

## How we were created?

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Don't we feel comfortable when our minds are free of stress? YES. The mind feels weightless and light when there is no force, no pressure, and no stress.

Events disrupt our minds and we suddenly start to feel heavy. We may conclude that the interaction of some events with an empty mind field causes the heaviness.

Physicists always talk about fields, such as the electromagnetic field. Have you ever seen the magnetic field? NO. But you saw the effect. Does it have a mass? No, but a compass can swing due to the magnetic field. The entire universe has this field; it does not cause anything until it interacts with something like an object (magnetic object). Thus, conceptually it is power, energy and so forth. Please don't be alarmed when particle physicist says gluon field, Higgs field, and their fluctuation.

Every religion agrees with the statement – 'God is the Ultimate Energy'. Ancient Sanskrit language refers to 'Srut', which means knowledge passed down from listening, then Veda, a collection of books of knowledge called 'smrti' (tradition, values). All these give a revelation of the "cosmic truth", of creation from nothingness. Today we will try to understand this idea from the angle of science.

Obviously, we were created from nothing. Ours crave of knowledge drove us today to quantum (micro) science based on the idea from many philosophers and scientists from ancient Greece, India, China, Islamic scholars, finally Newton and Einstein just to name a few. As we try to picture the fundamental particles we can go down to elements, molecules, atom, electron, and nucleus (proton and neutron).

Physicists armed with large complex collider to smash the known smallest particles to find its constituents. Atom is the building block of everything. Atom is primarily empty space, 99.9999 % of the space is empty. By smashing atom, physicists found that atom consists of subatomic particles namely proton, neutron, and electron. Electron is a fundamental particle. A fundamental particle can't be smashed further. Proton and neutron are made up of fundamental particles called quark. Quark had been tested by smashing the nucleus using a powerful collider.

The test result indicates that proton consists of "2 up quark and 1 down quark". Neutron consists of "2 down and 1 up quark". They are interacting with gluon (massless fundamental particles) and tightly bound by the strong force to form a nucleus. Interaction with other force fields such as weak force and electromagnetic field initiates the formation of atom, elements and eventually us.

What is nothingness? Human beings are looking to nature for help and scientists, theorists and philosophers spent their whole life rationalizing it. Last 200 years all branches of science and physics collectively looking for fundamental particles and true nothingness.

An atom is a primarily empty space, 99.9999% space is empty. Empty space is not truly empty. Empty space is full of quark and gluon field fluctuation. Interactions of these fields give rise to mass from a massless particle. QFT (Quantum Field Theory) tries to explain the vacuum fluctuation of quark and gluon but the challenge remains.

Theoretical physicists fervently look into the quarks and gluons interaction. This theory is named as quantum chromodynamics (QCD). They started to believe 'quark is kind of mass' and 'gluon is a kind of force field'. When God created quark, he made sure nobody will be able to separate from the quark/gluons environment. This phenomenon is called "color confinement". The theory is an important part of the Standard Model of particle physics. While the lab tried to smash a proton with enormous force (energy), it was not able to split one isolated quark, instead, it created a new particle with quark and anti-quark (called meson) and original proton remained same. Meson is very short-lived; it decays into an electron and a light particle photon.

