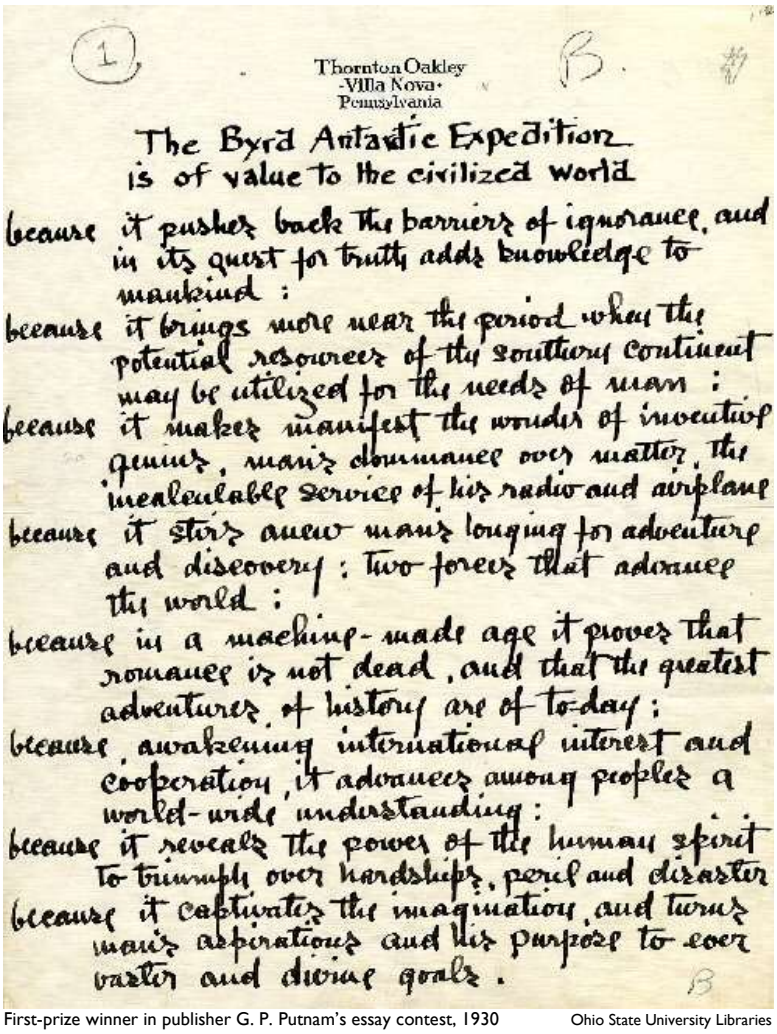
I might have told him about the new invention called the "typewriter," whereby, if you can't get a man on the telephone, you can drop him a note which will reach him the next morning. Or I also might have told him that I was in my office all the time, but was so busy working that I had left word with the telephone operator not to bother me with time-wasting calls from businessmen. In either case, dropping me a note would have saved him four days of telephoning. But apparently note-dropping is considered a relic of Civil War days and is not to be considered in the bustle of modern business. You must use the telephone, even if it doesn't get you anywhere.

Kenneth Chafee McIntosh
"Sudden Greatness"
The Atlantic Monthly, Sept. 1921

In fifteen years aviation has superposed itself upon civilization. Its future is limitless, not predictable. It is daily demonstrating its ability to extend the scope of our economic fabric to lengths undreamed of, and in ways which were but yesterday fantastic dreams. And it has already proved its power to destroy utterly the world as we have built it; has forced us to take sober and urgent thought as to how this mighty and as yet irresponsible force may be subordinated to the common good. The industrial changes following the introduction of steam and electrical machinery are trifling and infinitesimal in comparison with those already following in the wake of mankind's newfound ability to fly.

The future of all the world is in the air—a future either glorious or terrible. Your generation and mine will decide which it shall be.

[3] Laudanum: opium-based (narcotic) painkiller.



Thornton Oakley
-Villa Nova-
Pennsylvania

The Byrd Antarctic Expedition
is of value to the civilized world

because it pushes back the barrier of ignorance and in its quest for truth adds knowledge to mankind:

because it brings more near the period when the potential resources of the southern continent may be utilized for the needs of man:

because it makes manifest the wonder of inventive genius, man's dominance over matter, the incalculable service of his radio and airplane:

because it stirs anew man's longing for adventure and discovery: two forces that advance the world:

because in a machine-made age it proves that romance is not dead, and that the greatest adventurer[s] of history are of today:

because, awakening international interest and cooperation, it advances among peoples a world-wide understanding:

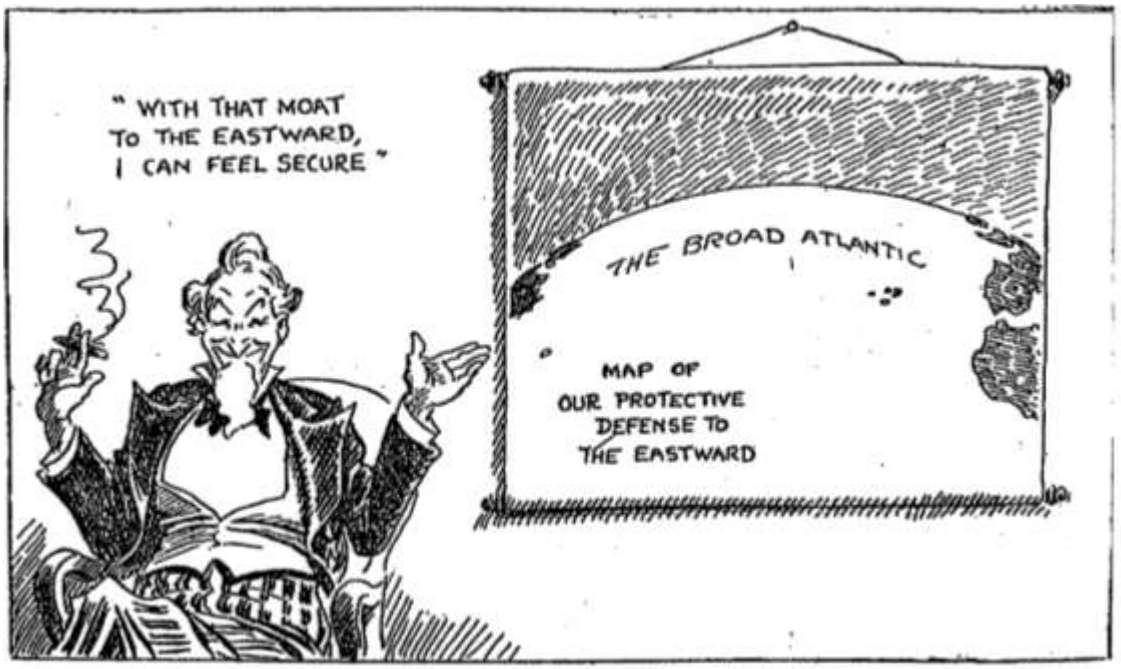
because it reveals the power of the human spirit to triumph over hardships, peril and disaster:

