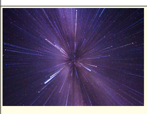
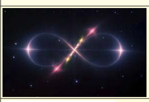
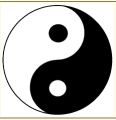
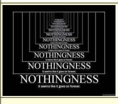
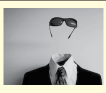
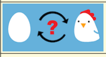
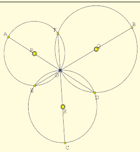
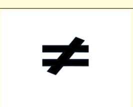
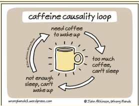
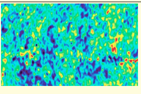
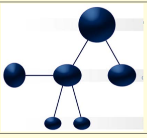
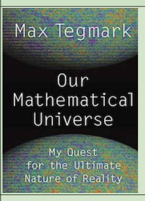
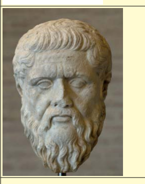
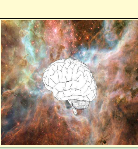
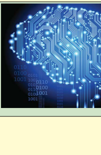
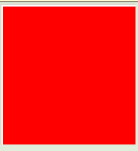
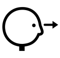
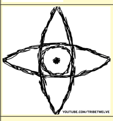
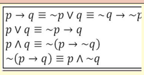
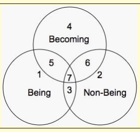
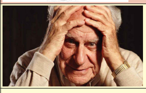
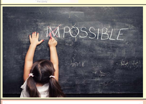
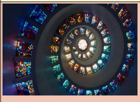
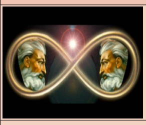
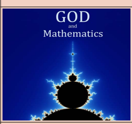
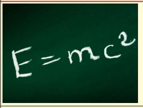
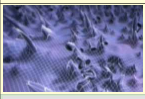
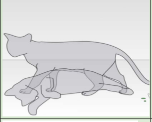
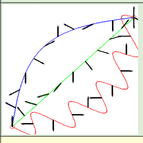
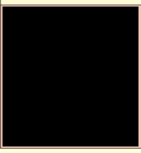
The map of ideas how the universe appeared from nothing

The main "source" of the universe existence	Subtype	Illustration	Evidences and counterarguments	Representatives	Assessment of the model
1.Nothingess. Nature is nothingess is such that a thing could pop from it into existence	1. Nothingness without any properties is **pure Negativity**, able create, not an empty void. So nothingness is **pure energy, able to fluctuate.** When negativity negates itself, it creates existence.		• Pro: Dry formula needs some kind of spark to bring life in them. But such spark itself has zero information content. • Con: if spark has no properties, how we could say that it exist • Con: non existence of such spark is conceivable • Con: It is a little bit magical, as pure negativity is able to act on itself or randomly create structures	Some physicists Dadaism	Promising and interesting theory, but some scepticism exists
	2. "Nothingness is **zero information state**", and 0 is equal to all information. No any other choice is preferable. (The same is true for Everett's QM.) So nothingness is equal to existence of everything.		Con: Still not clear, why everything should exist. Pure nothingness is imaginable without any existence. Con: If everything equally exist, than it is equal to math universe and all its problems with measure	See David Pearce answer in Quora. Standish, Theory of Nothing	
	3.**Nothingness requires existence**.		Con: looks like sophism, not a proof		
	4.Reflectivity. Nothingness denies its own existence. Repetitive negativity creates something like physical laws.	 NOTHINGNESS It seems like it goes on forever.	con: but it needs some kind of force to do so		
	5. Nothingness is **pure substance** without any properties, which fills mathematical objects. The universe is "winding nothingness".		con: what substance?		
	6. There is no laws in nothingness so there is no causal law in nothingness, so something could appear from nothingness without breaking causal law		• con: but "complete emptiness" (Null possibility) still possible • con: so why our universe is typical?		
	7. Nothingness is **just a human idea** and doesn't play any role in the universe existence		• but what plays the main role?	Link	
	8. There are **different forms of nothingness** and they are interacting. Types: Nothingness as emptiness, nothingness as negativity, and nothingness as pure observer.		• con: so it is not nothingness		
	9. The real opposition is different: not between existence and non-existence, but between certainty and uncertainty		• con: but why something exists?		