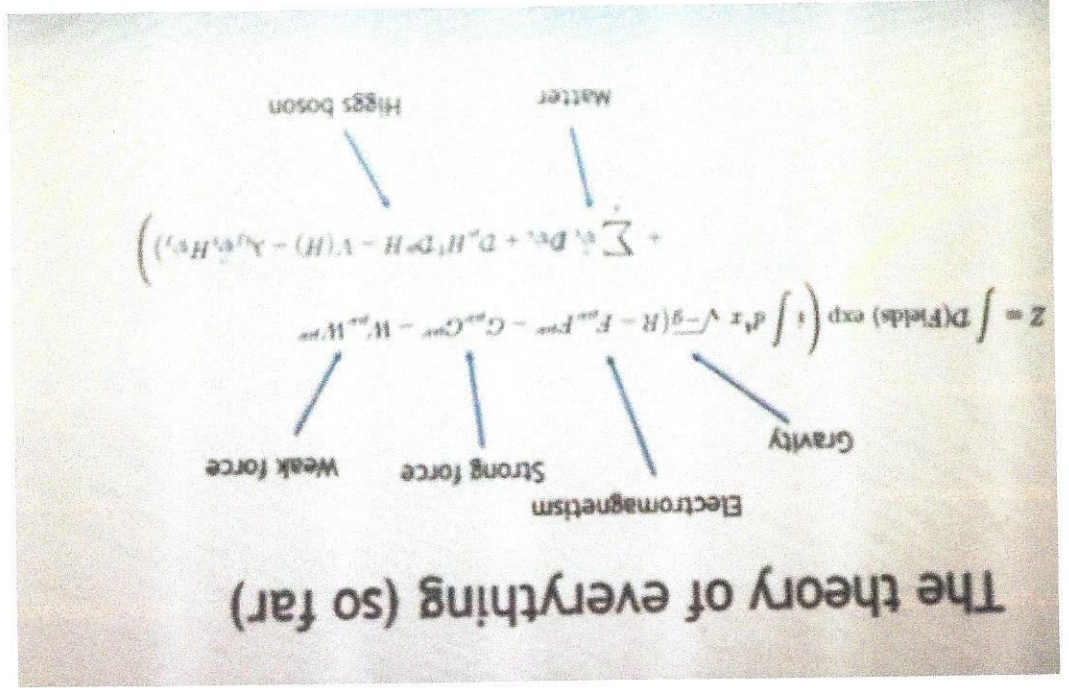
Theoretically, it is possible to annihilate a quark from empty space to vacuum. The true ultimate vacuum is full of quantum field fluctuation.

The whole universe is empty. You are made from quantum field fluctuation which creates a fundamental particle of electron, neutrino, up quark, down quark and so forth. And that is it. I could stop here. Spirit of nothingness will go this far and the rest is up to God.

For completeness of scientific understanding, we will walk through the scientific timeline until the big bang. It will be published in the coming article, please stay tuned if you are interested.

The picture depicts the fundamental particles. This is called the standard model.

Courtesy of Google



We are part of the following mathematical models which are true and real fun to me. I have zero understanding of this final equation.

	LEPTONS				QUARKS						
	electron $e^-$ 0 1/2 < 2.2 eV/c <sup>2</sup>	muon $\mu^-$ 0 1/2 < 0.17 MeV/c <sup>2</sup>	tau $\tau^-$ 0 1/2 < 1.5 MeV/c <sup>2</sup>	W boson $W^\pm$ ±1 1 80.4 GeV/c <sup>2</sup>	down $d$ -1/3 1/2 ≈ 4.8 MeV/c <sup>2</sup>	strange $s$ -1/3 1/2 ≈ 95 MeV/c <sup>2</sup>	bottom $b$ -1/3 1/2 ≈ 4.18 GeV/c <sup>2</sup>	top $t$ 2/3 1/2 ≈ 173.07 GeV/c <sup>2</sup>	charm $c$ 2/3 1/2 ≈ 1.275 GeV/c <sup>2</sup>	gluon $g$ 0 1 0	Higgs boson $H$ 0 0 ≈ 126 GeV/c <sup>2</sup>
mass →	2.3 MeV/c <sup>2</sup>	2.3 MeV/c <sup>2</sup>	2.3 MeV/c <sup>2</sup>	2.3 MeV/c <sup>2</sup>	4.8 MeV/c <sup>2</sup>	95 MeV/c <sup>2</sup>	4.18 GeV/c <sup>2</sup>	173.07 GeV/c <sup>2</sup>	1.275 GeV/c <sup>2</sup>	0	126 GeV/c <sup>2</sup>
charge →	-1	-1	-1	0	-1/3	-1/3	-1/3	2/3	2/3	0	0
spin →	1/2	1/2	1/2	1	1/2	1/2	1/2	1/2	1/2	0	0