because it captivates the imagination, and turns man's aspirations and his purpose to ever vaster and divine goals.

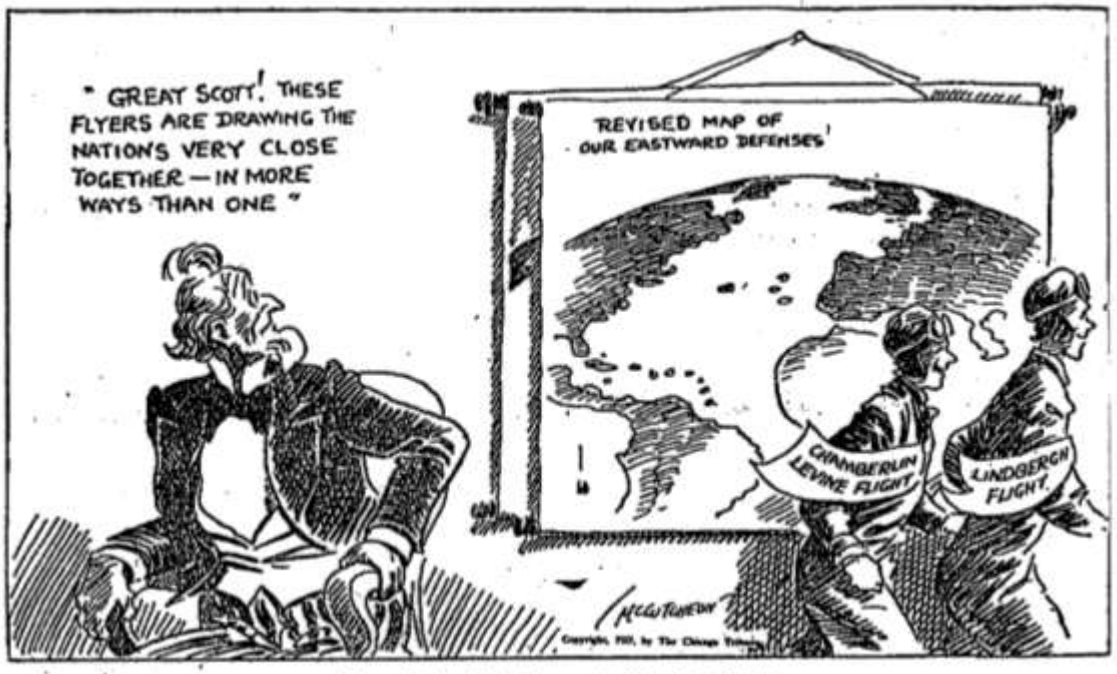
First-prize winner in publisher G. P. Putnam's essay contest, 1930 Ohio State University Libraries

In 1928 the famed naval officer Admiral Richard Byrd led a two-year research expedition to Antarctica, an accomplishment that included his flight over the South Pole with two crewmen. With the publication of Byrd's account of the expedition—*Little America*—in 1930, the publisher sponsored an essay contest on the topic "The Value, to the Civilized World, of the Byrd Antarctic Expedition." The first prize of $250 and an autographed copy of *Little America* was awarded to Thornton Oakley, a professional illustrator and teacher at the Philadelphia Museum School of Industrial Art.

Ohio State University Libraries Byrd and his dog Igloo as ships are uncrated and planes assembled at the beginning of the Antarctic Expedition, 1928



Map of the broad Atlantic moat before the flights.



Map of the Atlantic moat after the flights.

"What the Lindbergh and Chamberlin Fights Have Done"

Chicago Tribune, June 7, 1927

Cartoonist: John T. McCutcheon

Lindbergh flight: first solo trans-Atlantic flight completed on May 21, 1927, by Charles Lindbergh (New York to Paris).

Chamberlin-Levine flight: nonstop distance flight record set on June 6, 1927, by Clarence Chamberlin and Charles Levine (trans-Atlantic: Long Island, New York, to Eisleben, Germany).

Reproduced by permission of the *Chicago Tribune*. Digital image courtesy of ProQuest Historical Newspapers.

Henry Ford
My Life and Work
1922

When one speaks of increasing power, machinery, and industry there comes up a picture of a cold, metallic sort of world in which great factories will drive away the trees, the flowers, the birds, and the green fields. And that then we shall have a world composed of metal machines and human machines. With all of that I do not agree. I think that unless we know more about machines and their use, unless we better understand the mechanical portion of life, we cannot have the time to enjoy the trees, and the birds, and the flowers, and the green fields.

. . . We waste so much time and energy that we have little left over in which to enjoy ourselves. Power and machinery, money and goods, are useful only as they set us free to live. They are but means to an end. For instance, I do not consider the machines which bear my name simply as machines. If that was all there was to it I would do something else. I take them as concrete evidence of the working out of a theory of business which I hope is something more than a theory of business—a theory that looks toward making this world a better place in which to live. The fact that the commercial success of the Ford Motor Company has been most unusual is important only because it serves to demonstrate, in a way which no one can fail to understand, that the theory to date is right.

