

Our Universe is not The Universe

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Our visible universe's origins are generally traced back to a singularity's Big Bang expansion some 13.8 billion Earth years ago. Any such universal point of origin leads to two questions: What sort of universe was around before that expansion, and what follows thereafter? This essay examines implications of various pre-BB and post-BB scenarios within the increasingly evident four-dimensional (4-D) multiverse, the real Universe.¹

Eight Basic Ideas

Here are eight basic ideas in brief form. I strongly recommend that for additional clarity you read some footnoted links:

First, the idea of a steady-state world (and universe) has been around long before the Big Bang model emerged in the 20th century. In its cyclical form, this traditional idea is prehistoric. The "steady state" model for all the universal substance that we apprehend is still viable, but only within the *real* Universe, the multiverse, of which our local visible universe is just a member.²

Second, the idea that our big bang emerged from a point-like singularity follows mathematically from Einsteinian General Relativity (GR), and it was made famous by Penrose and Hawking

¹ <https://www.wired.co.uk/article/how-will-universe-end>

² <http://astronomy-links.net/Antimatter.pdf>

decades ago. A competing model of quantum mechanical push-backs has led cosmologists to move from a pure singularity point of zero dimensions toward a very small core singularity of positive dimensions. Our pre-BB quantum core had a rapid phase shift when it got so compressed that matter was instantaneously converted into hot, hyperluminal plasma energy (which later cooled enough to reconstitute itself into energy/matter).³

Third, the GR model for gravity, which is confined to our local universe and by an insufficient model for vacuum light speed, is elegant but causally wrong. However, it is congruent in some dimensions with actual push/shadow gravity, and tracks with some Coulombic electromagnetic force fields. As a corollary, Special Relativity partially survives as a frame phenomenon when we understand just how light accelerates to reach its "c" speed in a vacuum.⁴

Fourth, although Dark Matter *is* real, but not mysteriously exotic – Dark Energy, inspired by Einstein's lambda fudge factor, *is not* independently real. What appears to us as accelerating Dark Energy is a manifestation of multiversal push/shadow gravity where approaching, juxtaposed universes interact.⁵

Fifth, the famous "Hubble Constant"⁶ – describing accelerating expansion of our visible universe as distance increases – is not an absolute law, but a local-universe correlation with what is really going on from our frame of reference, through push/shadow gravity *net forces*, as our local universe's expanding mass interacts with increasingly proximal bubble-universe masses. Gravity boundaries between and among multiple adjacent bubble universes all have differently accelerating versions of our local Hubble Constant.

³ <http://astronomy-links.net/LightSpeed.pdf>

⁴ <http://astronomy-links.net/correlation.and.causation.pdf>

⁵ <http://astronomy-links.net/Solar.Corona.pdf>

⁶ <http://hyperphysics.phy-astr.gsu.edu/hbase/Astro/hubble.html#c1>

Sixth, there is an omnidirectional, equipotent *flow* of yin/yang particles and associated sub-Planck elements within and among all bubble universes in the multiverse. This “push” element is partially blocked by local shadowing masses to provide directional net “gravity.”⁷ Yin-yang particulate push units are not at all the same as discredited billiard-ball LeSagian particles. Therefore, push/shadow gravity is correct only in its modern causative form.

Seventh, there is a “quantum sea” residing within *all* areas of the multiverse. This sea is also composed of yin/yang elements that are locally situated, not zipping through at near luminal speeds. My concept of individual quanta is somewhat similar to Einstein’s original idea, but also significantly different.⁸

For example, galactic waves (as measured by the great LIGO experiment) are not wobbling, sheet-like GR branes. These waves are real De Broglie-Bohm, yin/yang pilot waves for photons within the correct formulation of the quantum sea, and without those weird dimensional membrane branes. (Real Bohmian pilot waves for photons are not nearly equivalent to wave-associated, classical oil droplets manipulated in laboratories.)⁹

Eighth, the “Second Law of Thermodynamics” falls into question within the multiversal sea; and this dimensional issue leads to a critique of all terminal models for our visible universe, which is discussed below:

Rip, Crunch, Freeze, or...

