A Bleak and Meaningless Universe…Not!

Gevin Giorbran

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Abstract

Just as most physicists resisted the implications of galaxy red-shift for an expanding universe and held instead to the steady state theory for over thirty years, today physicists are ignoring the implications of an escalating expansion rate which is accelerating the universe toward an end of time at absolute zero, holding instead to the big crunch and heat death futures where disorder is thought to continually increase.

I would like to report a looming threat, a dangerous new discovery, which exposes how damaging skepticism is to modern physics and to our view of the universe. Well okay, an almost new discovery. In 1998, scientists using the Hubble space telescope discovered the expansion of the universe is not slowing as expected, but is instead accelerating [1]. Apparently an expansion that began faster than the speed of light (according to inflation) and thereafter steadily slowed for eight billion years nearly to a standstill, was reawakened nearly six billion years ago. This discovery is clearly the most important large-scale cosmological find since Hubble originally detected expansion. Yet so far physicists have been unwilling to consider conclusions as equally obvious as the big bang model derives from Hubble expansion. The flow of time has a distinct future goal. Just as time begins from an extreme; the infinitely dense singularity of the big bang, the future evolution of our universe is accelerating toward an end of time at the single opposite extreme, an absolute zero singularity. "Follow humbly into whatever abyss nature leads or you shall learn nothing" wrote Huxley.

In the last century, the majority of physicists held to the steady state theory and resisted evidence for an expanding universe for over thirty years largely because they were uncomfortable with the notion of a creation event. In similar fashion, today physicists are blatantly ignoring the implications of an escalating expansion rate, holding instead to the big crunch and heat death futures where disorder can continually increase,. Why? because if the arrow of time points directly at absolute zero, and time literally ends at zero in twenty or even a hundred billion years from now, then the evolution of the universe has a distinct future goal, even one might argue a meaningful goal. If time ends at zero, then our universe isn't moving from order to disorder as the second law of thermodynamics suggests, since zero in no way relates to disorder.

In 2003 Caldwell, Kamionkowski, and Weinberg introduced the big rip theory, describing a future escalating expansion that rips apart galaxies, stars, and atoms, with time ending at what they describe as the ultimate singularity [2]. This ultimate singularity reservedly inferred in their paper is not only an absolute zero of temperature and energy, but also mass and density, curvature and gravity, even the volume within the event horizon of space-time collapses to zero. The singularity that remains after the collapse of space-time is nothing but empty space. In other words, the same simple logic that led scientists to conclude that time traces backward to an infinitely dense singularity applies as obviously to the future, the only difference is that the future traces forward to a singularity of zero density. A universe that begins all matter and no space, ends all space and no matter. So the question physicists should be asking now is: What is an ultimate zero doing in our future?

Since the validation of the big bang model with the discovery of the microwave background radiation [3] in 1965, physicists have insisted on imaginatively projecting an ultimate zero into the past, and a host of theories attempt to explain how the universe came from nothing, otherwise known as the primordial vacuum or vacuum genesis. Of course if our universe is just a random fluctuation in a void then the universe has no meaning. Yet in the midst of these expensive and largely publicly funded efforts, physicists have ignored the real zero that has always plainly existed in the future of an expanding universe. Our increasingly dense and hot past moves us toward the top end of physics, toward infinite heat, density, and curvature. The future of an expanding universe clearly moves us oppositely down a gradient of density and heat toward the rock bottom of all physics, a seemingly empty zero universe. Physicists prefer to believe they are immune to philosophical

bias exhibited in religious cosmology, yet accelerating expansion is exposing a swing in the opposite direction. In countering and competing with religion, science has not only developed a bias against finding any evidence of inherent meaning to the universe, contrary theories have been favored and possibly even fabricated. Such bias is dramatically distorting how science today perceives the physical universe and reality in general.

The ultimate verdict of the universe's meaningfulness naturally hinges on the distant future, and today due to Boltzmann's statistical side of the second law of thermodynamics it is widely held that time generally travels from an ordered to a disordered state, because there are more possible states of disorder. In this case the universe obviously hasn't any goal we could recognize as meaningful. In standard cosmology there has been virtually no exploration given to the scenario of time ending at zero. Instead there are two competing future scenarios thoroughly explored in journals and magazines, one where the universe collapses in a big crunch, and another where the universe expands forever, with all the stars and galaxies eventually burning up their fuel; a heat death. The future is either destroyed by gravity or finally turns dark and lifeless. Both scenarios indicate the universe has no inherent purpose or goal, and is therefore ultimately meaningless.

Imagine the contrast if scientists were explaining instead that the universe is becoming increasingly complex and orderly, moving increasingly toward an extreme of perfect order and symmetry. Imagine how public interest in science would change. And yet I can sense the phobic rejection from most physicists even to the suggestion of this as a possibility. The mainstream of physicists uniformly reject any inference of a future goal to the universe, and yet there in our future rests absolute zero. The universe has been expanding toward zero ever since time began 13.7 billion years ago and is now accelerating directly at zero. The average temperature of the universe today is -454.74° Fahrenheit or -270.415° Celsius, which is only 2.73° degrees above absolute zero Kelvin. The most pronounced feature of the universe is the vast expanses of empty space. We are nearly at the very edge of the ultimate zero even today, emphasized further when we consider what we truly know of the dense and hot conditions of the big bang. Taking the smallest step backward, anyone can appreciate that time began at or very near one extreme of physical reality and time is now accelerating at the other.