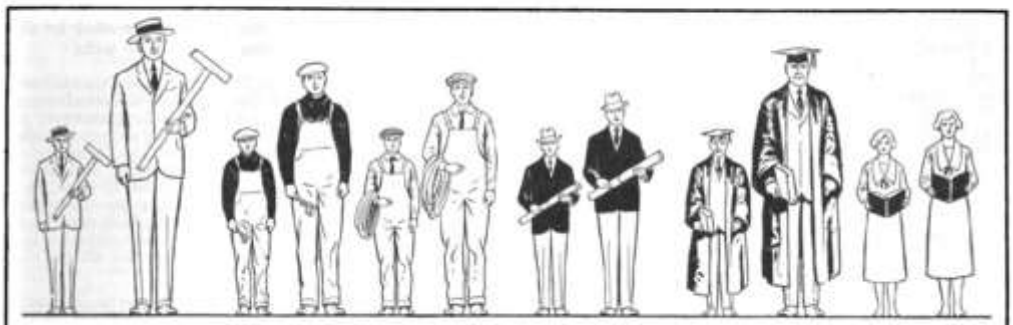
Reinhold Niebuhr
Leaves from the Notebook of a Tamed Cynic, 1929

One of the most influential American Protestant theologians, Reinhold Niebuhr pastored a small Detroit congregation from 1915 until 1928, during which he kept a journal on ministering in modern times. In 1925 he toured one of the Ford Motor Company automobile plants.

We went through one of the big automobile factories today. So artificial is life that these factories are like a strange world to me though I have lived close to them for many years. The foundry interested me particularly. The heat was terrific. The men seemed weary. Here manual labor is a drudgery and toil is slavery. The men cannot possibly find any satisfaction in their work. They simply work to make a living. Their sweat and their dull pain are part of the price paid for the fine cars we all run. And most of us run the cars without knowing what price is being paid for them.

EXIT PERSONAL SERVICE: DECREASES IN TEN YEARS.

Cooks decreased 31.5 per cent.; chambermaids, 26 per cent.; maids-of-all-work, etc., 20.5; launderers and laundresses, not in laundries, 25.7; dressmakers and seamstresses, not in garment factories, 47.5.



ENTER THE MACHINE AND THE SCHOOL: INCREASES IN TEN YEARS.

Mechanical engineers increased 160 per cent.; machinists, 83 per cent.; electricians, 77; technical engineers, 53; college professors and presidents, 113; school teachers, 36.

"The Passing of the Household Servant," *The Literary Digest*, July 8, 1922

"The era of the menial is passing away. While we have been growing in wealth and population, those among us occupied in personal service have greatly decreased. Their places have been taken by machinery, as shown by the increase of those who design and build labor-saving devices."

Edna Ferber
So Big
Novel, 1924

In Ferber's Pulitzer-Prize-winning novel that pitted art against riches and country against city, Dirk DeJong leaves the midwestern farm on which he was raised to try his hand as a stock-and-bond broker in Chicago. In this scene, he is questioned by his mother, Selina, who had abandoned her artistic dreams on becoming a young widow with sole responsibility for the family farm.

"Dirk, what is this you sell in that mahogany office of yours? I never did get the hang of it."

"Bonds, Mother. You know that perfectly well."

"Bonds." She considered this a moment. "Are they hard to sell? Who buys them?"

"That depends. Everybody buys them—that is . . ."

"I don't. I suppose because whenever I had any money it went back into the farm for implements, or repairs, or seed, or [live]stock, or improvements. That's always the way with a farmer—even on a little truck farm like this." She pondered again a moment. He fidgeted, yawned. "Dirk DeJong—Bond Salesman."

"The way you say it, Mother, it sounds like a low criminal pursuit."

"Dirk, do you know sometimes I actually think that if you had stayed here on the farm——"

"Good God, Mother! What for!"

"Oh, I don't know. Time to dream. Time to—no, I suppose that isn't true any more. I suppose the day is past when the genius came from the farm. Machinery has cut into his dreams. He used to sit for hours on the wagon seat, the reins slack in his hands, while the horses plodded into town. Now he whizzes by in a jitney [motor vehicle]. Patent binders, plows, reapers—he's a mechanic. He hasn't time to dream. I guess if Lincoln had lived today he'd have split his rails to the tune of a humming, snarling patent wood cutter, and in the evening he'd have whirled into town to get his books at the public library, and he'd have read them under the glare of the electric light bulb instead of lying flat in front of the flickering wood fire. . . . Well. . . ."

Walter F. White
Rope and Faggot: A Biography of Judge Lynch
1929

In his extensive study of lynching in the 1920s, Walter White, an African American civil rights activist and NAACP official, foresaw a unique consequence of machine-based diversion for southern whites.

A second ingredient in lynching psychology is the human love of excitement. Sinclair Lewis and countless of his imitators have painted in leaden colors the Gopher Prairies of the West,[4] but most of these towns are highly diverting when compared with the average small town in the South. The endless routine of drab working hours and more drab home life, dominated by a relentlessly vitriolic and ignorant ministry, has little of excitement in it. There is much more than levity in the statement of H. L. Mencken[5] that lynching often takes the place of the merry-go-round, the theater, the symphony orchestra, and other diversions common to large communities. It is not at all unlikely that, whatever their other shortcomings, the radio and the cheap motor car have been and will be not inconsiderable factors in diverting attention from the Negro and in lessening the use of the rope and the torch.

Walter Lippmann
A Preface to Morals
1929

One of the most influential political commentators of the mid twentieth century, Lippmann offered in *Preface* a secular scaffolding for an ethical and meaningful life in the modern age.

