What Life Means to Einstein
An Interview by George Sylvester Viereck

RELATIVITY!
What word is more symbolic of the age? We have ceased to be positive of anything. We look upon all things in the light of relativity. Relativity has become the plaything of the parlor philosopher. Is there any standard that has not been challenged in this our post-war world? Is there any absolute system of ethics, of economics or of law, whose stability or permanence is not assailed somewhere? Can there be any parent who will not change the value or any absolute truth in a world in which the three angles of the triangle have ceased to be equal to two right angles—in a world in which time itself has lost its meaning, in which infinity becomes finite, and the finite is lost in the infinite?

Einstein refuses to sponsor newfangled theories which draw their justification from his own assault upon the certainties of mathematics. His voice was bell-like and gentle, but his words were decisive when he spoke with one of the rash application of the term 'relativity' to philosophy and to life.

"The meaning of relativity," he said, "has been widely misunderstood. Philosophers play with the word, like a child with a doll. Relativity, as I see it, merely denotes that certain physical and mechanical facts, which have been regarded as positive and permanent, are relative with regard to certain other facts in the sphere of physics and mechanics. It does not mean that everything in life is relative and that we have the right to turn the whole world mischievously topsy-turvy." I now remembered that some years ago, when I first met Einstein in New York, he had emphatically resisted the suggestion that he was a philosopher. "I am," he said, "merely a physicist." In spite of these remarks, Einstein stands in a symbolic relation to our age—an age characterized by a revolt against the absolute in every sphere of science and of thought. He is a child of his age even if he exerts metaphysics.

A Born Teacher
LIKE Napoleon, like Mussolini, Albert Einstein has the distinction of having become an almost legendary figure in his own lifetime. No man since Copernicus, Galileo and Newton has wrought more fundamental changes in our attitude toward the universe. Einstein's universe is finite. Seen through Einstein's eyes, space and time are almost interchangeable terms. Time appears capricious as a fourth dimension. Space, once undefinable, has assumed the shape of a sphere. Einstein taught us that light travels in curves. All these facts are deduced from the theory of relativity advanced by Einstein in 1915.

With the advent of Einstein, mathematics ceased to be an exact science in the fashion of Euclid. The new mathematics appeared in the midst of the World War. It is not impossible that in the evolution of human thought Einstein's discovery may play a greater part than the Great War. His fame may outlive Foch and Ludendorff, Wilson and Clemenceau.

Einstein, in the words of his favorite colleague, Erwin Schrödinger, explains the fundamental laws of mechanics as geometrical proportions of space and time.

I shall not attempt to expand this statement. It is said that only ten men understand Einstein's theory of relativity.

Einstein's patience is infinite. He likes to explain his theories. A born teacher, Einstein does not resent questions. He loves children. The ten-year-old son of a friend was convinced that he had discovered the secret of perpetual motion. Einstein painstakingly explained to him the flaw in his calculations.

Whenever a question involving a difficult mathematical problem comes up, Einstein immediately takes up his pencil and covers page after page with the most intricate equations. He does not refer to a textbook; he works out such formulas immediately himself. Often the formula thus obtained is clearer, more comprehensible and more perfect than the equation that is found in books of reference.

Time in Space
RECENTLY someone talked to him about color and Einstein immediately revolved the subject in his mind. He studied the camera, he made various calculations about the previous day, and he had evolved a new method of color photography.

It is difficult for him to explain his theories when he writes an article for lay consumption. But when the inquiring layman exposes the absurdist of his ignorance, he finds he has the right to turn the whole world mischievously topsy-turvy. I now remembered that some years ago, when I first met Einstein in New York, he had emphatically resisted the suggestion that he was a philosopher. "I am," he said, "merely a physicist." In spite of these remarks, Einstein stands in a symbolic relation to our age—an age characterized by a revolt against the absolute in every sphere of science and of thought. He is a child of his age even if he exerts metaphysics.

"I know I form at least a dim idea of the fourth dimension."
"Imagine," Einstein replied, "slightly inclining his head with the crown of curly white hair, "a scene in two-dimensional space—for instance, the painting of a man reclining on a bench. A tree stands beside the bench. Then imagine that the man walks from the bench to a rock on the other side of the tree. He cannot reach the rock except by walking either in front of or behind the tree. This is impossible in two-dimensional space. He can reach the rock only by an excursion into the third dimension.

