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## **Something Beautiful A Monologue of Einstein Based on a book by Alice Calaprice**

**Paul T E Cusack**

Is Einstein worthy of so much admiration and accolade? Einstein was a mathematical physics, a philosopher, and a German Jew. Politically he was a democratic socialist who believed the solution to the A-Bomb problem was to have one world government. Philosophically, he was a nominal Jew, but his declared religion was one he invented: Cosmic Religion. He did not believe in the Bible nor a personal God. His scientific theory from 1905 was Relativity. It is proven to be wrong recently. His underlying home of all he did was the development of the individual. For that I admire him. He was concerned about the development of his estranged sons; impersonality of machines; governments that demanded military service; declared that war was still murder; didn't believe in a God who punished his creatures; advised a petitioner to lead a harmonious life; and supported the development of Israel and the Hebrew University of Jerusalem. I think Einstein was a darling of the media of the day which is why he is so popular among the general public. Really, science should do its business in the media. It entrenches errors for future scientists and stunts the development of the science. Other than that, Einstein was a good, peaceful man. We should listen to him about the development of the individual. That should be the aim of our government: to help the individual develop to his or her highest level possible.

(Mozart Jupiter Symphony)

### **Act 1 Boyhood**

I am by heritage a Jew, by citizenship a Swiss, and by disposition a human being, and only a human being, without any special attachment to any state or nationality whatsoever.

As a boy of twelve years making my acquaintance with elementary mathematics, I was thrilled in seeing that it was possible to find out truth by reasoning alone, without the help of any outside experience .... I became more and more convinced that even nature could be understood as a relatively simple mathematical structure.

Among the children, anti-Semitism was alive especially in elementary school. It was based on conspicuous racial characteristics and on impressions left from the lessons on religion. Active attacks and verbal abuse on the way to and from school were frequent but not all that serious. They sufficed, however, to establish an acute feeling of alienation already in childhood.

If my theory of relativity is proven successful. Germany will claim me as German, and France will declare I'm a citizen of the world. Should my theory prove untrue, France will say I'm a German and Germany will declare that I am a Jew.

"I am being so terribly deluged with inquiries, invitations and requests that at night I dream I am burning in hell and the mailman is the devil and is continually yelling at me, hurling a fresh bundle of letters at my head because I still haven't answered the old ones.

Strenuous intellectual work and the study of God's Nature are the angles that will lead me through all the troubles of this life with consolation, strength, and uncompromising rigor.

When a blind beetle crawls over the surface of a curved branch, it doesn't notice that the tract it has covered is indeed curved. I was lucky enough to notice what the beetle didn't notice.

Imagination is more important than knowledge. Knowledge is limited. Imagination encircles the world.

The ideals which have guided my way, and time after time have given me the energy to face life, have been Kindness, Beauty, and Truth.

I am truly a “lone traveller” and have never belonged to my country, my home, my friends, or even my immediate family, with my whole heart. In the face of all this, I have never lost a sense of distance and the need for solitude.

I would not want to live if I did not have my work.

Why is it that nobody understands me, yet everybody like me?

I’m doing just fine, considering that I have triumphantly survived Nazism and two wives.

I have no special talents. I’m only passionately curious.

God gave me the stubbornness of a mule and a fairly keen scent.

The development of the mental world (Gedankenwelt) is a continual flight from “wonder.” I experienced such wonder when my father showed me a compass at the age of four or five.

When I examine myself and my methods of thought, I come close to the conclusion that the gift of imagination has meant more to me than my talent for absorbing absolute knowledge.

“I hate my pictures. Look at my face. If it weren’t for this [his mustache], I’d look like a woman!

## Act 2 Mileva

According to Einstein, though his marriage to Mileva, a Serbian woman, lasted for seventeen years, he never really knew her. He recalled that he had married her primarily “from a sense of duty,” possibly because she had given birth to their illegitimate child. He did not know that mental illness was a hereditary disease on Mileva’s mother’s side of the family.... Unable to accept her eventual divorce and Einstein’s often insensitive treatment of her, she became bitter, sometimes causing difficulties in Einstein’s relationship with his two sons. He also eventually conceded that Mileva was a good mother. Still these tragic circumstances, according to Einstein, left their mark on him into his old age and may have amplified his deep involvement in activities of an impersonal nature.