Men have not merely invented the modern machines. There have been machines invented since the earliest days, incalculably important, like the wheel, like sailing ships, like the windmill and the watermill. But in modern times men have invented a method of inventing, they have discovered a method of discovery. Mechanical progress has ceased to be casual and accidental and has become systematic and cumulative. We know, as no other people ever knew before, that we shall make more and more perfect machines. When Mr. Beard[6] says that "the machine civilization differs from all others in that it is highly dynamic, containing within itself the seeds of constant reconstruction," he is, I take it, referring to this supreme discovery which is the art of discovery itself.

[4] Gopher Prairie: Lewis's fictional midwestern small town in his novel *Main Street* (1920), populated with narrow-minded residents.
[5] Henry Louis Mencken: editor and essayist known for his biting satire indicting—among many targets—the low-brow, the bigot, and the southerner.
[6] Charles Beard, ed., *Whither Mankind: A Panorama of Modern Civilization*, 1928.

Walter Lionel George
Hail Columbia!: Random Impressions of a Conservative English Radical, 1921

W. L. George was an English writer, a lover of America, and a social liberal, despite the tongue-in-cheek subtitle of *Hail Columbia!*, a memoir of his 1920 travels throughout the U.S, which was serialized in Harper's in 1921.

I have enjoyed nothing more in America than the mechanical civilization. One finds it everywhere. One finds a hint of it in the New York advertisements which offer to do your laundry for twelve cents a pound. (Shorten your shirts and keep down your laundry bill!) There is something fresh about that; there is something fresh in all the American devices. For instance, a shoeblack [shoeshiner], after moistening my boots with liquid blacking, dried them with a small electric fan. I don't know that this dries them any quicker or any better than the wind, but I like the mechanical idea. I like, on railway platforms, to see little electric trucks carry the luggage, replacing men who shout and perspire. If this is excess, it is in the right direction—namely, toward the minimization of effort. The United States has done more in this way than all the other countries put together. For instance, the electric iron, price eight dollars or so, which is fitted to a light plug and enables the housewife to save its cost in a month by doing her own ironing. . . .

This civilization is extraordinary, and takes extraordinary forms, such as the electric curling iron; the immersion heater, which enables you to warm your coffee when you have no coffee pot, by dipping a stick of metal direct into the fluid; and even the safety comforter, which you can connect with a plug and lay upon any part of yourself which aches. Everything has been thought of. More people, in America, are thinking of how to make life easy than anywhere else. They will cut you a door key while you wait, just as they will build a floor of your office in a week. They will save your running downstairs, or taking the elevator, by providing a Cutler chute to mail your letters at your bedroom door. They will protect your shirts at the laundry by inserting boards and clips, and they will save you brown-paper parcels by providing laundry bags. They are always thinking of these things. For instance, when an American sells you an eye lotion or a bottle of fountain pen ink, somebody has thought of the use of these liquids and, instead of making you buy a special instrument or letting you forget it, has fixed a dropper to the cork. It looks like nothing, but it means easier living. Also it means saving labor. The plate washer, the rack sunken into soapsuds whirled electrically, is a clever machine. But what strikes ones is that the water is so hot that nobody need wipe the plates. They dry of themselves. . . . The whole idea of American business seems to be to save labor, which is expensive, and to substitute the cheap machine.

Novel Devices for the Shop and the Home

A Department Devoted to Recently Invented Mechanical and Household Appliances

Conducted by Albert A. Hopkins

The works are contained in the dial

A New Type of Clock

ONE of our English correspondents, Mr. R. N. Pickering, a well-known clock designer and manufacturer of London, has

Hydraulic timing device for racing cars depends on the incompressible water in the hose

First Aid to the Picnic

NO longer need a picnicking party laboriously hunt a clean, level, grassy spot on which to spread a cloth for lunch-

Anti-Pilfering Lockers

WE constantly read of students losing their clothing, et cetera, while attending classes. To obviate these losses from

A quartz and gallium high temperature thermometer

A New Scientific Thermometer

THE writer recently visited the wonderful laboratory of the General Electric Com-

Scientific American, July 1926

Aldous Huxley
"The Outlook for American Culture: Some Reflections in a Machine Age"
Harper's, August 1927

Another English observer of America, Aldous Huxley (author of *Brave New World*, published in 1931) argued that while the machine age brought great benefits to mankind, one fault was its debasement of the culture that man now had more time to pursue. In a European Old World manner, Huxley displays the "revolt of the highbrows," as *Harper's* editor F. L. Allen later termed intellectuals' disdain for the popular culture of mechanized America.

The future of America is the future of the world. Material circumstances are driving all nations along the path in which America is going. Living in the contemporary environment, which is everywhere becoming more and more American, men feel a psychological compulsion to go the American way. Fate acts within and without; there is no resisting. For good or for evil, it seems that the world must be Americanized. America is not unique; she merely leads the way along the road which the people of every nation and continent are taking. Studying the good and the evil features in American life, we are studying, in a generally more definite and highly developed form, the good and evil features of the whole world's present and immediately coming civilization. Speculating on the American future, we are speculating on the future of civilized man. . . .

The benefits conferred by machinery on the human race are too well known to need a long description. Machinery has made possible the payment of a higher wage for shorter hours and less drudgery. Thanks to machinery, the common man enjoys today an amount of leisure undreamed of by his predecessors, lives, and brings up his family in a style which would have seemed to them almost princely. . . .

The progress in mechanical invention has given something more than wealth and leisure. Cheap and rapid transport has enormously enlarged the human horizon. Travel, in the past, was a luxury which only the very rich could afford. . . . Today even the poor can take small journeys; the moderately prosperous are familiar with whole continents. The mind is nourished by its impressions from without; to enlarge one's physical world is to enrich one's mind. Machinery, in the form of modern transport, is providing for larger and ever larger numbers of human beings a form of liberal education.

Nor must we forget the more direct educational contributions of machinery. Efficient methods of printing have made possible the dissemination of information and ideas on an unprecedented scale. Knowledge of the visual arts can be spread by means of cheap-process reproduction. Music can be recorded and reproduced with extraordinary verisimilitude by the phonograph. And every form of noise, from the political speech to the symphony concert, from the jazz band to the sermon, can be broadcast over a continent. Machinery, then, has created leisure and multiplied the number of impressions which men and women can receive. Universal leisure and variety of impressions make possible a rich universal culture. Machinery has set up a tendency towards the realization of a fuller life.

