



Towards an ethics of life

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ARTICLE INFO

Article history:

Received 26 April 2016

Accepted 25 May 2016

Available online 1 June 2016

Keywords:

Life

Cosmocene

Intergenerational justice

Ethics

Continuity

Space

Terraforming

ABSTRACT

In the broad context of intergenerational justice, this paper is an effort towards developing a theory of an ethics of life. My thesis is that that continuity of life is the foundation for an ethics of life. The fundamental question associated with the ethics of life is, 'What is best for life.' Following brief discussions about life and the long-term continuity challenges life will face as the sun begins to die, three legs of a triad for an ethics of life will be proposed and explicated.

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1. Preliminary overview of a theory of an ethics of life

Life's continuity, specifically life's continuity following the death of the sun itself is the penultimate conundrum for intergenerational justice. The *ultimate* problem for intergenerational justice is the end of the universe.¹ This paper will focus on the penultimate conundrum. I propose that establishing intergenerational justice associated with life itself requires an ethics of life.

My thesis is as follows. First, that *continuity of life is the foundation for an ethics of life*. Second, that *the fundamental question for an ethics of life is, "What is best for life?"* I will then propose three legs of a triad to put a preliminary structure to an ethics of life.

Humans tend to focus on this and the next generation and not much farther into the future. I believe that intergenerational justice requires a much longer focus and that is towards the problem of the continuity of life itself. There is growing concern that as the sun expands in 7.8 billion years (or so) on its way to becoming a white dwarf that it could make life extinct on earth. We do not have any agreed-upon evidence that life exists outside of earth. Therefore, the first leg of the triad on the ethics of life is sustainability of the earth to support life—including humanity—for as long as it takes to

develop a viable, sustainable, and continuous alternative locus for life in the solar system...if that will be possible. Humanity is the only being we know of that knows this and may have the wherewithal to find alternate celestial locations for life. However, we do not know what we will find when we explore the solar system and the universe beyond, hence the need for sustainability on earth for perhaps billions of years.

The second leg of the triad of the ethics of life concerns the continuing dialog of *whether* we should introduce life to other celestial bodies or bring alien life back to earth. However, rather than use words like pristine and prophylactic that are being used as guidance for this dialog today, I will suggest we begin using the question, "What's best for life" as a guide.

The third leg of the triad of the ethics of life is where humanity situates itself with respect to the other two legs. We are the only being that understands the fate of the sun and the possibility for the extinction of life itself. The third leg of the triad asks, "How will we situate *ourselves* in an ethics of life?"

The argument for an ethics of life does require some preliminary background information about life itself. In the first section of the paper, I will explore the question of what is life, how did life begin, some possible causes of life's continuity, and humans and their impact on life.

In the second section, I will outline a basic theory of the ethics of life. I will first explain why I believe that continuity should be the foundation for an ethics of life and discuss the importance of the question, "What is best for life?" I will then briefly explicate what each of the three legs of the triad mean in the context of a theory of

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¹ If there is a multiverse, there is the possibility that life might transition to other universes. However, we do not know what this means to space-time, so I will simply maintain that the end of our universe is the ultimate challenge for life.

the ethics of life. Finally, I will summarize and discuss some of the challenges an ethics of life will face.

2. Part I discussion of life

2.1. What is life?

Edward F. Trifonov reviewed a hundred definitions of life and developed his own meta-definition, “Life is self-reproduction with variations [1]” Ernesto Di Mauro explored a similar approach, “a self-sustained chemical system capable of undergoing Darwinian evolution”, and “Any system capable of replication and mutation is alive [2].” Reproduction and mutation seem to be the basic requirements for this sort of definition of life. However, there is a question of what are the attributes of the most basic form of life?

Terrence Deacon explained that the most basic life forms on earth have the following minimum attributes, “containment in a lipid membrane, metabolic processes powered by ATP, and information intrinsically embodied in nucleic acids [3].” In other words: a lipid bag that, 1) contains some metabolizing function, and, 2) a plan. On earth the plan is DNA or RNA.

I will use Trifonov’s definition as a starting point for discussion. I will begin this discussion by extending Deacon’s argument by suggesting that life appears to have at least one other attribute and that is the need for continuity. Whether this continuity attribute is metaphysical or metabolic, I do not have any good answer. I can only suggest that life has maintained its continuity through many extinction events and as of yet has proven not to have any end state for as long as conditions warrant life’s continuity. As we will see, a very long-term issue for life is maintaining the conditions that enable the continuity of life after the death of the sun. Before discussing continuity, we will explore the question how did life begin in the first place?