	10. Nothingness may be presented as mathematical notation **"A is not A"**, that is pure form of contradiction.		• con: but in Null possibility nothing exist and there is no contradiction		
	11. **Nothingness without any properties is pure uncertainty**, Uncertainty without uncertainty is randomness. Randomness without randomness is something like quantum vacuum (or other physical law)	1, 0, _ , rnd, law	• looks like sophism		
	12. **There is no such thing as "nothingness", but there was first moment of existence.** It has not any outer or previous causes, so it brings itself into existence.		• How?		
2.Causality. Nature of causality is such that thing may come to existence.	1. Some **sets of rules are able to create themselves out nothingness**. Here we get rid of idea of nothingness as an substance having some properties. These sets may include back causation or contradictions. May be reflectivity or internal contradictions help them.	 caffeine causality loop need coffee to wake up too much coffee, can't sleep not enough sleep, can't wake up wronghands1.wordpress.com © John Atkinson, Wrong Hands	• Why?		
	2.The nature of causality is random popping from nothingness. **Causality exists without cause.**		Con: It may be true, but what is causality? Looks like sophism without rigor definition of causality Pro: Some similarities with QM		
	3.Nothingness and causality is basically the same thing. Nothingness is pure negativity and causality is negativity applied to the current state of a thing resulting in the next stage of the thing		Evidence: QM resembles "random causality" The nature of causality here consists of constantly added randomness to already existing things. So the causality require to something to appear from nothingness (and it correlates with what we knows from QM) The difference with previous point is that nature of causality helps to create laws of QM, so QM is not primordial property of the Universe, but resemble it. Con: in MWI it is not randomness. It all depends of chosen interpretation of QM. Con: both terms poorly defined, so their relation is uncertain		
	4.Circular causality. The prima cause is not in the beginning of the universe. It is circular, where past events define future, but future defines the past.		Con: But why it exists?		
	5.Causality is indeterministic, so appearing of something from nothing is natural. "Anything that is not forbidden is allowed", Krauss		Con: Still not clear why anything exists at all Con: All math universe problems with complex things are still here	Lawrence M. Krauss. "A Universe From Nothing: Why There Is Something Rather Than Nothing."	
	6.There is no causality, but only relation between things. So there is no any problem that something exists without any cause		What type of relations? Tegmark discusses it a lot in his last article (2007)		
	7.Causality is local and negative, it only prevents some variants from existence. In its absence everything possible exists.		Still the problem of the observed simpleness of the universe is not solved		
	8.If nothing could appear from nothingness, then causality exist. But if causality doesn't exist, then something could appear. So there is something like **ontological contradiction**, which results in existence anyway		Looks like sophism		
	9. Causality = logic. Causality is logical consequences of something. It paves the way to math universe.		Con: there are different types of logic with different axioms and notations The most "primordial" form of logic exist, which is using only one notation, probably negation (Needed more reserch).		The theory seems to be one of best existing candidates, buts still some objections and exists.
	10. **Negative existence**, that is logical consequences of nothingness It is part of Logical universe, and it explains how it gets order. Causality is replaced logic here.		Proper notation: If nothing exists, than 1 doesn't exist, and if 1 doesn't exist, than 2 doesn't exist. It only works with things which has one-to-one logical relations, only in this case non-existence is equal to existence. The difference with math universe is that non-existence has the beginning, and logical consequences from it. The same is true for axioms. Shorter sets of rules "non exist" first. Infinite objects are impossible.		
