

"God does not play dice"



(source unknown)

Einstein did once comment that "God does not play dice [with the universe]." This quotation is commonly mentioned to show that Einstein believed in the Christian God. Used this way, it is out of context; it refers to Einstein's refusal to accept the uncertainties indicated by quantum theory. Furthermore, Einstein's religious background was Jewish rather than Christian.

A better quotation showing what Einstein thought is the following: "I believe in Spinoza's God who reveals himself in the orderly harmony of what exists, not in a God who concerns himself with fates and actions of human beings."

Einstein was unable to accept Quantum Theory because of his belief in an objective, orderly reality: a reality which would not be subject to random events and which would not be dependent upon the observer. He believed that Quantum Mechanics was incomplete, and that a better theory would have no need for statistical interpretations. So far no better theory has been found and evidence suggests that it never will be.

A longer quote from Einstein appears in **Science, Philosophy, and Religion, A Symposium**, published by the Conference on Science, Philosophy, and Religion in Their Relation to the Democratic Way of Life, Inc., New York, 1941. In it he says:

The more a man is imbued with the ordered regularity of all events the firmer becomes his conviction that there is no room left by the side of this ordered regularity for causes of a different nature. For him neither the rule of human nor the rule of divine will exists as an independent cause of natural events. To be sure, the doctrine of a personal God interfering with natural events could never be refuted, in the real sense, by science, for this doctrine can always take refuge in those domains in which scientific knowledge has not yet been able to set foot.

But I am convinced that such behavior on the part of representatives of religion would not only be unworthy but also fatal. For a doctrine which is to maintain itself not in clear light but only in the dark, will of necessity lose its effect on mankind, with incalculable harm to human progress. In their struggle for the ethical good, teachers of religion must have the stature to give up the doctrine of a personal God, that is, give up that source of fear and hope which in the past placed such vast power in the hands of priests. In their labors they will have to avail themselves of those forces which are capable of cultivating the Good, the True, and the Beautiful in humanity itself. This is, to be sure, a more difficult but an incomparably more worthy task ...

Einstein has also said:

It was, of course, a lie what you read about my religious convictions, a lie which is being systematically repeated. I do not believe in a personal God and I have never denied this but have expressed it clearly. If something is in me which can be called religious then it is the unbounded admiration for the structure of the world so far as our science can reveal it.

The latter quote is from **Albert Einstein: The Human Side**, edited by Helen Dukas and Banesh Hoffman, and published by Princeton University Press. Also from the same book:

I do not believe in immortality of the individual, and I consider ethics to be an exclusively human concern with no superhuman authority behind it.

Of course, the fact that Einstein chose not to believe in Christianity does not *in itself* imply that Christianity is false.

Albert Einstein Quotations

I believe in Spinoza's God who reveals himself in the orderly harmony of what exists, not in a God who concerns himself with the fates and actions of human beings.

*-- Albert Einstein, following his wife's advice in responding to Rabbi Herbert Goldstein of the International Synagogue in New York, who had sent Einstein a cablegram bluntly demanding "Do you believe in God?" Quoted from and citation notes derived from Victor J. Stenger, *Has Science Found God?* (draft: 2001), chapter 3.*

Make everything as simple as possible but not simpler.

-- Albert Einstein (attributed: source unknown)

[O]nly if every individual strives for truth can humanity attain a happier future; the atavisms in each of us that stand in the way of a friendlier destiny can only thus be rendered ineffective.

-- *Albert Einstein, Foreward to Homer W. Smith, Man and His Gods*

Strange is our situation here on Earth. Each of us comes for a short visit, not knowing why, yet sometimes seeming to divine a purpose. From the standpoint of daily life, however, there is one thing we do know: that man is here for the sake of other men -- above all for those upon whose smiles and well-being our own happiness depends.

-- *Albert Einstein, quoted from James A. Haught, ed., 2000 Years of Disbelief, p. 241*

I cannot imagine a God who rewards and punishes the objects of his creation, whose purposes are modeled after our own -- a God, in short, who is but a reflection of human frailty. Neither can I believe that the individual survives the death of his body, although feeble souls harbor such thoughts through fear or ridiculous egotisms.

-- *Albert Einstein, obituary in New York Times, 19 April 1955, quoted from James A. Haught, "Breaking the Last Taboo" (1996)*

However we select from nature a complex [of phenomena] using the criterion of simplicity, in no case will its theoretical treatment turn out to be forever appropriate (sufficient)... I do not doubt that the day will come when [general relativity], too, will have to yield to another one, for reasons which at present we do not yet surmise. I believe that this process of deepening theory has no limits.