"Now imagine another man sitting on the bench. How did he get there? Since two bodies cannot occupy the same space at the same time, he can have got there only before or after the first man moved. He must have moved in time. Time is the fourth dimension. It has the same relation to space as length has to the plane. Now imagine a graph of any problem of mathematics and you will see that the plane of the graph is the third dimension and the third dimension is the fourth dimension of the graph."

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I tried to secure an explanation of the fifth dimension. I regret to say that I do not remember the answer clearly. Einstein said something about a ball being thrown, which could disappear in one of two holes. One of these holes was the fifth, the other the sixth dimension.

I find it easier to understand Einstein's discovery, promulgated in 1922, which explains the universe in terms of electromagnetism. But; unfortunately, Einstein has not yet completely succeeded in convincing himself. He does not look upon the six chapters that started the world, pages immediately transmitted in facsimile across the ocean, as a final conclusion.

To reach his conclusion, it was necessary for Einstein to express gravity in terms of electromagnetism. The formula needed for this purpose is so complex, that in order to explain its meaning he was compelled to create a new system of advanced mathematics.

Einstein's new system reconciles Einstein with Riemann. It restores parallel lines, which Riemann abolished. According to Riemann, there can be no parallel lines in a curved universe. Einstein rediscovered parallel lines with the aid of the fourth dimension. Don't ask me to explain the process in detail. It is a thing that can be told in a series of intricate pages, and the result is that no human being can understand Einstein himself, can visualize.

"No man," as Einstein said to me, sitting comfortably on the couch of the sitting room of his Berlin office, "can visualize four dimensions, except mathematically. We cannot visualize even three dimensions."

"But don't you," I said, "think in four dimensions?"

"I think in four dimensions," he replied, "but only abstrクトly. The human mind can picture these dimensions no more than it can envisage electricity. Nevertheless, they are no less real than electromagnetism, the force which controls our universe, within, and by which we have our being."

I am particularly interested in your new theory which proves that gravity and electricity are one. Surely no six pages can explain the twelve pages of his book. Here is a new revolutionised human thought?"

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James had once told me to come to no one in family for two prira donnas.

The storm and stresses of the period has proven its mark on Einstein's features, but not in his heart. He is as interested in the children of his first marriage, and he has adopted as his own the children from his first marriage. One of his commentators, Alexander Moskowski, calls Einstein a meshesian. When the baby was born, his face broke into a smile of real and more intellectual. If Briand expresses Pan-Europe, Einstein's vision embraces the word.

Einstein's struggles with fate have left no bitterness on his tongue. Every line of his face expresses kindliness. He is home and incomparable. Some friends and admirers learned that he had decided to build a summer house with his hard-earned savings. They offered him a princely gift of land. But Einstein shook his head. "No," he said; "I could accept a gift from a community. I cannot accept such a gift from an individual. Every gift we accept is a tie. Sometimes," he added with balmistic wisdom, "one pays most for the things one gets for nothing.

**Our Intellectual Democracy**

A speculative thinker, a practical engineer, a sportsman and an artist, Einstein comes close to the Greek ideal of harmonious development. When he neither sails his boat nor permits his mind to meander through four-dimensional space, Einstein enjoys himself with his violin. While I waited at the door of his apartment, it seemed to me that I heard strains of olin music. Perhaps it was Einstein playing. When I entered, he was wrapping up his violin for the night like a mother putting her child to bed.

Professor Einstein looks more like a musician than like a mathematician. "I", he confided to me, with a smile that was twirly, half apologetic, "I was not a physicist, I would probably be a musician. I often think in music. I live my daydreams in music. I see my life in terms of music." "Perhaps," I remarked, "if you had chosen to become a musician you would probably be Richard Strauss and Schönberg, or perhaps you would be Paganini as the master of the spheres or a four-dimensional musician." Einstein gazed dreamily—is it into the far corners of the room, or was it into his thoughts which his investigations have robbed of infinity? "I cannot tell," he replied, "if I would have done as productive work of importance in music, but I do know that I get most joy in life out of my violin." As a matter of fact, Einstein's taste in music is very classical. Even Wagner is to him no unloved feast of the ears. He adores Mozart and Bach. He even prefers their work to the architectural music of Beethoven.

**The Saturday**

**His Attic Retreat**

Although the most-talked-about scientist of our time, the man who absolutely refuses to capitalize his reputation. He laughe when he was asked to comment on any recent patents.

"The money offered for his name would have paid the expense of his summer home for twenty years, but he has set his heart on the new field of his passion—geometry.