New York Public Library — Radio factory, New Jersey, ca 1920

Library of Congress — Pres. Harding in recording studio, 1922

Henry Ford Museum — Auto-camping: Ford Model T with tent attached, ca. 1921

Now for the reverse of the medal. . . .

That increased leisure does not lead to increased culture among the leisured is due to two main causes, one hereditary and the other environmental. A great many men and women —let us frankly admit it, in spite of all our humanitarian and democratic prejudices—do not want to be cultured, are not interested in the higher life. For these people existence on the lower, animal levels is perfectly satisfactory. Given food, drink, the company of their fellows, sexual enjoyment, and plenty of noisy distractions from without, they are happy. . . . The notion that one can derive pleasure from arduous intellectual occupations is to such people merely absurd. More leisure and more prosperity mean for them more dancing, more parties, more movies, more distractions in general. . . .

. . . The machines themselves supply the means of checking the progressive movement which they have made possible. The machines give leisure, but at the same time they give what is almost a guarantee that, except by a fortunately situated and well-endowed minority, that leisure shall be misused. . . . The rotary [printing] press, the process block [in printmaking], the cinema, the radio, the phonograph are used not, as they might so easily be used, to propagate culture, but its opposite. All the resources of science are applied in order that imbecility may flourish and vulgarity cover the whole earth. That they are rapidly doing so must be obvious to anyone who glances at a popular picture paper, looks at a popular film, listens to popular music on the radio or phonograph.

The mere standardization of ideas made possible by modern machinery is in itself another obstacle to culture. One of the blessings of machinery, as I pointed out, is that it enables human beings to move about the surface of their earth with an unprecedented ease and rapidity. Travel has been, and still is, a liberal education. But newspapers, the radio, and elementary education are making all human beings more and more alike. One can anticipate a future in which men will be able to travel round the world without finding an idea or custom different from those with which they are familiar at home. In 3000 A.D. one will doubtless be able to travel from Kansas City to Peking in a few hours. But if the civilization of these two places is the same, there will be no object in doing so.

New York Public Library

film "lobby cards" (top to bottom): 1921, 1922, 1922

There is another way in which machinery adversely affects culture. It removes man's incentive to amuse himself. In the past when people needed recreation they were compelled to a great extent to provide it for themselves. If you needed music, you had to sing or play an instrument. If you wanted a pictorial record of some person or scene, you had to draw and paint. If you lived in a village or out of the way town and wanted drama, you had to act, yourself. Today you need do none of these things. You turn on the gramophone or the radio when you need music; you click your Kodak when you want a picture; you go to the village movies when you want drama. . . . In the days before machinery men and women who wanted to amuse themselves were compelled, in their humble way, to be artists. Now they sit still and permit professionals to entertain them by the aid of machinery. It is difficult to believe that general artistic culture can flourish in this atmosphere of passivity.

Can Machines Make Us Free?—A Debate

THE FORUM ■ OCTOBER 1924 ■ EXCERPTS

The *Forum*, a magazine of social and political commentary, regularly invited point-counterpoint essays on contemporary issues. For this inquiry the *Forum* invited essays from two widely published engineers, Basset an industrial engineer and Jonson a civil engineer.

"The Worker Emancipated"

WILLIAM R. BASSET

Those who are unused to a manufacturing plant often assume that to work day in and day out at a loom, or a drill press, or a steam hammer must be most revolting in its monotony. I have frequently heard callers speak of a factory they were visiting as a hell, although to me it seems a rather neat, safe, and shipshape place, if perhaps a trifle noisy. It depends upon the point of view. . . .

I have asked many workers of both sexes who perform simple motions on highly repetitive and subdivided operations if the monotony were distasteful. Many missed the meaning of my question, for they could not understand how monotony could be other than pleasant. They liked the work which they could do automatically. It required no mental effort, and so left them free to think their own natural thoughts. My observation indicates that only about one factory worker in fifty objects to repetitive operations. . . . Few of them have pride in achievement, ambition to rise in authority, or willingness to assume responsibility. If a machine can be introduced to do a job better than it can be done by hand, they willingly become machine operators—provided that it means more money to them. . . .

Cynics profess to doubt whether the availability of larger quantities and new kinds of consumers' goods, made possible by machine production, actually increases the happiness or welfare of mankind. They condemn the moving pictures as low-browed amusement, the cheap automobile as a nuisance, the talking machine as canned music, and newspapers as trash. But the fact remains that the workers find amusement and happiness in all of these things. Four or five days' labor will buy a good-looking suit of machine-made clothes which a century ago would have cost two months' wages. A comfortable and serviceable pair of shoes costs but a couple of days' labor as against a week's labor before machines displaced the cobbler. . . .

. . . Machine production has reduced the cost of common things to a point where thousands can buy them who could not if they were made by hand. New conveniences are available that could never be made by hand. The machine has been the biggest factor in increasing the real wages of all men a hundredfold. And machines have given well paid employment to people of low-grade mentality who would in other days have lived the lives of brutes.

"Industrial Democracy a Delusion"

ERNST JONSON

In his article, Mr. William R. Basset endeavors to show that through mechanical invention man has freed himself from economic bondage. If this be so, whence this ceaseless [labor] unrest, these hate-filled, bloody conflicts that besmirch the pages of modern history? . . .

. . . Modern industry is not free, it is not just, it is not generous. It condemns millions to indifferent mechanical employment, without hope of change, even without assured livelihood. The worker looks for some enduring reward of his endeavors, such as the [medieval] guildsmen enjoyed, and is disappointed. Not success, not respectability, not even economic security, crowns his ineffectual efforts to do well. The obstacles seem insuperable, his opportunities barren, the battle goes sore against him to the end. . . .

