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generation

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YOU AND YOUR
GENERATION

AN ADDRESS

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BY

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YOU AND YOUR GENERATION

IN the whole record of time there probably is no century whose first third has seen such a profound change in the mode of life and thought of the world at large than has the first third of the present century. There may have been changes as startling in character in previous periods. However, they were not so numerous nor so far reaching in their effects on the world at large in a similar length of time.

For five thousand years facilities in industry, transportation, and communication remained practically the same all over the world until about a century ago, when a new era of mechanical progress began, based on steam. Now we have added to that basis, electricity. The simple steam engine has been replaced with turbine engines, combustion engines, automobiles, aircraft, and organization. Less than thirty years ago the country had one automobile to every 1788 people—now probably one to every seven or eight.

Thirty years ago there was one telephone for every ninety people in this country. Ten years ago there was one to every eight. The number is greater now.

The doings of the world are made known to us a few hours after their occurrence by ordinary telegraph, "wireless," radio and telephone. We talk across land and sea and get messages from flying machines, rapid-traveling trains and steamships. We have invented machinery that enables us to move practically whole populations over highly-improved roads in a short time. The machine age has brought the mass production system of industry and has affected the division and distribution of labor. It is a factor in the growth of cities and the depopulation of rural districts. It has changed the houses in which we live and taken us from the level of the earth, or a story or two above it, to a level of twenty, fifty or seventy stories. The

automobile has nearly driven horses from the streets of our cities and is rapidly driving out electric street cars and reducing the passenger traffic of railroads. The airplane has come in to lend assistance to the automobile. We turn out newspapers every day by the million, to say nothing of books. Our mail is delivered by railroad trains and airplanes in a fraction of the time required thirty years ago. The moving picture machine and the "talking movies" have largely destroyed two old professions and created some new ones and give us a vivid acquaintance with people in all parts of the world. More lately comes television to enable us to see those we are talking with miles away. We are promised, too, some kind of machine that will enable us to read one another's thoughts.

Thirty years ago in digging trenches, preparing for foundations of great buildings, digging canals, drainage ditches and similar projects, men drudged away individually with shovel and pick, cart and wheelbarrow. Today, machines which will pick up tons of material at a time have displaced practically all of this labor. We bridge rivers and tunnel under rivers, mountains and seas on a scale not dreamed of a generation ago.

In earlier days we made steel in small quantities by hand processes. Now it is reported that a mill has been put up at Sharon, Pennsylvania, which rolls steel strip at the rate of twenty-six miles an hour. The steel is said to go through the rolls so fast that one end of the strip is in the shipping room before the other end leaves the furnaces.

Material progress has been paralleled with advance in other fields and in scientific theory.

In medical science, too, advance has been made. In our Spanish War there was one case of typhoid fever to every five or six men within three and one-half months; in the World War there was one case to every twenty-seven hundred men.

In 1900 President Roosevelt appointed the Walter Reed Commission on Yellow Fever. You know the story of the heroic self sacrifice of Doctor Lazear and the courage of the two private soldiers who offered themselves for

experiment. The discovery that the germ of yellow fever was carried by a certain kind of mosquito made possible our construction of the Panama Canal. It is said that while our French friends were attempting this one man was sacrificed for every cubic yard of earth removed.

Progress in the use of anesthesia has been marked. Local and regional anesthesia are recent. Plastic surgery, skin and bone grafting and many other surgical processes are recent.

Conditions of living for the great mass of our people have improved. Less than thirty years ago about 8 per cent of factory workers had a forty-eight hour week. The latest available data showed 50 to 60 per cent working forty-eight hours or less. Meantime, wages have risen 30 to 35 per cent. The risks of industry have been diminished by compensation laws and safety devices and regulations. Greater care is taken to provide good working conditions.

As to education, the enrollment and length of the school year have both increased beyond precedent. The number of college and university students has multiplied five times in thirty years. The number of secondary students has multiplied six times. Meantime, population has not quite doubled.

Advance in material prosperity has been accompanied with changes in scientific theory and in men's views on politics, religion, and culture.

Perhaps the science of physics or physical chemistry is the field in which the most startling changes have occurred in the past thirty years, although astronomy is not far behind. A great volume of new facts about the structure of matter has been collected. Scientists have tried to formulate the laws of their action. In doing this they first pictured a minute system of bodies somewhat similar to our solar system. Later it became evident that such an analogy or picture does not fit all the facts. Consequently we are now in a period where instead of comparing the structure of the atom to the solar system the physicists have resorted to mathematical formulas for an explanation. In astronomy new theories were developed on the basis of Einstein's

theory of relativity and have given us what are called "time-space" relations or dimensions.