There are *four* mathematical possibilities for what happens after a local “universal” BB eruptive expansion:

⁷ <http://astronomy-links.net/Evidence.for.Multiverse.pdf>

⁸ https://en.wikipedia.org/wiki/Quantum_foam

⁹ <http://astronomy-links.net/LIGO.and.GR.pdf>

Possibility One: A local post-BB universal bubble just keeps on accelerating from vacuum energy – until the increasing force of Dark Energy rips apart even atoms, and all descends into ever-expanding chaotic entropy. This truly is the dark model for our future, but very distant in human time, when no humans or the Earth itself will exist. This model is known as the **Big Rip**, as all negentropic (ordered) matter and energy becomes entropic (chaotic). In this way the total amount of energy is still preserved, but there is no ordered energy available for work.¹⁰

If space is infinitely beyond, there soon becomes an ethereal virtual nothingness that raises the question of how so much order got compressed into a BB “singularity” ball in the first place.¹¹ You can’t gather a lot of something from entropic nothing, and that includes the quantum vision of quanta popping out of a highly ethereal and random energy soup. If there is no effective soup (due to extreme dilution), there can be few new negentropic quanta. The net result is the same: the dark option.

We could be tempted here to introduce creative divinity into any dark universe option. If so, the perennial question remains: How and when did divinity emerge from pre-existing nothingness to perfectly create all that went into the BB in the first place? Religious models say God is defined as being mysteriously above Being. Whereas this divine idea could be correct, its details are also independently unverifiable, which is partly why there are so many competing religions.¹²

Possibility Two: The **Big Crunch** model is similar to the Big Rip. In this scenario, also out pops the baby universe, but its GR gravity slopes backward to where everything in great time returns for a new Big Bang.¹³

¹⁰ <http://astronomy-links.net/Universe.universes.pdf>

¹¹ https://map.gsfc.nasa.gov/universe/uni_shape.html

¹² <http://astronomy-links.net/Religion.and.Math.pdf>

¹³ <https://science.howstuffworks.com/dictionary/astronomy-terms/big-crunch3.htm>

For this Big Crunch idea to smoothly synchronize, all returning *spherical* universe elements must return to the same place at exactly the same time for a “perfect” new big bang. This scenario is the mathematically too-elegant opposite of *ad hoc* dialectics.

A more realistic model envisions another big bang trillions of years hence emerging when a sufficiently critical mass of energy from an *aspherical* and asymmetrical post-BB universe arrives back for a crunch at one location. Whatever didn’t make it back in time helps populate the newest universe. Late arriving elements would include returning energy/matter from the original local universe, as well as elements having interpenetrated from juxtaposed bubbles.

It is likely that our own universe’s big bang was the end result of such an aspherical phenomenon, as evidenced by various yin/yang elements inside our visible universe that could predate 13.8 billion Earth years.

Possibility Three: Cosmic Microwave Background data received by the WMAP satellite strongly point to a *historically* 4-D flat-universe linear expansion, as opposed to the ten-dimensional, sharply curved multiverse of M-theory.

The WMAP satellite has discovered that our universal expansion is sufficiently flat to create a *future* linear four-dimensional (3-D space and 1-D time) expansion, where going-out forces nearly balance coming-back forces.¹⁴ This balancing of expansion and contraction, also known as the eventual **Big Freeze**, could lead to a *critical density* entropic steady state over trillions of Earth years spread out toward extremely deep space.¹⁵ This cold result is similar to what happens with the Big Rip, though possibly less expansive.

¹⁴ https://map.gsfc.nasa.gov/universe/uni_shape.html

¹⁵ <http://astronomy.swin.edu.au/cosmos/C/Critical+Density>

Possibility FOUR: None of the above. This possibility has elements of the three above, but it also has the element of ongoing renewal of negentropy (order). This scenario avoids the one-way thermal death according to the proposed Second Law of Thermodynamics in nature.¹⁶

The 19th-century formulation of the Second Law involved human-scale experimental evidence from laboratories. Natural physical order seemingly degrades to stable disorder. Time looks like a one-way journey to chaotic oblivion.