Einstein began his long distant love affair with his cousin Elsa, who lived in Berlin, in 1912 while he was still married to Mileva.....For many years, he had been telling friends that he did not intend to marry [Elsa] and had even considered marrying her daughter Ilse instead.

I must love someone. Otherwise, it is a miserable existence. And that someone is you.

With Mileva, Einstein had two sons, Hans Albert and Eduard, and a daughter “Lieserl”; through his marriage to Elsa, he had two step daughters, Ilse and Margot....Eduard developed schizophrenia at the age of twenty, though up to that time he had been a somewhat fragile but essentially healthy young man pursuing a medical education. Einstein’s only contact with him after leaving Europe in 1933 was through his biographer.

“On the piano, play mainly the things you enjoy, even if your teacher doesn’t assign them to you. You learn the most from things you enjoy doing so much that you don’t even notice the time is passing. Often, I’m so engrossed in my work that I forget to eat lunch.

Another thing, brush your teeth every day, and if a tooth is not quite all right, go to the dentist immediately. I also do the same and am now very happy that I have healthy teeth. This is very important, as you will realize yourself later on.

Don’t worry about your marks. Just make sure that you keep up with the work and that you don’t have to repeat a year. It is not necessary to have good marks in everything.

It is a joy to have a son who has inherited the chief trait of my personality: the ability to rise above mere existence by sacrificing oneself through the years for an impersonal goal.

It is not so important for a person to learn facts. For that he does not really need college. He can learn them from books. The value of an education in the liberal arts college is not the learning of many facts, but the training of the mind to think something that cannot be learned from textbooks.

The school should always have as its aim that the young person leaves it as a harmonious personality, not as a specialist. ....Otherwise, he-with his specialized knowledge closely resembles a well trained dog than a harmoniously developed person.

I never had the chance to teach youngsters. A pity. I would have liked to teach high school.

I am opposed to examinations-they only defer from the interest in studying. No more than two exams should be given throughout a student's [college] career. I would hold seminars, and if the young people are interested and listen, I would give them a diploma.

### **Act 3 Politicians, Scientists and Philosophers**

#### **On Niels Bohr**

Not often in my life has a person given me such joy as his presence as you have....I'm studying your great papers now, and when I get stuck somewhere, I have the pleasure of seeing your kindly, boyish face before me smiling and explaining.

#### **On Max Born**

Born became a pensioner in Edinburgh, and his pension is so small that he couldn't afford to live in England and had to move to Germany.

#### **On Marie Curie**

I do not believe that Mme Curie is power-hungry or hungry for whatever. She is unpretentious, honest person, with more than her share of responsibilities and burdens. She has a sparkling intelligence, but despite her passionate nature she is not attractive enough to present a danger to anyone.

#### **On Galileo Galilei**

The discovery and use of scientific reasoning by Galileo was one of the most important achievements in the history of human thought, and marks the real beginning of physics.

#### **On Mahatma Gandhi**

I believe that Gandhi's views were the most enlightened among all of the political men of our time. We should strive to do things in his spirit; not to use violence in fighting for our cause, but by nonparticipation in what we believe is evil.

#### **On Johann Wolfgang von Goethe**

I admire Goethe as a poet without peer, and as one of the smartest and wisest men of all time. Even his scholarly ideas deserve to be held in high esteem, and his faults are those of any great man.

#### **On Adolf Hitler**

In Hitler we have a man of limited intellectual abilities, unfit for any useful work, bursting with envy and bitterness against all of those whom circumstance and nature had favoured over him....He picked up human flotsam on the street and in the taverns and organized them around himself. That's how he became a politician.