2.2. How did life begin?

We do not know where life began. We believe we do know that life began on earth 3.8 billion years ago. We do not yet have agreement on how life began.

Some believe that life emerged from the chemical soup of amino acids and other chemicals in the early earth. N.C. Wickramasinghe referred to this as the “Primordial Soup Theory [4].” As Terrence Deacon pointed out we have good evidence of emergence in some chemical processes, and it is not out of the question that we might find that life is one of the processes that results from natural emergent tendencies [3].

Some have suggested that life did not begin on earth. N. C. Wickramasinghe outlined the *panspermia* argument that life began somewhere else, say Mars or Venus when these planets were more verdant worlds in their earlier existence and asteroid impact ejecta from the planets drifted through space probably in an inanimate state and landed on earth where it found conditions suitable for reanimation and multiplication [4]. This is certainly conceivable. Recall that earthly nematodes from experiments on the space shuttle Columbia survived the fiery meteoric explosion of the craft upon reentry.²

² In addition, Rummel and Billings explained, ‘Scientists have found that Earth microorganisms are tough, some able to survive in the space environment [1] as well as in extreme Earth environments such as deep-sea hydrothermal vents [2], Antarctic rocks, and regions more than three kilometers beneath the continental surface. Such extreme earth environments may have analogs on other solar system bodies—Mars, for example [5]. Rummel JD, Billings L. Issues in planetary protection: policy, protocol and implementation. Space Policy. 2004; 20:49–54.’

Panspermia theory only pushes the question of where life began to another planet or world. Following the trail of *panspermia* theory, we must ultimately return to other theories to find life’s genesis moment, e.g. emergence from natural processes or prime mover [4]. Crick and Orgel through Wickramasinghe posited that life’s migration ultimately requires some form of intelligence but this still does not commit to an original genesis for life [4].³

We must also consider theories that a prime mover created life.⁴ This could be a God or an alien from another universe who seeded our and perhaps other planets. While there are those who do not believe in evolution and suggest that humans were created fully formed by a God, many others who believe in God also accept that there is evolution and DNA mutation. Even if God had created the first earthly microbes, DNA and competition insured diversity and complexity over time. Be fruitful and multiply in such a theory does not require constant attention by the prime mover.

If prime mover, we always have to ask who or what produced the prime mover for which some theological answers suggest that the prime mover had no origin. Of course, most other explanations would require an infinite regression which is problematic in itself. William Carroll explained through Frank Wilcek, we might understand what came before the big bang theory was nothing and that something came from nothing because nothing is inherently unstable...something will eventually become [6]. The upshot of all of this is that we do not have agreement on how life began or whether it will begin again. Yet we know that life, once it began, has continued. What is it about life that has produced at least 3.8 billion years of continuity on earth?

2.3. What are some possible causes of life’s continuity?

Is it will? Arthur Schopenhauer saw will as the thing in itself, not intellect as philosophers before him had said, and that the will is “...metaphysical, indestructible, and eternal [7].” Will is one theory; are there others?

If not will, is it the process of evolution itself? Charles Darwin explained that evolution causes changes in species (we now know are genetic mutations) which natural selection uses to adjust the balance of nature [8].

Is it the gene? Richard Dawkins saw the gene as the locus for the ego, that it produces the selfishness that is required for individuals to exist and procreate [9].

Here we have at least three theories that help provide some metaphysical and organic insight as to causes of the tenacity of life. Rather than try to offer another explanation of how life became so tenacious, I will simply say that life’s tenaciousness is self-evident; and as a result I will maintain that an important attribute of life is continuity. Continuity, therefore, is my fourth attribute of life added to Deacon’s three: lipid bag, metabolic process, and plan.

Life became once; we do not know whether it could become again. Without continuity, life ceases to exist. Therefore, because we cannot confirm multiple instances of life independently becoming, I will maintain for purposes of this paper, that continuity is an attribute of life. I can assume this because we have no evidence of life becoming more than once. If life only became once and on earth, but we do not know how, or do not know whether it will become again before the end of the solar system, then we may need

³ Crick as in Francis Crick, co-discoverer of the DNA double helix, and Nobel prize laureate.

⁴ There are many religious explanations of God which I will not reference. The alien as prime mover has not received much treatment in the literature but is a common theme in science fiction. For example the movie *Prometheus* (2012) by Ridley Scott combined the idea of emergence of life on earth but that aliens created humans.

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