In the political field, democracy as a system has been challenged by Fascism, dictatorship and mobocracy.

Within democracy itself not all the changes have been altogether advantageous. It seems to me that some of them, like the primary system, and popular election of senators, and certain constitutional trends, have not brought the benefits anticipated.

The rapid material and scientific advance has produced what I may describe as a state of exaltation in the human mind that has led to sundry extravagances, as they appear to me, in our literature, our ethics, our so-called "social sciences," and in general in those things that make up the culture of a people. Material advance and new pronouncements about the physical world have led careless thinkers to believe, or to act as if they believed, that human life itself is merely a manifestation of physical action and consequently that there are no principles of morality, religion, or culture that need any longer be observed. Some tell us that science has abolished soul, mind and God. To these people we humans are "just meat, and pretty coarse meat at that." To my mind, their reasoning is illogical and their conclusions are false. As I see it, I know no reasoning more superficial than that which characterizes the theories of psychologists who think they have banished the human soul or those so-called philosophers who have abolished God and substituted trial marriage for a morality above their own comprehension or culture.

Our new knowledge does make necessary new statements of our conception of God and man's relation to Him and the universe but it does not abolish Him, or obliterate the soul, or render necessary the destruction of a morality and culture that are the product of age-long striving. We have been going through a period of license. We are living in an age of casuistry.

I will not attempt to compete with Edward Bellamy or H. G. Wells as a prophet of the future. Nevertheless, it is not inopportune to look forward a few years as well as we

can to see what phenomena you may have to deal with in your generation. I do this with less hesitation because I am sure that you engineers will build greater structures; that you agriculturists will multiply products; that you social scientists will give us a better economic and social order; that you scientists will evolve new theories; and that you literary people will write it all down in Addisonian prose and some in Illini poetry, and modern "journalese" in which accuracy of statement will be subordinated to spectacular presentation!

Some people believe that by and by we shall be able to command an amount of energy far beyond that at our disposal today. Some think this will come from the tides or winds or sun. Others tell us of the possibility of decomposing the atom. We are told that from a pound weight of some radio-active material we can get as much energy as we now get from a hundred and fifty tons of coal. Some tell us that a pound weight of some other radio-active material may possibly hold power equal to that of a hundred and fifty tons of dynamite—enough to blow a modern city into oblivion. We are comforted, however, by a great scientific authority, no less than Mr. Millikan, who tells us that new evidence "born of further scientific study is to the effect that it is highly improbable that there is any appreciable amount of available sub-atomic energy for man to tap."

Transportation will undoubtedly be greatly quickened through the use of the airplane. The application of power to production will be immensely increased and if this application is wisely made and its results wisely used it will be possible to decrease labor and give men the leisure for mental, moral, and physical improvement. The long distance transmission of electric power may lead to a new period of local or home industries.

As to the "invariable laws" of the physical universe, we must remember that our formulation of these invariable laws has frequently changed. We no longer believe in Ptolemy's theory of the solar system, or in those of Copernicus, LaPlace or Descartes, or, even with the fullness

of belief of a generation ago, of Newton. In 1890 atoms were little particles and electricity a mysterious fluid. Now, roughly speaking, we talk of atoms, electricity, light rays, etc., as identical. In 1895 we were startled by the discovery of Roentgen rays. This, with the discovery of radium and of the disintegration of matter, gave us new views of the universe by 1905. A little later, as I have already remarked, we spoke of the atom as being, roughly, a kind of solar system. Doubt is now expressed as to the correctness of this picture. Einstein's theory that time as well as space must be considered in describing the relations of the parts of the universe and the universe in general gave us a new view point. Now it is rumored that he himself has some doubt about his former views.

I think we may safely say that none of our knowledge, no theory, no so-called "law" about the universe is final. It is after all but a working hypothesis.

Final "Truth is eternities away,
And we but climb
In the dark of Time,
To the dawn of day."

We can but have faith that "out of the false the true will grow."

Science does not teach us to live wisely. It tells us what results will follow from certain lines of procedure and nothing more. Whether these results are good or bad for us is a matter on which science has nothing to say. As Dean Gauss of Princeton wrote in a recent article, Lincoln, Washington, St. Francis of Assisi, Confucius, Christ, Socrates and many others all lived wisely without modern science. Wise action is not to be attained by following the dictates of a physical law, unless we know beforehand that the end of the working of that law is itself wise and good. When the lion eats an antelope, as Dean Gauss says, he is, biologically speaking, a good lion because he is acting according to his nature; but the word has no moral meaning in that connection. He goes on to say that "to make it possible for a social, a moral system, a civilization to endure

at all, there must be stabilizing forces which are not scientific and the world up to the present has been wise not to accept Galileo and Kepler and Newton and Darwin and Einstein, great scientists though they were, as its stabilizing forces."