Mr. Basset tells us that the workers like the machine. May not this liking result from a sense of dependence on the machine and fear of being deprived of its aid and support? . . . My own observation during many years of contact with mechanical industry has convinced me that our industries, as now constituted, offer few opportunities for such fullness of life as that which the guildsmen enjoyed. . . .

Many problems still confront industry—immense problems calling in most insistent manner for solution. Is industrial democracy the way by which the solutions of these problems are to be found? The advocate of popular control of industry argues plausibly enough: the present masters of industry have failed to achieve what reasonably might have been expected of them. Let the workers, themselves, take possession of land and tools, and so become the masters of industry. Before embarking on such a radically new course, is it not well to consider if it is likely to be practicable, or even possible? . . .

Industrial democracy!. . . No industrialized society can exist without an economically dominant group. . . .

The worker is discontented, not because the owner consumes a small fraction of the product of his labor, but because he gets from the owner no competent, loving guidance. He is disgruntled because the owner takes the wages of a governor and does not govern. . . . Give the workers masterful guidance and they will return confiding loyalty, and cease babbling of industrial democracy. But not with the cut-throat competition of each man for himself can such government be achieved.

Robert S. Lynd & Helen Merrell Lynd
Middletown: A Study in American Culture
1929

Selected in 1924 as a typical town of "middle America," Muncie, Indiana, was the focus of two sociologists' research into the changes wrought in modernizing America since the late 1890s.

"Do you think the man who runs a complicated machine takes pride in his work and gets a feeling of proprietorship in his machine?" a responsible executive in charge of personnel in a large machine shop was asked.

"No, I don't," was his ready reply. "There's a man who's ground diameters on gears here for fifteen years and done nothing else. It's a fairly skilled job and takes more than six months to learn. But it's so endlessly monotonous! That man is dead, just dead! And there's a lot of others like him, and I don't know what to do for them."

"What," asked the questioner, "do you think most of the men in the plant are working for?—to own a car, or a home, or just to keep their heads above water?"

"They're just working. They don't know what for. They're just in a rut and keep on in it, doing the same monotonous work every day, and wondering when a slump will come and they will be laid off."

John Candee Dean
"The Magic of Modern Industrialism"
The Forum, June 1922

Listen not to those who strive to stir up discontent by saying that with our modern factory system and self-acting machinery, there is no chance for a workingman. There never were greater opportunities for advancement than now. If the workingman's lot is hard, do not blame society, but see if his trouble does not arise from his own mistakes. The common man too often lays the fault of his bad condition on others. The wise man lays the fault on himself. America has always been a country where the working class is most favored. The high scale of wages paid here has been the chief incentive to invent automatic machinery for rapid production, and thereby enable the employer to pay high wages and foster the spirit of equality.

Henry Ford
My Life and Work
1922

I have not been able to discover that repetitive labor injures a man in any way. I have been told by parlor experts[7] that repetitive labor is soul- as well as body-destroying, but that has not been the result of our investigations. . . . It would seem reasonable to imagine that going through the same set of motions daily for eight hours would produce an abnormal body, but we have never had a case of it. We shift men whenever they ask to be shifted and we should like regularly to change them—that would be entirely feasible if only the men would have it that way They do not like changes which they do not themselves suggest. Some of the operations are undoubtedly monotonous—so monotonous that it seems scarcely possible that any man would care to continue long at the same job. . . . The most thorough research has not brought out a single case of a man's mind being twisted or deadened by the work. The kind of mind that does not like repetitive work does not have to stay in it.

Thomas Edison [as interviewed by Edward Marshall]
"Machine-Made Freedom"
The Forum, October 1926

We must substitute motors for muscles in a thousand new ways. A human brain is greatly hampered in its usefulness if it has only two hands of a man to do its bidding. There are machines each of which can do the work of a multitude of hands, when directed by one brain. That is efficiency. . . .

One of the most foolish things men say, and one which they often repeat, is that too much substitution of machine work for hand work will bring overproduction. The idea is complete nonsense. There cannot be overproduction of anything which men and women want, and their wants are unlimited except in so far as they are limited by the size of their stomachs. The stomach is the only part of man which can be fully satisfied. The yearning of man's brain for new knowledge and experience and for pleasanter and more comfortable surroundings never can be completely met. It is an appetite which cannot be appeased. Talk of overproduction is a bugaboo.

[7] I.e., unprofessional or inexperienced observers offering their opinions.

Elmer Rice
The Adding Machine
Drama, 1923

Rice's expressionist drama explored the human consequences of the mechanization of work, especially through labor-saving machines and the quest for industrial efficiency. A longtime bookkeeper in an unnamed firm, Mr. Zero is summoned by his boss on the twenty-fifth anniversary of his hiring. Instead of being notified of a celebratory raise, as he'd expected, he learns of his imminent replacement by an adding machine. In rage and frustration, Zero kills his boss, for which he is tried and hanged, awakening to find himself at an adding machine in the "Elysian Fields." But he is told his soul is to be re-used, as they all are for lack of space, and he is sent back to earth.