3a. Existence there are thing that are not able to not exist	**11.** **0 = – 0.** **Impossibility of the non-existence** Objects, for which non-existence is impossible, or for which existence and non-existence is equal		Type of such objects: 1) **Logic** and especially "negation". Non-existence implies negation command exists 2) **Observer**. Existence may be defined through observability, which implies existence of an observer. Observer must exist. 3) **Qualia**. Qualia could be unobservable, but it can't change. It doesn't have opposite state. It would work only if all existence will be only one qualia. But it is not, or it is impossible qualia (seem below)		
3b. No existence ***Mathematical universe,***	**1.Mathematical universe. No existence is needed**. MUH - mathematical universe hypotheses 1. Only relations between mathematical objects exists, time doesn't exist. There is no beginning, and no causality, just relations. All the Universe is just one possible solution of Schroedinger equation. All other solutions of all other equation "exists" in the same way. **Subtypes:** Fractal universe	 Max Tegmark Our Mathematical Universe My Quest for the Ultimate Nature of Reality	**Counterarguments**: • More complex universe should be more probable (as there are many more variants), but we find our self in an universe, which developed from simple principles (Vilenkin) • Miracles in mathematical universe. There is no difference between normal and deviation, so many strange thing are possible (Turchin) • God should exist as he mathematically possible as biggest possible AI • The problem of now moment and of qualia • The math as we know it is human cultural construction, using Arabic digits, words and so on. Pure math is something different. • Godel theorem: most complex math structures are inconsistent, including known physical laws	Yudkowsky http://www.plt.atonia.com/papers.html http://everythingforever.com/ https://en.wikipedia.org/wiki/Mathematical_universe_hypothesis	
	2. Mathematical universe with measure		• Measure is something like measure of existence. And the description of the measure should be out of math universe. It completely kills the idea of MUH, as some form of existence is needed.	http://arxiv.org/abs/astro-ph/0407329	
	3. Computational universe. CUH. All computable mathematical structures (in Gödel's sense) exist.		• "Schmidhuber puts forward a more restricted ensemble which admits only universe representations describable by constructive mathematics, that is, computer programs. He explicitly includes universe representations describable by non-halting programs whose output bits converge after finite time, although the convergence time itself may not be predictable by a halting program, due to the undecidability of the halting problem." wiki	Schmidhuber Tegmark	
	MUH with measure, which is created by observer. Many suggest that existence of the observer could solve measure problem in MUH, but different ways for this exist, namely: anthropics, qualia-consciousness, algorithmic.				
	4. Modal realism. Existence is only relative. There is no absolute existence. There is no difference between absolutely possible thing and real thing (Kant)				
	5. **Platonia**. If possible mathematical ideas exist, when also other possible ideas and their relations exist. (For example, "The whole is bigger than part" is true even if nothing exists.) It includes logic ideas, virtual computers, philosophical ideas.				
	6. Semantic platonia. In it all ideas are real, including ideas of God, existence and Good.				
	7. Boltzmann brains inside mathematical medium. Imagine that only number Pi exists. It is infinite, and include descriptions of all possible states of mind. Random Boltzmann brains which think that they are not random (and thet are 50 per cent of all BB)				
	8. **Boltzmann AI** (which is Turing algorithm in math universe) - random AI which creates random simulation. Results in more orderly (but ultimately meaningless) experiences. It helps to overcome randomness of BB and hyper complexity of math universe.				
	9. **Existence is just another type of math object**, which is added to "dry formulas", for example like intersection of two sets. "Math-existence" could very simple, like "spark", or complex like "rainbow of qualia".		Many interesting math objects results from interaction between two simple objects (???), like graphics		
	10. **Laws of math really exist,** not math itself. Not math is real, but laws, which creates it. **That is logic.**				
	11. Infinite stack of possible multilevel simulations. **Finite stack:** The extremely complex possible AI "exists" with random value function, which simulate another world with another AI and infinitely many times until it simulates me. It results in the fact that initial randomness is inflated and we see almost orderly world. But for any AI is possible another AI which is simulating the first one. **Infinite stack**: For any possible Turing machine is possible another Turing machine, which is simulating the first one. **Web of simulations:** And it is not a linear stack, but infinitely complex web, as the "same me" could be simulated by different possible AIs.		Con: Could be true, but don't explain why anything exists at all	Denis Rysev, personal communication	
3c. Existence exists	1. **Pure existence** exists without any cause by definition				
	2. Existence really exists only if observable. So only experiences are real. That is qualia.		Con: Here we explain one unknown thing with another unknown Pro: we can't define existence without possible experience		
	3.If nothing exists, it will be **even more contradictory.**		Really?		
	4. Pure **possible observer-moments** without any medium as math objects		Con: It is not math as we know it, so we overstretch math idea here Pro: possible observer-moments are thinkable. Math is only analogy		
	5. The **spark of existence plays only technical role**, as all complexity and laws come from math. It is thus unobservable. It may be borrowed from nothingness and then returned (Lem).				