However, this so-called Law does not properly deal with how natural negentropic order *preceding* the natural disorder appears in the first place. Enlarging this seeming result to a multiversal scale is more than a dimensional upgrade, it is also a dialectical upgrade that challenges the original laboratory results.

Formulations of the three options herein all require some idea of our local universe being the entire field. However, when a flat 4-D multiverse/Universe with critical density is introduced into the cosmic equation there is dialectical qualitative change, not just a quantitative change. Old stringy math ideas (however elegant) of ten dimensions, and 10^{500} math universes, remain logical tautologies.

This discussion relates to what actually may play out, or not, over trillions of years within what appears to be a flat and 4-D bubble multiverse having nearly critical density. From a very local human perspective we can laugh at all four grand scenarios as being to us meaningless. Our mammal species has more important things to consider, starting with our very imminent and insane self-extinction. Whether humans perish or persist, one of the four grand scenarios will play out anyway over many eons.

¹⁶ https://en.wikipedia.org/wiki/Second_law_of_thermodynamics

If some thing can exist infinitely forward, it could have existed infinitely before. It is logical that *elements of seeming eternity are therefore with us locally today*. These elements alone are not sufficient to prove any grand case, but interesting nevertheless.

The Second Law is related to the First Law of Thermodynamics, where total energy remains constant.¹⁷ The overall Universe can be modeled as a closed system with persistent energy.

The smallest is always within the greatest. Otherwise, what we think is the smallest is not so, and therefore not at the base of the greatest. That is why the concept of fundamental yin/yang particles at approximately 10^{-37} meters dimension is so important. We are discussing the very fundamental components of seeming eternity, each within sub-Planck dimensions. Units such as quarks and atomic nuclei are many dimensions larger.

This fruitful persistence is not what was measured when the original "proof" of the Second Law was concocted in a laboratory. This renewing persistence is also *not* what has recently been measured by quantum laboratory experimenters using classical droplets of oil for incongruent, wavy, double-slit experiments.

Yin/yang particles in all their fundamental forms transcend time and place – as individuals, bead strings, rings; and as assemblages of large numbers into macroscopic objects. Order and disorder become one, and change is never just from order to disorder, nor from disorder to order. Here is elegant timeless two-way beauty at the core of the most complex environments. A divine perspective above it all would have physics no other way.

TO SUMMARIZE, we may have had a local "big bang" 13.8 billion Earth years ago, but our local drama is an epiphenomenon within continuous and continual interactions among adjacent local universes over trillions of years, as mediated by push/shadow gravities and electromagnetism.

¹⁷ <http://astronomy-links.net/timearrow.html>

Our present universe is filled with persistent common-origin elements from past local universes within “our space.” Some dark matter, individual yin/yang particles, and perhaps many macro structures within our universal volume all pre-exist our local big bang. It only took an *asymmetrical* implosion for the primal core of sufficient mass to reach a critical mass, allowing energy-yang therein to phase shift and dominate matter-yin.

A large local portion of the previous universe had been left behind, as it never made it into the eruptive primal core in time. Indeed, there are likely remnants from many previous universes within our visible universe’s volume.

In addition to these remnants from within the space now constituting our visible universe – there is our timeless local portion of the stable multiversal quantum sea – in addition to perennial inter-universal, omnidirectional yin/yang push flows.

This vast recycling of the tiny to make the large is ordinary and routine for all juxtaposed, interacting universes within the multiverse.

Suffusing and interpenetrating all local interactions is a multiversal yin/yang quantum sea of critical density, with tiny yin/yang units having the power to phase-shift and thereby rejuvenate infinitely. I can’t think of anything more beautiful than this idea of a perpetually alive multiversal Universe.