Einstein's childhood companion, the present Mrs. Einstein, also married and became the mother of a family. Einstein's first wife died after a few years of marriage. Then some friends, who are mentioned in his book, introduced Professor Einstein in his dynamic equations, drew the two couples together. Albert Einstein, the man who invented the special theory of relativity, married his widowed cousin. Perhaps it is a mistake to physiological man and married his widowed cousin. Perhaps it is a mistake to physiological man and married his widowed cousin. Einstein had no education.

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President Hindenburg hardly ever appears in public, because he is immediately recognized wherever he goes. For the same reason, he refuses all invitations to the more popular restaurants. Although his world fame compels him to seek secluded places, he lives quiet chats over his own dinner table with such friends as Gerhart Hauptmann and Professor Alexander. He reads only little. Modern fiction does not seduce him. Even in science he limits himself largely to his speciality; after a certain age divert the mind too much from its creation. He who much and uses his own brain too little falls into lazy habits of thinking, just as the man who cooks too much in the theater is tempted to be content with living vicariously instead of living his own life.

In his own field of thought Einstein follows every development with keen interest. He has the gift of reading at a glance a whole page of equations. Einstein can master a whole new system of mathematics in half an hour.

"Who," I asked him, "are your greatest contemporaries?"

"I cannot reply to this question," Einstein answered, "his eyes twinkling humorously, "without compiling an encyclopedia. I cannot even truthfully say the men who labor in my own field without writing a book."

"Our time," he added, "is Gothic in its spirit. Unlike the Renaissance, it is not distinguished by a few outstanding personalities. The last century has established the democracy of the intellect. In this century public opinion can take many men who take an equally important part in the intellectual movements of our age. It is as if the speech of the individual that is important. There is no one dominant personality like Galileo or Newton. Every century has its disestablished democracy. The life of the world, there are few men whose strong speech immediately sets them apart from all others."

"Whom do you consider the most conspicuous worker in your own field?"

The Contemporary Great

"It is not fair," Einstein replied, "to single out individuals. In Germany, I consider Schrödinger and Heisenberg as being of special importance." "Or Besseling," I said. "What has he done?"

Schrödinger has discovered the mathematical basis of the fact that all life moves in waves.

"And Heisenberg?"

Heisenberg is a sovereign mathematician who has formulated a new definition of mathematical magnitudes. Then there is, of course, Planck, the exponent of the quantum theory."

I did not ask Einstein to explain the quantum theory. I know that it is even more difficult to grasp than relativity.

"Would you say that Eddington is your most brilliant interpreter?"

"Eddington," Einstein replied, "is a great physicist, but his supreme achievement is his discovery of the mathematical constitution of the stars."

"What is his achievement?" "Anyone in America whose importance is commensurate with that of the men you have just discussed?"

"In America," Einstein replied quietly, "more than anywhere else, the individual is lost in the crowd. America is beginning to be the world leader in education. I think the American scholarship is both patient and inspiring. The Americans show us the unique devotion to science, the openness of the conventional European view of your country. Too many of us look upon American scholarship as a sort of an exclusive club, even if it is reiterated thoughtlessly by the Americans themselves. It is not true that the dollar is an American fetish. The American student is not interested in dollars, not even enough as such, but in his task, the object of the search. It is his painstaking application to the study of the infinitely little and the infinitely large which accounts for his success in astronomy."

"What," I asked, "have been our most outstanding accomplishments in your field?"

"America," Einstein replied, "has been especially successful in increasing our knowledge of the fixed stars. But in Holland and Belgium there are men who have done remarkable work."

"The Americans," Einstein continued, "are idealists. Wilson, notwithstanding the collapse of his fourteen Points, was inspired by high ideals. America entered the war for idealistic reasons, in spite of the fact that material interests were exerting the utmost pressure in the same direction.

"We are inclined," said Einstein, "incline his head lightly to one side like a bird—to overemphasize the material influences in history. The Russians especially make this mistake. Intellectual values and ethnic influence, traditional and emotional factors are equally important. If this were not the case, Europe would be today a federal state, not a madhouse of nationalism."

Born in Ulm, Germany, in 1879, educated partly in Italy and partly in Switzerland, as a Swiss as well as a German citizen, Einstein regards international law in the same way with which a teacher looks upon quarrelling schoolboys. In politics he is a devout Socialist. He is not of the positivist school as the ultimate ideal. Poor, a Jew, a Socialist and a pacifist, Einstein rode through four landscapes like millstones around the neck. Einstein conquers all obstacles, including his own shyness, by his irresistible force of conviction. He does not reject any form of government except absolutism. He is tolerant, but he does mean unethical, in his attitude toward Russia.