#### **On Lenin**

I respect Lenin as a man who gave all his energy, at a total sacrifice of his personal life, to dedicating himself to the realization of social justice. I don't consider his methods appropriate. But one thing is certain: men such as he are the guardians and renewers of mankind's conscience.

#### **On H A Lorentz**

Lorentz is a marvel of intelligence and exquisite tact. A living work of art! In my opinion he was the most intelligent of the theorists present [at the Solvay Congress in Brussels]....To me personally, he meant more than all the others encountered in my lifetime.

#### **On Isaac Newton**

It was highly honourable of his logical conscience that Newton decided to create absolute space....He could just as well have called the absolute space the "rigid ether". He needed such a reality in order to give objective meaning to acceleration. Later attempts to do without this absolute space in mechanics were (with the exception of Mac's) only a game of hide-and -seek.

In my opinion, the greatest creative geniuses are Galileo and Newton, whom I regard in a certain sense as forming a unity.

Newton was the first to succeed in finding a clearly formulated basis from which he could deduce a wide field of phenomena by means of mathematical thinking-logically, quantitatively, and in harmony with experience.

### **On Max Planck**

He was one of the finest people I had ever known...but he really did not understand physics, [because] during the eclipse of 1919 he stayed up all night to see if it would confirm the bending of light in the gravitational field. If he had really understood the general theory of relativity, he would have gone to bed as I did.

### **On Bertrand Russell**

Great spirits have always encountered opposition from mediocre minds. The mediocre mind is incapable of understanding the man who refuses to bow blindly to conventional prejudices and chooses instead to express his opinions courageously and honestly.

I read [to some visitors] Bertrand Russell's article on religion. I consider him to be the best of the living writers.

### **On Bishop Fulton J Sheen**

Bishop Sheen is one of the most intelligent people in today's world. He wrote a book in which he defends religion against science.

### **Act 4 OnWorld War 1**

At times such as this, one realizes what a sorry species one belongs to. I am moving along quietly with my contemplation while experiencing a mixture of pity and revolution.

How is it that this culture-loving era could be so monstrously amoral? More and more I come to value charity and love of one's fellow being above everything else.

Even the scholars in various lands have been acting as if their brains have been amputated.

The psychological roots of war are, in my opinion, biologically founded in the aggressive characteristics of the male creature.

One should keep in mind that on average the moral quality of people do not differ much from country to country.

Why do people speak of great men in terms of nationality? Great Germans, great Englishmen? Goethe always protested against being called a German poet. Great men are simply men and are not to be considered from the point of view of nationality, nor should the environment in which they were brought up be taken into account.

Race is a fraud. All modern people are a conglomeration of so many ethnic mixtures that no pure race remains.

The true value of a human being is determined primarily by the measure and sense in which he has attained liberation from the self.

The minority, presently the ruling class, has the school and the press, and usually the church as well, under its thumb. This enables it to organize and sway the emotions of the masses and use them as its tool.

In my opinion, uniformity in population would not be desirable, even if it were attainable.

We have to do the best we are capable of. This is our sacred duty.

The only road to true human greatness: the road through suffering.

Man is, at one and the same time, a solitary being and a social being. As a solitary being, he attempts to protect his own existence and the existence of those who are closest to him, to satisfy his personal desires and to develop his innate abilities. As a social being, he seeks to gain the recognition and affection of his fellow human being, to share in their pleasures, comfort them in their sorrows, and to improve their conditions in life.

You must be aware that most men (and not only a few women) are by nature not monogamous. This nature makes itself even more forceful when tradition and circumstance stand in an individual's way.

### **Act 5 Judaism**

[Einstein did receive private religious instruction in Judaism at home and at first embraced it intensely, only to reject it decisively by the age of twelve as his interest in science became stronger. He then declared himself "without religious affiliation."

I get most of my joy from the emergence of the Jewish state in Palestine.

I have great confidence in a positive development for a Jewish state and am glad that there will be a little patch of Earth on which our brethren are not considered aliens.

The Israelis should have chosen English as their language instead of Hebrew. That would have been much better, but they were too fanatical.