Boss. [calling]. Oh—er—Mister—er—
[*Zero turns in surprise, sees who it is, and trembles nervously*.]
Zero. [obsequiously]. Yes, sir. Do you want me, sir?
Boss. Yes. Just come here a moment, will you?
Zero. Yes, sir. Right away, sir. [*He fumbles his hat, picks it up, stumbles, recovers himself, and approaches the Boss, every fiber quivering*.]
Boss. Mister—er—er—
Zero. Zero.
Boss. Yes, Mr. Zero. I wanted to have a little talk with you.
Zero. [*with a nervous grin*]. Yes, sir, I been kinda expectin' it.
Boss. [*staring at him*]. Oh, have you?
Zero. Yes, sir.
Boss. How long have you been with us, Mister—er—Mister—
Zero. Zero.
Boss. Yes, Mr. Zero.
Zero. Twenty-five years today.
Boss. Twenty-five years! That's a long time.
Zero. Never missed a day.
Boss. And you've been doing the same work all the time?
Zero. Yes, sir. Right here at this desk.
Boss. Then, in that case, a change probably won't be unwelcome to you.
Zero. No sir, it won't. And that's the truth.
Boss. We've been planning a change in this department for some time.
Zero. I kinda thought you had your eye on me.
Boss. You were right. The fact is that my efficiency experts have recommended the installation of adding machines.
Zero. [*staring at him*]. Addin' machines?
Boss. Yes, you've probably seen them. A mechanical device that adds automatically.
Zero. Sure. I've seen them. Keys—and a handle that you pull. [*He goes through the motions in the air*.]
Boss. That's it. They do the work in half the time and a high-school girl can operate them. Now, of course, I'm sorry to lose an old and faithful employee—
Zero. Excuse me, but would you mind sayin' that again?
Boss. I say I'm sorry to lose an employee who's been with me for so many years——[*Soft music is heard—the sound of the mechanical player of a distant merry-go-round. The part of the floor upon which the desk and stools are standing begins to revolve very slowly*.] But, of course, in an organization like this, efficiency must be the first consideration——[*The music becomes gradually louder and the revolutions more rapid*.] You will draw your salary for the full month. And I'll direct my secretary to give you a letter of recommendation——
Zero. Wait a minute, boss. Let me get this right. You mean I'm canned?
Boss. [*Barely making himself heard above the increasing volume of sound*]. I'm sorry—no other alternative—greatly regret—old employee—efficiency—economy—business—*business*—BUSINESS——

His voice is drowned by the music. The platform is revolving rapidly now. ZERO *and the* BOSS *face each other. They are entirely motionless save for the* BOSS*'s jaws, which open and close incessantly. But the words are inaudible. The music swells and swells. To it is added every offstage effect of the theater: the wind, the waves, the galloping horses, the locomotive whistle, the sleigh bells, the automobile siren, the glass-crash. New Year's Eve, Election Night, Armistice Day, and Mardi Gras. The noise is deafening, maddening, unendurable. Suddenly it culminates in a terrific peal of thunder. For an instant there is a flash of red and then everything is plunged into darkness. [Curtain]*

Stuart Chase
Men and Machines
1929

Chase, the widely published economist and consumer activist (see p. 2), researched vast amounts of historical and sociological data to analyze the cumulative effects of mechanization on man. In the final chapter of *Men and Machines*—"The Balance Sheet"—Chase categorized the effects of mechanization as "manifestly good," manifestly evil," and "both good and evil," as he saw them. All effects listed by Stuart are included here; most are excerpted.

EFFECTS MANIFESTLY GOOD

- The life span of modern peoples has grown longer. The average expectancy of life has increased a third in the past two generations due to medical and mechanical controls.
- Higher living standards have been secured for a larger percentage of the total population than has ever before obtained [occurred].
- The shrinkage of space brought about by machinery is demonstrating more forcibly every day the essential social and economic unity of the world. It is inviting an era of international cooperation. . . .
- Class distinctions founded upon land ownership and patents of nobility are gradually disintegrating, while a leveling process in respect to prestige is going on between all classes.
- Hours of labor have decreased in recent years. We still work harder and longer than have many former societies with a hundred holidays or so a year, but if the machine were permitted to function as a true labor-saving device, we could undoubtedly do better in this respect than was ever done before. . . .
- Superstition is declining. The wayfaring man is somewhat readier to ask, "What makes this thing act the way it does?" rather than falling on his face before unknowable mysteries. . . .
- Certain machines, particularly the automobile, have tended to expand the ego, promote self-confidence and a sense of power in persons and classes who otherwise might go timidly to their graves. . . .
- The mechanical operation of industry is beginning to introduce a "philosophy of fatigue," whereby elaborate tests determine just how long a given individual can work without fatigue poisons[8] damaging his output. No other culture ever dreamed of such controls; controls which obviously make for better physical and mental health. . . .
- Even as pure science brought forth applied science, the necessities of industry have stimulated a great variety of researches into the fundamentals of physics and chemistry. . . .
- Cruelty as a social phenomenon has undoubtedly decreased in the last century— . . . Coincidentally, the radius of social sympathy has increased. Who used to weep for the famine sufferers in China? Now the cable and the camera bid us weep in short order—and we do, to the tune of millions a year. . . .

EFFECTS MANIFESTLY EVIL

- The menace of mechanized warfare grows daily more ominous—particularly in respect to the airplane capable of the three-dimensional attack [land, sea, and air].
- The tenuousness of connection and balance in the interlocked industrial structure also grows. Any crisis—such as a strike of key technicians, a struggle between rival industrial groups, or an act of God [natural disaster] may seriously, perhaps horribly, upset the whole social equilibrium. There is also an alarming shrinkage in the average man's understanding of the technology which shelters, clothes, and feeds him. . . .

illustration by Walter T. Murch in *Men and Machines*

[8] E.g., stress-related hormones.

- Natural resources are being exploited at a rate as alarming as it is wasteful.
- The factor of monotony and wearisome repetition in mechanical work is an ever-present evil, particularly if the worker is temperamentally ill-adjusted to the process.
- Specialized tasks are sundering [breaking apart] the ancient trinity of work, play, and art, and thus tending to upset an admirable, and perhaps biologically necessary, human equation. Meanwhile commercialized and mechanized recreation, with its second-hand rather than first-hand participation, is tending further to upset the equation.
- Specialization has enormously promoted the importance of money, and made it the *sine qua non* [essential condition] of modern life. This leads to a serious confusion of values, in that the symbol displaces the underlying reality.
- Workmen are displaced by machinery faster than they can be absorbed in other occupations without serious social cost. . . .