In short, no moral significance can be attached to the laws of physical science unless we believe that there is an ultimate underlying directive intelligence originating the physical phenomena in question. The latest thought of physical theory seems to be in this direction. Those who were so ready to accept the mechanistic theory of the universe did so on the ground that physical laws explained origins and causes as well as operations. This is a common mistake.

Whatever else scientific discovery and material advance have done, they certainly have made possible the exercise of tremendous power by a single individual. Before the present generation one man's strength was, generally speaking, but the strength of one. With modern discoveries and the opportunity to use them one man may exert the strength of thousands. The presence of destructive power is not a restraint upon its use. The restraint upon its use must be moral, or spiritual, and it is in the development of the moral and the spiritual that we must find safety and happiness in the use of these tremendous agencies of power. Here is a lesson for the next generation; here is a lesson for society in general. Here is a task that lies largely and primarily upon you and young people like you who are going out to take up the burdens that we older ones must now lay down. It is of vast importance, of course, for the welfare of mankind that these physical agencies be developed. It is of far more importance that men should know how to use them and how to restrain themselves in their use. And so we must go back to some old principles of conduct—the law of love, self-restraint, regard for one another's rights rather than the free, unlimited expression of our own; due respect for the opinions of others, but not a holy worship of them; due respect for what are called "new things," but only after we have

seen them subjected by competent minds to the scrutiny of severe logic and they have been compelled to justify themselves to the common sense and experience of men.

What will your generation do in politics? Will you overthrow democracy for some abandoned form of government or for some one of the newer forms? In spite of its defects, I for my part see no reason to think that any better form of government than the democratic republic, or representative government, is likely to be devised. Its defects are removable by education and education only, using that word to include improvement of character as well as of mind.

As to world relations, you, of course, like this generation, believe in permanent peace and will do all you can to bring it about. The spirit of nationalism is stronger than ever before. Each nation has an individuality of its own. The problem will be to federate these various national units into some such combination as we have made of the separate States of the Union. I believe that that federation will come and that it will fall to you in some degree to promote its progress.

It almost seems as if the final meeting of the civilizations of the East and the West will be on the Pacific Ocean. Whether that meeting will become a conflict on a larger scale like that in which Charles Martel on the plains of Tours in the eighth century prevented the overwhelming of western civilizations or whether it will be a peaceful meeting, continuing the separation or providing intermingling on terms determined by wise counsel to the common advantage of both, may depend largely on you. Asia is rapidly becoming westernized in respect to its adoption of the material and scientific characteristics of Occidental civilization. When its development in this direction has been fully accomplished the crisis will be at hand. When the wisdom of men is tested then to prevent a holocaust or promote a culture, you should be there. There is much to be said for former President Taft's view, expressed before the outbreak of the World War and having no relation, therefore, to institutions or controversies that have devel-

oped since, when he said, "the ideal that I would aim at is an arbitral court in which any nation could make complaint against any other nation, etc." This is but the application of the doctrine governing the relations of our States.

However, the abolition of war is not to be obtained by organization and agreements. Such abolition is a matter of the spirit. Therefore it is a matter of education. Men will not be deterred from going to war because science has made it more horrible. War will disappear when men generally believe that its evils are greater than those that could occur without it, and that whatever good it produces is less than its cost in moral, esthetic, spiritual, and religious values. As Doctor Nansen somewhere remarks, "the most important factor for peace is disarmament of the mind."

Have due respect for the established order. Much is said in these days about not believing anything on authority. There is a sense in which the advice is good and another in which it is foolish. It is good in so far as it tells us not to submit to compulsion in forming our ideas. It is nonsense in so far as it advises us not to believe anything that we cannot ourselves prove, because it is impossible for all of us to have either the knowledge or the time to prove for ourselves more than a few of the opinions we hold. Our whole social structure is built on faith in the honesty of one another.