The most important aspect of our [Israel's] policy must be our ever present, manifest desire to institute complete equality for the Arab citizen's living in our midst.

If I were to be president, sometimes I would have to say to the Israeli people things they would not like to hear.

I have warm sympathy for the affairs of the new colony in Palestine and especially for the yet-to-be-founded university. I shall gladly do everything in my power for it.

I know of no public event that has given me such pleasure as the proposal to establish a Hebrew University in Jerusalem.

I am neither a German citizen, nor is there anything in me that can be described as a "Jewish faith." However, I am happy to be a member of the Jewish people, even though I do not regard them as the Chosen People.

Where dull-witted clansmen of our tribe were praying aloud, their faces turned to the wall, their bodies swaying to and fro. A pathetic site of men with a past but without a future.

I am a determinist. As such, I do not believe in Free Will. The Jews believe in Free Will.

(Mozart's Sonata)

### **Act 6 On Human Life**

The life of the individual has meaning only insofar as it aids in making the life of every living thing nobler and more beautiful. Life is sacred, that is to say, it is the supreme value, to which all other values are subordinate.

A woman should be able to choose to have an abortion up to a certain point in the pregnancy.

I am convinced that some political and social activities and practices of the Catholic organizations are detrimental and even dangerous for the community as a whole, here and everywhere. I mention here only the fight against birth control at a time when overpopulation in various countries has become a serious threat to the health of people and a grave obstacle to any attempt to organize peace on the planet.

Homosexuality should not be punishable except to protect children.

Regarding sex education: no secrets!

Only a life lived for others is a life worthwhile.

I have reached the conviction that the abolition of the death penalty is desirable.

One should not forget that wealth has its obligations.

If I were not a physicist, I would probably be a musician. I often think of music. I have daydreams in music. I see my life in terms of music....I get most joy in life out of my violin.

I took violin lessons from age 6 to 124, but had no luck with my teacher, for whom music did not transcend mechanical practicing. I really only began to learn only when I was about 13 years old, mainly after I had fallen in love with Mozart's sonatas.

Mozart's music is so pure and beautiful that I see it as a reflection of the inner beauty of the universe.

### **Act 7On Pacifism**

Einstein was a pacifist from his youth until 1933, when Hitler forced his hand on the issue ...From 1945 until his death in 1955, he spoke in favour of a world government as a moral imperative and in support of the control of nuclear weapons.

No person has the right to call himself a Christian or a Jew so long as he is prepared to engage in systemic murder at the command of an authority, or allow himself to be used in any way in the service of war or the preparation for it.

That a man can take pleasure in marching in formation to the strains of a band is enough to make me despise him.

I believe the most important mission of the state is to protect the individual and make it possible for him to develop into a creative personality.

I am not only a pacivist, but a militant pacivist....Is it not better for a man to die for a cause in which he believes, such as peace, than to suffer for a cause in which he does not believe, such as war?

Peace cannot be kept by force. It can only be achieved by understanding.

It is my belief that the problem of bringing peace to the world on a supranational basis will be solved only by employing Gandhi's method on a larger scale.

The more a country makes military weapons, the more insecure it becomes: if you have weapons, you'll be a target for attack.

While I am a convinced pacifist, there are circumstances in which I believe the use of force is appropriate- namely, in the face of an enemy unconditionally bent on destroying me and my people.

[The likelihood of transforming matter into energy] is something akin to shooting birds in the dark in a country where there are only a few birds.

Organized power can be opposed only by organized power. Much as I regret this, there is no other way.

I do not believe that civilization will be wiped out in a war fought with the atomic bomb. Perhaps two-thirds of the people on Earth will be killed, but enough men capable of thinking, and enough books, would be left to start out again, and civilization would be restored.

I do not consider myself to be the father of the release of atomic energy. My part in it was quite indirect. I did not, in fact, foresee that it would be released in my lifetime. I believe only that it was theoretically possible. It became practical only through the accidental discovery of a chain reaction, and this was not something I could have predicted.