Once noticed and openly acknowledged, the absence of zero in our past and the presence of zero in our future is ripe with profound questions and rather startling implications. Why is time moving, even accelerating, toward zero? Why is time moving toward one single place, toward one particular state in the whole of possibilities? How does this path toward zero influence our present? As time approaches zero, are the number of futures that are possible for our universe increasing or decreasing? Is the zero in our future influencing our present (backward causality)? Is zero the end of time for all universes? Is zero the goal of time? Is zero an attractor causing expansion to accelerate? Does time ending at zero violate the first law which states that energy is neither created nor destroyed? Why would a zero exist in our future rather than in our past? Why would something become nothing? And the biggest question of all, if zero is not a state of disorder, then is the zero in our future an ordered state? Might the second law be wrong in claiming that disorder always increases? If so, what is the nature of this kind of order in our future? How is the order of zero different than the order of our dense past?

In a recently published book, I present two new concepts which are unexpected but have a very respectable history. In the 60's the physicist David Bohm proposed there exists two kinds of order in nature, an explicate and an implicate order [4]. Einstein considered Bohm his intellectual successor, yet Bohm's original concepts were perceived by most other physicists as vague and metaphysical. In developing the concepts further, I show that the two orders Bohm recognized are plainly visible in all patterns found in nature. In fact, our universe is an evolution away from one type of order existing in extreme in our past (the dense singularity of the big bang), toward a whole other type of order that governs the future. We exist in the interplay of two opposing orders. Much of the book presents practical applications, all of which lead to the startling conclusion that the zero in our future is the most ordered state in all of nature.

The most foundational argument made in this book is that all configurations or possible states physically exist timelessly, because all are merely fragments of a physically real zero. Just as all positive and negative numbers can be summed to equal zero, the moments of time are like all the possible slices of a whole pie, they all exist within the greater balanced whole we call zero. One can sense immediately how such fractions and the whole are naturally interdependent, always conserved, and their laws self-contained. If correct, then inverse to what most people classically believe, our material universe is less than a base zero background, rather than more than a nothing. In other words, our matter universe is here because an anti-matter universe exists somewhere else, but combined the two become zero. With help from the philosopher Parmenides, in this book titled *Everything Forever: Learning to See Timelessness* [5], I explain my belief that zero is the native state of existence, meaning zero exists now, has always existed, and will always exist. I believe zero equates simply to a being or existence that has no alternative.

My most passionate argument is that the grand evolution of time, all the many worlds of quantum theory, literally all universes of the multiverse, inevitably end at zero, since zero is the universal point of balance in the space of all possible states. Our zero future is the cause of time's arrow. Zero is the cause of time itself. I further explain how an end to time at a single destination naturally governs its own past and our present, which means our entire universe is a product of backward causation governed by the most ordered state in all of nature. I also effectively explain that although entropy always increases, the statistical side of the second law is incorrectly applied to the arrow of time. In fact, just as there is one beginning for the universe, there is only one possible future end for our universe.

I could add here that for myself, accelerating expansion was an experimental confirmation of what at the time were bold predictions. I proposed a finite end to time with the universe ending at zero by expanding itself perfectly flat in three copyrighted books in 1994, 96, and 97 [6], years before accelerating expansion was discovered, and long before the big rip model was proposed. My own future scenario is similar to the big rip but considers the backward causation of zero which is unrecognized in all of today's forward causation models of the future. However, no journal will publish my papers, no top physicist will acknowledge my work. Why? Because every physicist who reviews my work immediately dismisses it as naive wishful thinking. The amount of order in the universe cannot be increasing. Time cannot end at zero. The universe cannot have a future goal of perfect order. It just isn't possible. It is just too meaningful to be true.

[1] Saul Perlmutter, *et al.*, Nature 391, 51 astro-ph/9712212 (1998); S. Perlmutter, Astrophys. J. 517, 565 astro-ph/9812133 (1999); A. G. Riess, et al., Astron. J. 116, 1009, astro-ph/9805201 (1998).

[2] Caldwell, Robert R., Kamionkowski Mark., Weinberg Nevin N., *Phantom Energy and Cosmic Doomsday*. astro-ph/0302506 (2003).

[3] Arno Penzias, Robert Wilson, *A measurement of excess Antenna Temperature at 4080Mc/s*. Astrophys. J.Lett 142 419 (1965).

[4] David Bohm, *Wholeness and the Implicate Order*, Routledge & Kegan Paul, (1980); D. Bohm, David F. Peat, *Science, Order & Creativity*. Bantam Books, (1987).

[5] Giorbran, Gevin, *Everything Forever: Learning to See Timelessness.* Enchanted Puzzle Publishing (2006).

[6] Giorbran, Gevin, *The Superstructure of an Infinite Universe* (1994); *At the Shore of an Infinite Ocean* (1996); *Exploring a Many Worlds Universe* (1997).