	6. **Strong anthropic principle**. We could observe only those worlds where illusion of existence is present. That is why we have consciousness and qualia. So we are math object, but very special math object.		Con: it help to find our world but don't explain why we exist at all		
	7. **Very strong anthropic principle. I am the cause.** The causation runs backwards, from "me now" into the past.		If I am exist, some reasons for it must be true. It creates (at least one) possible history, which consists of most plausible reasons of my existence, including evolution and big bang. The first spark is inside my consciousness (and it is pure form of attention or i am Boltzmann Brain with causal shadow)		

	8. Existence is result of logical contradiction, or some kind of infinite loop or logical paradox		Why?		
	9. Self-born. There is a class of objects which are able to bring themselves into existence. The first cause is self-born, or it is not first cause.		They should be equal to their inversion. Qualia seems to be one type of such objects, but other types are possible. Some logical conjunction are stable for inversion		
	10. **Existence is not a mystic substance, but logical consequences of some premises**. So mathematical objects exist.		But another idea is that existence results only from contradictions.		
4. Existence is only illusion. There is no objective existence, only subjective existence	1. **Only qualia exist.** Nothing exist "objectively" but subjective elements exists and interact with each other, creating illusion of reality.		If we define existence as ability to be part of experience, and if qualia is atoms of experience, than by definition qualia is substance of existence. As a result qualia can't non-exist. (If there is no experience there is no observer)	Chalmers said that any ToE must include consciousness	
	2. Qualia exists as axioms in mathematical universe. For qualia there is no difference between possible and real, so there is no problem of existence and non-existence		Qualia may be described as new type of math objects which has zero information content but different from each other. So they don't need any causes to exist as each is independent axiom. Con: we never see qualia completely independent from their meaning and each other, so it is not full description		
	3. **Only "now moment" exists** as simple non causal object. A lot of Buddhists ideas here. Only my experiences NOW actually exist. It seems that NOW consists of details and include causality and qualia and time-line and thoughts, but it is only an illusion.		It is only one big qualia, and it is able to exist without causes, as an axiom Con: It is over stretching of poorly defined qualia thing and so doesn't explain anything. Now is complex.		
	4. Only one **eternal observer exists**, and nothingness is primordial form of emptiness that is attention. So **pure form of attention exist**, but it able to be filled with qualia.		It is able to perform operation over qualia, like compare, unite. It is like set where quaia are elements Con: not clear how new qualia and other thing like movement appear inside it	Atman	
	5. Some form of **neutral monism** is true, and at the beginning lies something which is neither physical no psychical		Qualia is just one aspect of more primordial form experience, not named yet. It includes its ability to change, attention, definitiveness, connection.		
	6. Only one qualia exists but it is illusion of many		So it solves problem of how different qualia are connected and change in time. Con: No evidence, and seems overstretched		
	7. **Primordial nothingness separates** in pure observer and pure object, which results in dualism		Con: It works as poetic metaphor, but not explains how exactly it could happen		
	8. **Transcendent qualia. Impossible things** like round square, could exist as illusionary feelings. Realty is impossible, but illusion of it is possible as feeling		Con: but we don't need transcendental qualia to explain existence of the universe	SEP on it	
	9. **Consciousness oscillate between pure nothingness and everything,** and NOW moment is somewhere in between		Pure observer with zero experiences is equal to absolute observer who has all possible experiences. (Atman) Con: People had described such experiences (here), but others claim that it could be partial seizure		
5. Logic is different. In fact, it is laws of our logic that prevents existence of something from nothing, but our logic may be not applicable here. Another logic may be "true".	**Binary logic is wrong**, there is other states between existence and non-existence. **Binary logic is wrong.** There is no contradiction. **Contradiction are real** and needed for existence.	 $p \to q \equiv {\sim}p \lor q \equiv {\sim}q \to {\sim}p$ $p \lor q \equiv {\sim}p \to q$ $p \land q \equiv {\sim}(p \to {\sim}q)$ ${\sim}(p \to q) \equiv p \land {\sim}q$			
	Hegel type logic is true, which is able to describe evolution, or becoming. It is based on triads instead of syllogism, and the first triade is "nothing, being, becoming". Wiki	 4 Becoming 5 6 1 7 2 Being 3 Non-Being			
	No type of logic is true. There is no any logical connections between anything.				
	Some other type of logic is true. Wiki				
	Logic can't be true or false. Truth exists only inside given type of logic. So any ideas about existence of the universe can't be true or false per se.				