I am not saying that the US should not manufacture and stockpile the bomb, for I believe it must do so; it must be able to deter another nation from making an atomic attack.

Had I known that the Germans would not succeed in producing an atomic bomb, I never would have lifted a finger.

As long as there is man, there will be war.

Although the progress achieved by physicists may lead to ways of applying it in a technical and military way that might involve extreme dangers, the responsibility lies with those who are using the means and not with those who lead in the progress toward knowledge—that is, with the politicians, not with the scientists.

I made the greatest mistake in my life—when I signed that letter to President Roosevelt recommending that atom bombs be made; but there was some justification—the danger that the Germans would make them!

There is no other salvation for civilization and even for the human race than I the creation of a world government, with the security of nations founded upon law. As long as there are sovereign states with their separate armaments and armament secrets, new world wars cannot be avoided.

**When asked why people could discover atoms but not the means to control them, Einstein answered:**” That is simple my friend: because politics is more difficult than physics.

#### **Act 8 On religion(Bach)**

Einstein’s “religion” as he often explained it was an attitude of cosmic awe and wonder and a devout humility before the harmony of nature, rather than a belief of a personal God who is able to control the lives of individuals. He referred to this “belief” as “cosmic religion.” It is incompatible with the doctrines of all theistic religions in its denial of a personal God who punishes the wicked and rewards the righteous.

I want to know how God created this world. I’m not interested in this or that phenomenon, in the spectrum of this or that element. I want to know his thoughts. The rest are details.

Since our inner experiences consists of reproductions and combinations of sensory impressions, the concept of a soul without a body seems to me to be empty and devoid of meaning.

The meaning of the word “truth” varies according to whether we deal with a fact of experience, a mathematical proposition, or a scientific theory. “Religious truth” conveys nothing to me at all.

Try and penetrate with our limited means the secrets of nature and you will find that, behind all the discernible concatenations, there remains something subtle, intangible, and inexplicable. Veneration for this force beyond anything we can comprehend is my religion. To that extent I am, in point of fact, religious.

No one can read the Gospels without feeling the actual presence of Jesus. His personality pulsates in every word. No myth is filled with such life.

“I’m not an atheist. I do not know if I can define myself as a pantheist. The problem involved is too vast for our limited minds.

If one purges all subsequent additions from the original teachings of the Prophets and Christianity, especially those of the priests, one is left with a doctrine that is capable of curing all the social ills of humankind.

Science without religion is lame, religion without science is blind.

The main source of the present-day conflicts between the spheres of religion and science lies in the concept of a personal God.

I do not believe in the immortality of the individual....

Thus, I came .... to a deep religiosity, which however, reached an abrupt end at the age of twelve. Through the reading of popular scientific books, I soon reached a conviction that much of the stories of the Bible could not be true.... Suspicion against every kind of authority grew out of this experience....an attitude that has never left me.

#### **Act 9 On Relativity(Beethoven)**

Statement of the equivalence of mass and energy—energy equals mass times the speed of light squared—which opened up the atomic age, though Einstein himself had no premonition or foresight about it at the time. The original statement was: If a body emits the energy  $L$  in the form of radiation, its mass decrease by  $L/c^2$ .

What if one were to run after a ray of light?...What if one were riding on the beam?...If one were to run fast enough, would it no longer move at all?... What is the velocity of light?If in relation to something, this value does not hold in relation to something else which is itself in motion.

After ten years of reflection, such a principle resulted from a paradox upon which I had already hit at the age of sixteen: if I pursue a beam of light with velocity  $c$  (velocity of light in a vacuum), I should observe such a beam of light as an electromagnetic field at rest, though spatially oscillating...From the very beginning it appeared to me to be intuitively clear that, judged from the standpoint of such an observer, everything would have to happen according to the same laws as for an observer who, relative to earth, was at rest.

The special theory of relativity owes its origin to Maxwell's equations of the electromagnetic field. Conversely, the latter can be grasped formally in satisfactory fashion only by way of the special theory of relativity.

