

**Review: Laura Mersini-Houghton, *Before the Big Bang: The Origin of Our Universe From the Multiverse*, The Bodley Head, London, UK, 2022**

Pages: 216

**Lays Out Evolution's Mythical Beliefs**

A singularity, inflaton vacuum energy, invisible strings, and of course cross-talking multiverses, these are just a sample of ideas available for the materialist to banish a hated Creator.

The further one reads, the more evident the assumptions and scientifically untestable nature of the multiverse idea are. Beginning ad hoc entropy states and high energies, and our universe colliding with others causing fractures (none have been observed) are preposterous.

There is little real science, for this is a work of science *fiction*. E,g:

-“Whenever we look far a way at distant stars, we are looking back in time.” [p29]. False; we observe only *distance*; it is impossible to see time.

-“Energy cannot be created out of nothing:” [p57]. Yet she claims the cosmos simply started out *filled with high energy*.

“Cosmic inflation posits ... in the blink of an eye, our tiny primordial universe, filled with high energy, became much bigger through a gargantuan explosion. It offers a compelling story for how a tiny universe can quite naturally grow large and later brim with life.” [p14]

-Simply replaces God with: “an infinite number of such worlds and an infinite number of possible behaviours”. [p93]

“Where do we come from? The answer was: A multiverse.” [p110]

-Gives credence to the anti-science Boltzmann brain delusion:

“The Boltzmann brain paradox ... The standard model ... does indeed seem to lead to the conclusion that floating brains and all other sorts of science-fiction events ... not only exist but outnumber and overwhelm us.” [p68]

-The standard “Time is the hero of the plot” line is regurgitated by this PhD:

“If we have eternity at our disposal, then we have all the time in the world to wait for more episodes of inflation to occur and produce new bubble universes.” [p186]

The critical thinker must ask some serious questions whether he believes he is more likely to exist in a world made by God, or is a fleeting Boltzmann brain inside a Star Trek-style multiverse!

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### **Preface: My Albanian Universe (pp. xi-xxi)**

In 1991, Albanian's Communist regime collapsed. It had built hundreds of thousands of concrete bunkers to defend against the “Anglo-American” threat. They imprisoned thousands of dissidents, and punished displays of individuality.

“Cross talk” between universes is claimed to be indirectly tested via quantum entanglement.

“We are rewriting the story of our own origins.”

### **I) Is Our Universe Special? (pp. 1-15)**

Entropy counts all microstates a system can possibly have without changing its macroscopic state.

Boltzmann:  $S = k \log W$  [W: number of system microstates]

Entropy at creation must have been less than the present.

“Cosmic inflation posits ... in the blink of an eye, our tiny primordial universe, filled with high energy, became much bigger through a gargantuan explosion. It offers a compelling story for how a tiny universe can quite naturally grow large and later brim with life.” [p14]

## **II) How Did Our Universe Start? (pp. 16-33)**

Gravity is curvature.

Time stops at the singularity; there is no “before”. Space also stops; there is no “beyond”.

“Whenever we look far a way at distant stars, we are looking back in time.” [p29]

Inflaton energy is sometimes called “vacuum energy”.

In the first  $10^{-45}$ s, the universe is claimed to have expanded by  $10^{20}$ X.

## **III) A Quantum Leap (pp. 34-60)**

Each quanta with frequency  $\nu$  carries energy  $E = h\nu$  [ $h$ =Planck’s constant].

“Energy cannot be created out of nothing:” [p57]

## **IV) Fine-Tuning (pp. 61-78)**

“In the standard model of cosmology, a minuscule fraction of a second after the Big Bang ends, the universe is roughly the size of a blueberry; it has exited the initial inflationary stage.” [p62]

As wave-particle  $\lambda$ ’s expand, their energies decrease which causes whole-universe cooling.

Big Bang nucleosynthesis produced He and other beyond-H elements in the first four minutes of the universe.

“The Boltzmann brain paradox ... The standard model ... does indeed seem to lead to the conclusion that floating brains and all other sorts of

science-fiction events ... not only exist but outnumber and overwhelm us.” [p68]

Dark energy is claimed to exist and have negative pressure.

The entropy of a universe cannot ever decrease with time (i.e., go from less order to more order).

No two cycles in a bouncing universe can be equal.

## **V) Are We Alone? (pp. 79-93)**

Each quantum particle wave solution corresponds to an infant universe with its own probability.

“How to identify the winner of this cosmic lottery? Neils Bohr proposed a hypothetical independent judge who could rule in favour of only one probability wave.

Bohr’s solution was a *collapse* of the wave function.

Schrodinger’s cat was designed to highlight flaws in collapse of the wave function (before being observed after the death-triggering decay event, the cat is in a superposition of alive and dead states).

There is, “an infinite number of such worlds and an infinite number of possible behaviours”. [p93]

## **VI) Eleven Dimensions (pp. 94-111)**

Each force is achieved by exchanging respective bosons; gravitons for gravitation, photons for electromagnetism, gluons for the strong nuclear force.

String theory replaces point-particles with extended 1D strings, too small to be observed. String frequency vibration determines particle mass.

M-theory holds there are an extra seven hidden dimension (the “compactification of space”).

“Where do we come from? The answer was: A multiverse.” [p110]

## **VII) First Wave (pp. 112-123)**

Only 30% of PhD graduates get jobs in academia, and even fewer make it to tenure.

The universe horizon is the farthest distance light can travel and return to us, its visible ‘edge’.

## **VIII) Into the Multiverse (pp. 124-138)**

Tiny quantum universes trying to travel through the disordered string landscape get trapped in various energy valleys. Then, they take the vacua’s energy and explode in Big Bang-style inflation.

## **IX) The Origin of Our Universe (pp. 139-169)**

Entropy is zero in a quantum world.

“Only the fittest infant universes survived.” [p149]

“The *only* virtue of having a vast landscape, or any type of multiverse ... was to increase the chances ... a fine-tuned universe like ours would be found.” [p154]

## **X) Fingerprints of Other Universes (pp. 170-182)**

“Surviving infant universes on the quantum landscape multiverse pull on our universe.” [p175]

The CMB has “cold spot” asymmetries.

In 1964, Peter Higgs predicted the “God” particle, discovered 2012 at 1TeV energy.

## **XI) Infinity and Eternity (pp. 183-191)**

Roger Penrose rose has an infinite multiverse in time rather than space.

“If we have eternity at our disposal, then we have all the time in the world to wait for more episodes of inflation to occur and produce new bubble universes.” [p186]

Tests of eternal inflation rely on collision assumptions between our universe and other bubble ones creating “fractures” in our heavens. No “fractures” have yet been observed.

**Epilogue: A Place to Dream (pp. 192-205)**