	A thought that "Nothing exists" implies existence of a mind and an observer, so it is internally contradictory. Objective logic never include mind in it, but in fact it always needs mind that thinks about logic. So we need to update our logic and include mind in it. We need **subjective logic.**				
6. Epistemic problems. The question is meaningless or useless, or intractable by any mind.	1 **Meaningless and useless** question. The answer has zero practical utility		But what if AI conclude that it doesn't exist and terminate itself?	Positivism	
	2. **Unfalsifiable and untestable.** There is no way to check any answer. All answers are equally probable, as we will never get ultimate prove.		There is ways to check	Popper	
	3. W**e can't know it from inside the universe:** We can't get any information from the beginning, as there was not information and no channels to send it.		But we could guess	Physics	
	4. We should not dare to ask.		But we will	Some Christians	
	5. The answer in i**ncomprehensible** for human mind and it is not possible to express it in human language. There is no answer as it is not information.		But the universe seems to be more or less describable by math	Kant	
	6. Any attempts to learn it result in **aporia**, so metaphysical knowledge is impossible.		Contradiction of aporia may signal us some information about ontological contradiction	Kant	
	7. The problem is created by **human language** which is not applicable to such situations. Terms "nothingness" and "existence" are only relative and meaningless in absolute form.	concept logic abstract intelligence rational science success education human solution www.shutterstock.com · 208801678	But we could invent other terms	Positivism	
	8. The question is either results in **tautological knowledge**, or assumes existence of something before beginning				
	9. The nature of reality may be learned but **can't be expressed in words. (Revelation via meditation)**			Zen	
	10. Origin of the universe are **transcendental**, that is it lies beyond what we could know			Some Christian authors	
	11. **We are not cleaver enough** to understand but future AI will know				
	12. We are using **wrong field of knowledge or way of attainment**. Philosophy, physics, logic can't answer thus question. May be we should use Gusserlian phenomenology.			Husserl	
	13. The fact that we know about the universe existence **empirically is enough**. We can't ask the same question two times.				
7. God exists and created everything.	1.God was so powerful that he created himself out of nothingness		*Still not explained the question of his existence in any meaningful way*		
	2. He was **eternally**				
	3. **He is possible AI** who gets existence through mathematical universe.				
	4. If semantic Platonia is tue, the **idea of God is equal to God**				
	5. The idea that causality flows from simple things to more complex is false. In fact it flows backwards. So the **God is in the future, and it is future AI.** Time arrow is in fact run backwards. Hegel's idea of evolving God.				
	6. **It is simpler (for some) to prove existence of God**, than to prove appearing of something from nothing. Any prove of God's existence explain existence of the universe. Many different proves attempt was made, including the one by Godel		Con: It a human is able to prove the existence of God, than it is not a god, but just a technical term	Godel	
8. The "eternal matter" exists	1. Matter exists eternally.		Marx, 19th century physics. It doesn't explain anything.		
	2. Modern view is that most simple set of **physical laws exist** (calibrating fields) existed before causality and time arrow. (Hawking). Asking more is unscientific.		Different versions of physicalism postulate: or existence of some substance (energy, space, time-foam), or existence of physical laws. The last version is closer to mathematical universe.		
	3. Some think that **QM allows appearing of first space-time bubble out of nothingness**. One explanation for it may be: The physical laws exist in the sphere of ideal, but they define existence of something actual. The laws are possible, but the object is actual.				
9. Superposition of interpretations	**Only "me-now" is real**, and any theory of my appearance are true in some extent. These theories exist in some form of superposition, which prevent me from choosing the only one theory. So I get contradicting evidences on different theories.				
	A**ll paths to "now" are true in math world.** Any math object could appear in many logical ways. (Even QM allows many past histories). The object which has most logical ways to it is more probable and ontologically stable. Any object has one path to simplest object, which look like his history.		Lets look on a number, 167. It could result from additions the series of natural numbers. It could be an axiom.		
	Flux-universe. I am the most stable trajectory in the space of all possible minds.				
10. Nothing in fact exists.	**Nothing really really exist** in fact. The most absurd conclusion. This text doesn't exist.			Buddhism in some Interpretations Con: But the statement "nothing exist" is exist and must be true, or it is self denying	