That the special theory of relativity is only the first step of a necessary development became completely clear to me only in my efforts to representation in the framework of this theory.

Five or six weeks elapsed between the conception of the idea for the special theory of relativity and the completion of the relevant publication.

I've completely solved the problem. My solution was to analyze the concept of time. Time cannot be absolutely defined, and there is an inseparable relation between time and signal velocity.

Thanks to my fortunate idea of introducing the relativity principle into physics, you (and others) now enormously overstate my scientific abilities, where this makes me quite uncomfortable.

I am now working exclusively on the gravitation problem....One thing is certain: never before in my life have I troubled myself over anything so much, and I have gained enormous respect for mathematics, whose more subtle parts I considered now....as pure luxury! Compared with this problem, the original theory of relativity is child's play.

One should not pursue goals that are easily achieved. One must develop an instinct for what one can just barely achieve through one's greatest efforts.

The theory is beautiful beyond comparison. However, only one colleague [David Hilbert] has really been able to understand it and [use it].

The mainspring of scientific thought is not an external goal toward which one must strive, but the pleasure of thinking.

The supreme task of the physicist is to arrive at those universal elementary laws from which the cosmos can be built up by pure deduction. There is no logical path to these laws; only intuition resting on sympathetic understanding of experience can reach them.

Dear Mother, Today I have some happy news. H A Lorentz telegraphed me that the English expeditions [led by Arthur Eddington] have really verified the deflection of light by the sun.

The truth of a theory can never be proven, for one never knows if future experience will contradict its conclusions.

**...how would Einstein reacted if his general theory of relativity had no been confirmed experimentally?** Then I would have felt sorry for the good Lord, for the theory is correct anyway.

The theory of relativity is nothing but another step in the centuries-old evolution of our science, one which preserves the relationships discovered in the past, deepening their intuition, and adding new ones.

The four men who laid the foundations of physics on which I have been able to construct my theory are Galileo, Newton, Maxwell, and Lorentz.

The good Lord is subtle, but malicious he is not.

I have second thoughts. Maybe God is malicious.

The laws of nature have never had and still do not have a preferential coordinate system.

After a certain high level of technical skill is achieved, science and art tend to coalesce in esthetics, plasticity, and form. The greatest scientists are artists as well.

It is always delightful, when a great and beautiful idea proves to be consonant with reality.

I never understood why the theory of relativity, with its concepts so far removed from practical life, should have met with such a lively, indeed passionate, reception among a broad segment of the public.

It would be possible to describe everything scientifically, but it would make no sense. It would be a description without meaning-as if you described a Beethoven symphony as a variation of wave pressure.

#### **Act 10 Princeton (Schubert)**

The only justifiable purpose of political institutions is to assume the unhindered development of the individual....This is why I consider myself to be particularly fortunate to be an American.

The separation [between Jews and Gentiles] is even more pronounced [in America] than it ever was anywhere in Western Europe, including Germany.

You are surprised, aren't you, at the contrast between my fame throughout the world...and the isolation and quiet in which I live here. I wished for this isolation all my life, and now I have finally achieved it here in Princeton.

I am content in my later years. I have kept my good humor and take neither myself nor the next person seriously.

I have always loved solitude, a trait that tends to increase with age.

I feel like an egg, of which only the shell remains-at 75 years old, one can't expect anything else. One should prepare a person for his death.

I no longer have the strong pains I had earlier, but I feel very weakened, as one can expect of such an old geezer.

Today [due to illness] I stayed in bed and have received guess like an old lady of the eighteenth century. This was fashionable in Paris at that time. But I'm not a woman, and this isn't the eighteenth century!

Brief is this existence, like a brief visit in a strange house. The path to be perused is poorly lit by a flickering consciousness whose center is the limiting and separating "I"....When a group of individuals become a "we," a harmonious whole, they have reached as high as a human can reach.

I want to go when I want. It is tasteless to prolong life artificially. I have done my share; it is time to go. I will do it elegantly.