Keep an open mind but avoid credulity. Do not be misled by words. Remember that a phrase or a slogan is likely to have more influence with the crowd than a principle. You will find yourselves dubbed as liberals or conservatives or socialists or what not by people who wish to push their own views to the exclusion of your own. It has become the fashion to apply the term "liberal" to anybody who attacks the existing order of society or thought whether his attack is well founded or not. The true liberal is characterized most of all by tolerance. He is tolerant of the new but does not repudiate the old simply because it is old. He is ready to give reasons for his new belief. He admits that when a new prophet appears the world is en-

titled to ask him for his credentials if he wishes the world to listen to him. But there is no obligation on you to listen to him. It is not a suppression of freedom of speech to tell certain so-called philosophers of today that we do not care to hear their doctrines destructive of accepted moral relationships between the sexes, of the family tie, of the subversion of our ideas of marriage, etc., put out under the name of liberalism. We have a right to tell them that they may hire halls or stand on the street corners and preach their doctrines but that they may not preach them in our houses or on our grounds. That refusal is not suppression of free speech. It is a refusal to admit their right to impose themselves upon us.

Do not be too ready to accept the "new" as final and to make inferences from it about matters with which it has no connection. We have made that mistake in our generation in our efforts to apply the methods of the physical sciences in our education, in literature, history, economics, sociology. Remember that what is new may not be important, or even true, and much that is true and important is not new.

Do not get excited over the appearance of prophets with new doctrines. Every generation produces some men and women of unusual quality, even of greatness of mind, clearness of perception, capable of blazing new paths of progress for mankind. They are often accompanied, like an army, by many camp followers. Do not think that the noisy group who accompany them in cap and bells and tambourine are the real messengers of the new day, although they usually get the greater popular attention.

What of the future of religion! What will your generation believe? He would be a rash man who would prophesy. The most important task of your generation here will be the readjustment of spiritual ideas to new knowledge. "Who can really tell us whether the ultimate moving spirit of human life resulted from the flowing together, the integrating, of such instincts as sex, pugnacity, hunting, and the like, or whether, on the other hand, some strong pull towards something never clearly comprehended

has perpetuated these as a means to an end?"¹ The latter is my own belief.

Some of our greatest physicists are now telling us that their latest investigations appear to reveal some evidence of the existence of a directive force underlying these unchanging laws and that "thought waves may themselves be a creative or causative force." I cannot help agreeing with Doctor Pupin, the great electrician, when he says, "Our faith in the creative power of the soul should be at least as strong, [as our faith in the radiating power of the atom] for surely the world of consciousness, the product of that creative power, is at least as real as atomic radiation."

✓ But even this newest conception of the laws of physical organization and operation does not give us God in the sense in which humanity needs God. If science finally concedes the presence of such a directive force, the force as such will be of no use to humanity unless it is found to have a personality, and that, too, a personality recognizing the difference between "good" and "evil," "beautiful" and "ugly," "holy" and "obscene."

"How can we know? How can we understand?
Who build a house of Truth upon the sand
How can we know, who know our truth is based
On finite facts by infinity effaced,
On parallels that meet in space behind,
On matter that is force, unconscious, blind?
Why should we know? Why should we live at all?
Why all this toil and strife?"

And so today you go—where? how? with what spirit? —to seek new answers to some of these questions and new solutions for some of these problems, which answers and solutions will be no more final than ours? Some of you will go to homes across the sea. Some of you will go to lands that are foreign to you. Some of you will go to live in parts of our country other than those in which you have

¹Brown, "Creative Spirit," page 27.

been brought up. Wherever you go, go with heads high, courage strong, hearts cheerful, and determined to give the world the best that is in you. Some of you will go to what the world regards as high places and some of you will fill positions that in the eyes of man are humble and lowly. Let not your hearts be troubled thereby. Your contribution to the final success of humanity may be greater than humanity itself can know. Some of you will succeed and some of you will fail, so far as material wealth is concerned. The true and ultimate measure of the success of your real contribution to your own life and to the lives of your fellow men will be measured by the degree in which you leave the world better than you found it.

I bid you go forth in the spirit of the Illini tradition. That tradition is a spirit that does not falter before difficulties and dangers. It is one of high purpose and lofty courage; it is a tradition of hard work that we may learn the more; a tradition of devotion to duty in private business and in public service; a tradition of learning that seeks to know the facts, to find the truth in the belief that the truth "will make you free"; a tradition that will bid you act in the sense of that glorious motto of our athletic contests, applicable to all acts of life, that we win without boasting and lose without excuses; a tradition that calls on you to preserve the spirit of the pioneers who made it their mission to know the unknown, to dispel error, to add something to the sum of the world's knowledge. Go forth, then, in the spirit of that tradition with loyalty and love for your Alma Mater, profiting by what you have done here, keeping old friendships and making new, in order that your fathers and mothers, your friends, your Alma Mater, your country, and your God may at the end be able to say "you have done well."