-- *Albert Einstein, acknowledging that all claims to knowledge are de facto subject to revision upon presentation of newer, better evidence, quoted from Victor J. Stenger, Physics and Psychics*

I do not believe in immortality of the individual, and I consider ethics to be an exclusively human concern with no superhuman authority behind it.

-- *Albert Einstein, 1954, from Albert Einstein: The Human Side, edited by Helen Dukas and Banesh Hoffman, Princeton University Press*

[Excerpt]

A man's ethical behavior should be based effectually on sympathy, education, and social ties and needs; no religious basis is necessary. Man would indeed be in a poor way if he had to be restrained by fear of punishment and hope of reward after death.

-- *Albert Einstein, "Religion and Science," New York Times Magazine, 9 November 1930*

[Passage]

It seems to me that the idea of a personal God is an anthropological concept which I cannot take seriously. I also cannot imagine some will or goal outside the human sphere.... Science has been charged with undermining morality, but the charge is unjust. A man's ethical behavior should be based effectually on sympathy, education, and social ties and needs; no religious basis is necessary. Man would indeed be in a poor way if he had to be restrained by fear of punishment and hope of reward after death.

-- *Albert Einstein, "Religion and Science," New York Times Magazine, 9 November 1930*

One strength of the Communist system ... is that it has some of the characteristics of a religion and inspires the emotions of a religion.

-- *Albert Einstein, Out Of My Later Years (1950), quoted from Laird Wilcox, ed., "The Degeneration of Belief"*

It was the experience of mystery -- even if mixed with fear -- that engendered religion.

-- *Albert Einstein (attributed: source unknown)*

Scientific research is based on the idea that everything that takes place is determined by laws of nature, and therefore this holds for the action of people. For this reason, a research scientist will hardly be inclined to believe that events could be influenced by a prayer, i.e. by a wish addressed to a Supernatural Being.

-- *Albert Einstein, 1936, responding to a child who wrote and asked if scientists pray. Source: Albert Einstein: The Human Side, Edited by Helen Dukas and Banesh Hoffmann*

I cannot conceive of a personal God who would directly influence the actions of individuals, or would directly sit in judgment on creatures of his own creation. I cannot do this in spite of the fact that mechanistic causality has, to a certain extent, been placed in doubt by modern science. [He was speaking of Quantum Mechanics and the breaking down of determinism.] My religiosity consists in a humble admiration of the infinitely superior spirit that reveals itself in the little that we, with our weak and transitory understanding, can comprehend of reality. Morality is of the highest importance -- but for us, not for God.

-- *Albert Einstein, from Albert Einstein: The Human Side, edited by Helen Dukas and Banesh Hoffman, Princeton University Press*

I cannot conceive of a God who rewards and punishes his creatures, or has a will of the kind that we experience in ourselves. Neither can I nor would I want to conceive of an individual that survives his physical death; let feeble souls, from fear or absurd egoism, cherish such thoughts. I am satisfied with the mystery of the eternity of life and with the awareness and a glimpse of the marvelous structure of the existing

world, together with the devoted striving to comprehend a portion, be it ever so tiny, of the Reason that manifests itself in nature.

-- *Albert Einstein, The World as I See It*

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 this planet.

-- *Albert Einstein, letter, 1954*

God does not play at dice with the Universe.

-- *Albert Einstein, (attributed: source unknown), to which Neils Bohr allegedly responded "Quit telling God what to do!" However, in the Bhagavad Gita, Krsna is quoted as having said: "I am the game of dice. I am the self-centered in the heart of all beings." (See our commentary on this quotation.)*

It was, of course, a lie what you read about my religious convictions, a lie which is being systematically repeated. I do not believe in a personal God and I have never denied this but have expressed it clearly. If something is in me which can be called religious then it is the unbounded admiration for the structure of the world so far as our science can reveal it.

-- *Albert Einstein, 1954, from Albert Einstein: The Human Side, edited by Helen Dukas and Banesh Hoffman, Princeton University Press*

Laws alone cannot secure freedom of expression; in order that every man present his views without penalty there must be a spirit of tolerance in the entire population.

-- Albert Einstein, *Out Of My Later Years* (1950), quoted from Laird y, ed.,
"The Degeneration of Belief"

The more a man is imbued with the ordered regularity of all events the firmer becomes his conviction that there is no room left by the side of this ordered regularity for causes of a different nature. For him neither the rule of human nor the rule of divine will exist as an independent cause of natural events. To be sure, the doctrine of a personal God interfering with the natural events could never be refuted, in the real sense, by science, for this doctrine can always take refuge in those domains in which scientific knowledge has not yet been able to set foot. But I am persuaded that such behaviour on the part of the representatives of religion would not only be unworthy but also fatal. For a doctrine which is able to maintain itself not in clear light but only in the dark, will of necessity lose its effect on mankind, with incalculable harm to human progress....