"What," I inquired, "is your attitude toward Bolshevism?"

"Bolshevism is an extraordinary experiment. It is not impossible that the drift of social evolution hereafter may be in the direction of communism. The Bolshevist experiment may be worth trying. But it is possible that Russia err badly in the execution of her ideal. The Russians make it a mistake of putting faith rather than science above efficiency. They replace efficient men by politicians. Their test stone of public service is not the accomplishment but devotion to a rigid creed.

"Do you believe in the German Republic?"

"Undoubtedly. The people have the right to overrule us. Now, at least, our mistakes are our own."

We Can Do What We Wish, But—

"Do you blame the Kaiser for the downfall of Germany?"

"The Kaiser," Einstein replied, "meant well. He often had the right instincts. His intentions were not frequently more inspired than the labored reasons of his Foreign Office. Unfortunately, the Kaiser was always surrounded by bad teachers."

"It seems to me," I interjected, "that there were two Kaisers in Germany. One was the Kaiser for the German people, the other attempts the situation. The German people, especially the upper classes, failed to produce men of character, strong enough to take hold of the reins of government and to tell the truth to the Kaiser."

"It was partly," Einstein added somewhat hesitatingly, "the fault of Bismarck. Bismarck's philosophy of government was wrong. Besides, there was no one to succeed to the giant. Like many men of genius, he was too jealous to permit any other man to follow him in his footsteps. Even if it is difficult if any other man could have followed the tortuous path of Bismarckian politics.

"But," he added, "we can hold no one responsible. I am a determinist. As much as I believe in free will, I believe in free will. They believe that man shapes his own life. I reject that doctrine philosophically. In that respect I am not a Jew."

"Don't you believe that man is a free agent at least in a limited sense?"

Einstein smiled ingratiatingly. "I believe with Schopenhauer: We can do what we want, but we cannot do as we want. Practically, I am, nevertheless, compelled to act as if free time existed. If I wish to live in a civilized community, I must act as if man is a responsible being.

"I know that philosophically a murderer is not responsible for his crime; nevertheless, I must protect myself from his contacts. I may consider him guilty, but I prefer not to take tea with him."

"Do you mean to say that you did not choose your own career, but that your actions were predetermined by some power outside of yourself?"

The Danger of Too Much Analysis

"My own career was undoubtedly determined partly by my own will and partly by a number of factors over which I have no control—primarily those mysterious glandular influences which Nature inflicts in the very essence of life, our internal secretions."

"Is it 'interested you," I inquired, "that Henry Ford once told me he did not, too, did not carve out his own life, but that all his actions were determined by an inner voice."

"Ford," Einstein replied, "may call it inner voice. Some of us might call it his animus. We moderns prefer to speak of our glands of internal secretion. Each one has his own way of uttering the fact that the human will is not free."

"Don't you deliberately ignore all psychic factors in human development? What for instance, I asked, "is your attitude toward the subconscious? According to Freud, psychic events registered indelibly in our nether mind make and mar our lives."

"Whereas materialistic historians and philosophers neglect psychic realities, Freud is inclined to overstress their importance. I am not a psychologist, but it seems to me fairly evident that physiological factors, especially by our endocrines, control our destiny."

"Then do you not believe in psychoanalysis?"

"I am not," Einstein modestly replied, "able to venture a judgment on so important a phase of modern thought. Honestly, it seems to me that psychoanalytic is not always satisfactory. It may be the only way to help us to delve into the subconscious. The machinery of our legs is controlled by a hundred different muscles. Do you think it would help us to walk if we analyzed our legs and knew exactly which one of the little muscles we must employ?"

"I would not worry about it as it is our destiny."

"The lives of individuals are controlled by a hundred different muscles. Do you think it would help us to walk if we analyzed our legs and knew exactly which one of the little muscles we must employ?"

But from that point of view, it might be quite helpful to delve into the subconscious. The machinery of our legs is controlled by a hundred different muscles. Do you think it would help us to walk if we analyzed our legs and knew exactly which one of the little muscles we must employ? Do you think it would help us to walk if we analyzed our legs and knew exactly which one of the little muscles we must employ? Do you think it would help us to walk if we analyzed our legs and knew exactly which one of the little muscles we must employ?

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I am enough of an artist to draw freely upon my imagination. Imagination is more important than knowledge. Knowledge is limited. Imagination circles the world.