

[Essay]

Human Life and Deep Time

Ben G. Yacobi*

Abstract

Human life is confined within the narrow limits of time and space. This relatively brief existence shapes human perception of life against the unknowability of both the ultimate beginning and the ultimate end of time, and it provides the context for thoughts and aspirations within the limited perspective bound by immeasurable eternities of past and future. To understand this human condition, it is essential to perceive life in the broader perspective of deep time in which all things fade into oblivion. This may lead humanity to a greater appreciation of the present and to a more humble view of its place in the universe.

Emerging randomly in time and space, somewhere on planet Earth, human life is accompanied by gene mutations and a series of random events. In a fleeting existence between light and darkness, the individual is an infinitesimal element amid the chaos of the world driven by the creation and destruction processes at all scales from elementary particles to celestial objects. The emergence of life appears to be an accident in a universe that is governed by the law of entropy and is indifferent to human existence.

Human beings are confined in time. They emerge in the world within a specific era and context which they cannot control. Abandoned on the planet in the runaway universe, the individual is in constant tension between hope and despair. This life is composed of moments that are determined by a series of probabilities and a myriad of possible outcomes. Much of human awareness relates to the recollection of these random moments, with elusive present moments slipping into the past and future moments unravelling into uncertainty. The sense of the infinite can be found in the present moment in which immeasurable past and future converge in the eternal continuity of the changing “now.” This dynamic of life creates the illusion of time flow and often results in repeated cycles of expectations and disappointments. For human life, these relate to the future within several days or several years or several decades.

* B.G. Yacobi is the author or co-author of several books and numerous articles on physics, as well as of a number of essays on philosophy. Email: b.yacobi[a]utoronto.ca.

In this context, the dilemma is defining the notions of elusive “present” and “now” and “moment.” As such, one cannot capture the durationless instant of the present since human senses are not fast enough to perceive it, as it takes time for the brain to process information. Thoughts in the “present” typically relate to the memories of the past or anticipations of the future, and thus humans are more preoccupied with their past and future than with the present. Although one tries to shape some permanence from the present, it can never be reached, except in photographs that freeze moments in time.

In the noise of thoughts, there is so little time to understand life in which individuals own nothing, not even atoms in biological cells. Much of life is spent on the mundane, and at the end of this relatively brief existence, one disappears in the unknown where there is neither past nor future.

Perplexed by thoughts of finite existence, one struggles to survive and find the meaning of life. But the world is too complex for humans to truly understand, as there are inherent limits to both human cognition and knowledge. This experience of life is accompanied by various concepts and illusions perceived as reality. One of the persistent illusions in life is that of having choices. But human beings do not choose to be born, or do not choose their genes, or do not choose their thoughts and dreams. The only choice is to let go of the ego and of the endless desires and of immortality.

Humans live mostly in the near future that defines and shapes them. This life is driven by survival and short term needs which determine the perceptions of life and of the world and necessitate making various practical decisions that distract from the big questions. Thus, human beings dwell mostly within shallow time. This must be contrasted with the notion of deep time that refers to the exceedingly long time scale, from millions to billions of years, which is beyond human experience or perception.

The human awareness and understanding of reality are limited, and whatever is confined within those narrow limits is typically considered to be the limits of the world. Much of human understanding of the world relates only to the portion of reality that can be accessed by instruments and analyzed using tentative concepts and theories. During most of the daily life, individuals remain within these limits, and only through imagination one can transcend them to visualize a greater picture of the universe. Also, during most of the living moments, the human mind dwells in the very near future in which the process of survival is ongoing. The limits of human perception of reality make immersion into the

perspective of deep time very difficult.

One of the central dichotomies or tensions of human life is the contrast between the shallow time, which dominates human thinking, and deep time that operates on the universal scale. To understand human's place in the world, it is necessary to contemplate life beyond a shallow time perspective, which is measured in days, months, and years. The answers to deep questions can only be found from the perspective of deep time. This also relates to a question, whether human life is consequential or not. The simple answer is that it appears consequential, for better or for worse, only within a shallow time frame but inconsequential in the context of deep time. In the perspective of deep time the universe will retain no memory of brief human existence. All the accomplishments and struggles and personal dramas will dissolve in oblivion.

Since human sense of reality is determined by the perception of time and space, adopting the perspective of deep time can affect human traits and behavior and influence how humans view the world and their place in it. Thus, although the ability to perceive human life from the perspective of deep time may be mystifying, it can help to diminish the negative influences of ego and associated hubris on human life. The perspective of deep time can also improve not only the awareness of the present, but also the perception of past and future.

Adopting a deep time perspective is not only enlightening about humanity's place in the universe, but it is also humbling because in the final analysis it clearly points to the fragility of human existence and to the tentative nature of everything. Recognizing the eventual oblivion is unsettling as it negates the human desire to be remembered. On the other hand, it is liberating since it replaces the human desire to be remembered with the realization of the vital importance of life in the present which is the only tangible part of existence. This realization also diminishes the emphasis in life on unimportant details and human traits such as ego and vanity.