If it is one of the goals of religions to liberate mankind as far as possible from the bondage of egocentric cravings, desires, and fears, scientific reasoning can aid religion in another sense. Although it is true that it is the goal of science to discover (the) rules which permit the association and foretelling of facts, this is not its only aim. It also seeks to reduce the connections discovered to the smallest possible number of mutually independent conceptual elements. It is in this striving after the rational unification of the manifold that it encounters its greatest successes, even though it is precisely this attempt which causes it to run the greatest risk of falling a prey to illusion. But whoever has undergone the intense experience of successful advances made in this domain, is moved by the profound reverence for the rationality made manifest in existence. By way of the understanding he achieves a far reaching emancipation from the shackles of personal hopes and desires, and thereby attains that humble attitude of mind toward the grandeur of reason, incarnate in existence, and which, in its profoundest depths, is inaccessible to man. This attitude, however, appears to me to be religious in the highest sense of the word. And so it seems to me that science not only purifies the religious impulse of the dross of its anthropomorphism but also contributes to a religious spiritualisation of our understanding of life.

-- Albert Einstein, Science, Philosophy, and Religion, A Symposium, published by the Conference on Science, Philosophy and Religion in Their Relation to the Democratic Way of Life, Inc., New York, 1941

The mystical trend of our time, which shows itself particularly in the rampant growth of the so-called Theosophy and Spiritualism, is for me no more than a symptom of weakness and confusion. Since our inner experiences consist of reproductions, and combinations of sensory impressions, the concept of a soul without a body seem to me to be empty and devoid of meaning.

The religion of the future will be a cosmic religion. The religion which based on experience, which refuses dogmatic. If there's any religion that would cope the scientific needs it will be Buddhism....

If people are good only because they fear punishment, and hope for reward, then we are a sorry lot indeed.

The further the spiritual evolution of mankind advances, the more certain it seems to me that the path to genuine religiosity does not lie through the fear of life, and the fear of death, and blind faith, but through striving after rational knowledge.

Immortality? There are two kinds. The first lives in the imagination of the people, and is thus an illusion. There is a relative immortality which may conserve the memory of an individual for some generations. But there is only one true immortality, on a cosmic scale, and that is the immortality of the cosmos itself. There is no other.

-- Albert Einstein, quoted in Madalyn Murray O'Hair, All the Questions You Ever Wanted to Ask American Atheists (1982) vol. ii., p. 29

The minority, the ruling class at present, has the schools and press, usually the Church as well, under its thumb. This enables it to organize and sway the emotions of the masses, and make its tool of them.

-- Albert Einstein, letter to Sigmund Freud (30 July 1932) ††

[Excerpt]

Great spirits have always encountered violent opposition from mediocre minds.

-- Albert Einstein, quoted from the various poster-portraits of Einstein that have graced Cliff Walker's wall for almost two decades, this being Cliff's motto and all-time favorite quip

[Passage]

Great spirits have always encountered violent opposition from mediocre minds. The latter cannot understand it when a man does not thoughtlessly submit to hereditary prejudices but honestly and courageously uses his intelligence.

-- Albert Einstein, quoted in part from the various poster-portraits of Einstein that have graced Cliff Walker's wall for almost two decades

One thing I have learned in a long life: that all our science, measured against reality, is primitive and childlike -- and yet it is the most precious thing we have.

-- Albert Einstein, echoing Robert Green Ingersoll ("I admit that reason is a small and feeble flame, a flickering torch by stumblers carried in the star-less night, -- blown and flared by passion's storm, -- and yet, it is the only light. Extinguish that, and nought remains." from the Field-Ingersoll Debate), quoted from PhysLink.com ††

Stenger: To Einstein, 'God' is 'Nature'

"Both deism and traditional Judeo-Christian-Islamic theism must also be contrasted with pantheism, the notion attributed to Baruch Spinoza (d. 1677) that the deity is associated with the order of nature or the universe itself. This also crudely summarizes the Hindu view and that of many indigenous religions around the world. When modern scientists such as Einstein and Stephen Hawking mention 'God' in their writings, this is what they seem to mean: that God is Nature."

-- Victor J. Stenger, *Has Science Found God?* (2001), chapter 3

Parts of this collection were assembled with the assistance of Prof. Arnold Lesikar.

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