illustrations by Walter T. Murch in *Men and Machines*

- The existence of more machines than purchasing power to absorb their output has led to the foolish and expensive antics of high pressure salesmanship, and the growing danger of competitive imperialism.
- Machinery has created a new ruling class based on profits—largely manufacturing profits—which is no improvement upon the earlier suzerainty[9] based on land, except that its personnel is subject to a greater rate of turnover. . . . The idle rich are not a new phenomenon, but the scale on which they now operate is unparalleled.
- It is claimed that the ratio of mental diseases to the whole population is increasing. I find no satisfactory proof of this claim, but if it is true, it registers a fundamental count against the strains and stresses of machine civilization.
- The increased speed and use of the mechanical process has made for a greater accident rate in the United States since 1920. . . .
- At the present time, industry is clearly overvalued at the expense of agriculture. Too much attention is being given to the former and not enough to the latter. In the United States agriculture is in a state of chronic depression in some of its departments all the time, and in all its departments some of the time.
- Mechanization has led to cities so congested that it gives little pleasure either to live in them, or to contemplate what will happen if the pressure becomes much greater. It is estimated that traffic congestion now costs the city of New York a cool half billion a year. . . .
- Machines have engendered a volume and variety of noise hitherto unknown, and which in the opinion of certain medical authorities is damaging both the ears and the whole nervous system of those subject to it.
- Dust and smoke constitute two additional evils of the Power Age. The one leads to an alarming mortality [death rate] in diseases of the respiratory system, the other to the exclusion of sunlight with its health-giving ultraviolet rays, and to a general environmental ugliness and depression.
- The first effects of introducing the machine into a civilized community are normally disastrous. We have noted in some detail [in preceding chapters] what happened in England. Much the same story could be told of Japan, India, China, today.
- By and large the impact of the machine on nature peoples[10] has been an unrelieved story of progressive degeneration. Firearms, factory rum, and ready-made clothes, with their concomitants [accompanying aspects], have corrupted every littoral [coastal area; shore] upon which they have landed.

[9] *Suzerainty*: control or authority over a territory, dependent nation, or, as in medieval feudalism, an area of land.
[10] I.e., "primitive" groups in isolated areas that have developed few or no mechanical devices.

EFFECTS BOTH GOOD AND EVIL

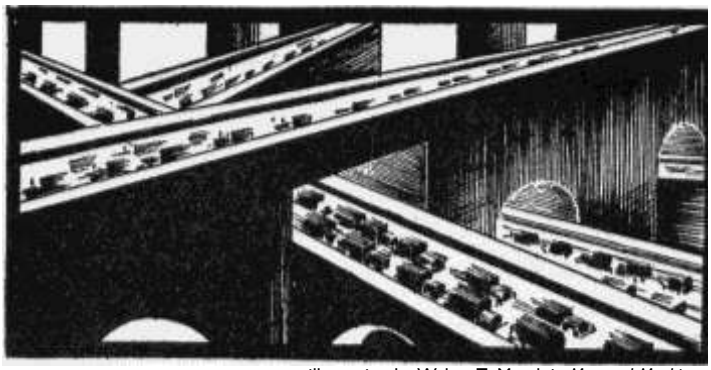


illustration by Walter T. Murch in *Men and Machines*

- Population has increased and migrated on an unprecedented scale during the course of the industrial revolution. The increase has been due more to a declining death rate than to a growing birth rate. . . . migration is frequently a wholesome phenomenon, but the greatest migration of all—from farm to city—has undoubtedly been overstimulated.
- The machine has brought community self-sufficiency to an end. This makes for greater productive efficiency when everything is going well, and for greater social disaster when everything is going ill. . . .
- Machines uproot old skills, but create new ones. The new may often lack the craftsmen's individual touch, but they give the modern youngster a greater variety from which to choose. . . .
- The machine has deprived the housewife of her sometime skills, and so forced uncounted women into futility and neurotic unrest. It has also forced women into the wage-earning class, and thus launched the feminist movement. Feminism is hardly an unmixed blessing, but it will undoubtedly show a net gain in the ledger of history.
- The factory puts women and children to work under conditions which are frequently intolerable. But if conditions are made tolerable—as they can be—it is possible to regard machinery as something of a benefactor in providing useful work for whole classes hitherto restrained therefrom by physical handicaps. Children, of course, should be kept out of industry—except as a part of their regular schooling.
- In the mass production industries, a man may earn as much at twenty as at forty—quite possibly more. This upsets all known traditions, but I am not sure it is necessarily an evil thing. Youth has greater capacity to enjoy a good income.
- The Power Age has broken up the *mores* [ethical guidelines] of marriage, the family, religion, to a marked degree. This is a painful process, but perhaps invigorating.
- Quantity production in goods and printed matter has made for uniformity over a wider area than has obtained [occurred] in any previous culture—save possibly that of China. . . .
- The machine has ruthlessly destroyed a whole age of art, but is busy creating a new age, which already, in architecture and design, has achieved distinction. . . .
- The quality of certain goods has fallen, while the quality of others has improved. . . . We also note the beautiful mechanisms employed to turn out terrible trash—for instance the broadcasting control board, with a cheap politician before the microphone.
- We tend to draw our knowledge increasingly from written documents and decreasingly from first-hand experience . . . This divorces us from reality, but gives us wider scope. . . .
- Life moves faster than it ever did. There is far more to experience and rather less emotional ability with which to experience it. . . .
- When the workman left his cottage and his shop for the factory, he lost his economic independence. He gave up his own tools and operated tools owned by somebody else. He ceased to control his own time and his own job. . . . If, however, the force . . . regards the workman as a human being for whose benefit the wheels of industry are principally turning, he may well stand to gain more than he has lost. In the last analysis more economic independence is to be secured in a machine technology, humanly controlled, than ever obtained in the handicraft area.

. . . The reader must draw his own conclusions, but as I study the schedules, I incline to the belief that machinery has so far brought more misery than happiness into the world. It has, however, brought the fresh winds of change, and with them, vitality and invigoration. . . . With change, improvement is always possible. The trend is towards improvement in many departments. If the triple menaces of war, technological tenuousness, and failure of natural resources can be forestalled, and some sort of conscious functional control inaugurated, perhaps in another generation the net balance may fall on the other side.