Perceiving life from the broader perspective of deep time would be a further step in the continuous expansion of humanity's view of its place in the universe, from a small group in some corner of Earth thousands of years ago and later to larger ethnic groups and to nations and to humanity on a single planet and to intelligent life in the universe.

Due to the limited life span, most of human thinking is short term. The deep future is widely theorized by scientists and theologians. But well before reaching deep time, there are various natural and human-made threats in the near future.

These include natural disasters such as a massive asteroid colliding with the Earth resulting in global extinction, and human-made disasters such as nuclear warfare, environmental degradation, genetically engineered viruses, and artificial intelligence taking over.

Exuberant futurists suggest that if humanity survives and populates outer space, it may eventually find solutions to various challenges facing its continuous existence. These ideas might have been inspired by the analogous example in the history of humanity that populated the Earth from Africa. Such futuristic suggestions are hard to dispute as they are neither verifiable nor falsifiable. However, the fact is that humanity's survival has always been a matter of chance rather than certainty. Surviving as fragile beings in an indifferent world is very challenging, so humans will most probably eventually transform into posthumans, who transcend human limits by replacing biology with technology. This transformation can result in the end of humanity and loss of human values, but they would be better fit to survive and populate other planets. This will become increasingly vital, as ultimately intelligent life may not survive on one planet because of possible disasters. However, as it is impossible to eliminate all risk, survival will always be uncertain.

On the cosmic scale, the future of the universe may be determined by two main factors: the gravity pull that could reverse the expansion and eventually lead to the collapse of the universe back inward on itself, and more likely accelerating expansion due to the repulsive effect of the dark energy. As galaxies recede from one another with increasing speed within an expanding universe, they will no longer be visible for an arbitrary observer. Any possible colonization of the runaway universe beyond a given galaxy will become impossible since eventually all neighboring galaxies will disappear beyond the cosmic horizon. With eternal expansion, as entropy increases, eventually everything will decay resulting in the end of the universe. It is also possible that new universes will emerge, and possibly intelligent life will evolve again.

In addition to survival, human life also necessitates reconciling with the uncertainty of the future, which creates angst and anxiety as individuals strive for certainty in an uncertain world. Enter a myriad of concepts for navigating the constantly changing world. These include concepts such as hope and happiness that are human constructs that do not exist in nature. Such concepts only exist in the minds of individuals. Perhaps one of the greatest dichotomies of human life is expecting hope and happiness to also exist in nature which is indifferent to

human life and aspirations.

In an entropic universe, everything eventually comes to an end. Here enters the paradox of hope. Hope is essential for human wellbeing; but hopes are rarely fulfilled, and most of them end in disappointments in an unpredictable life. The main cause of disappointments is not events or individuals but unrealistic expectations based on vague desires and wishful thinking.

Hope is an escape from a world filled with chaos and uncertainty; it is an antidote to pain and despair, and it is a link between a chaotic mind craving certainty and a chaotic world full of uncertainty. The realization of hope, which is based on these two chaotic systems that are entangled in an uncontrolled way, is highly improbable. As human life is unpredictable, the tension is between a future that unravels according to probability laws and expectations that relate to human desires.

Human beings hope for better life, but they do not clearly know what it means, as human desires are boundless and constantly changing. With myriad variables and shifting conditions influencing every moment of life, there are hopes and desires that cannot be realized. This typically leads to disappointment followed by another expectation and so on. Such an endless cycle of hope and expectation prevents an individual to be fully in the present moment where life is truly experienced.

The dilemma of the hope and disappointment cycle can be resolved by minimizing hopes and expectations for desirable outcomes. It is essential both to hope and to transcend disappointment. Although hope is necessary in life, it is equally important to let it go. Throughout life one must not only learn and unlearn, but one must also hope and unhope.

The cycle of hope and disappointment can be compared to the myth of Sisyphus. In his essay *The Myth of Sisyphus*, Albert Camus confronts the question whether life is absurd or has meaning. The absurdity of human condition is analogous to that of Sisyphus, who according to mythology was condemned by gods to a meaningless task of pushing a boulder up a hill, only to observe it roll down all over again. In this context, what is essential for human life is not that the boulder stays on the top of the hill, but that one continues to struggle despite the futility of such an effort. Analogously it is hope that is essential in life, rather than the outcome that at best can only be partial and temporary.

An individual immersed in the deep time perspective is the ultimate

Sisyphus who embraces life and who strives to discover things and create art and find some meaning in a universe that in the end offers nothing but oblivion. This Sisyphus is not an absurd hero; he is a tragic hero.

Light from a very distant source takes such a long time to travel across space that when it reaches the observer the original source is long gone. Perhaps these words will also reach someone in the future; but in the context of deep time, neither traces of individual lives nor human creations survive. This reminds about the value of humility in life and about the futility of ego that prevents experiencing every moment with selfless awareness and appreciation.

In conclusion, human life is a relatively short and chaotic drama against the background of the immeasurable span of deep time. In this temporary drama, neither knowledge nor art can permanently change the world; they only make individual lives more bearable during the passage through life.

Living fully requires perceiving life from the perspective of deep time in which all things come to an end. The struggles to grasp the elusive present and gain some understanding of life in an indifferent universe provide the elements of human drama against the background of deep time in which these words will also fade away.