Evolution Through The Lens of Soul's Journey and Time Cycle In Jainism

Keywords: Evolution. Time-Cycle in Jainism. Journey of soul in Jain Philosophy. Possible Transformation of TOE.

Author: Dr. Medhavi Jain

Writer, Life Coach, Researcher, Podcaster

Email: medhavig4u@gmail.com

Published in Anekanta: Exploring The Shramana Tradition (Festschrift to Prof. Hampa Nagarajaiah (Hampana)

Evolution Through the Lens of Soul's Journey and Time Cycle In Jainism

Abstract

When we think about the theory of evolution, one thought creeps into every thoughtful mind that if we have evolved through apes (like beings), this evolution will not stop here at Homo sapiens as the most modern, developed, vital, and wisest version. Evolution is a continuous process, and, in the future, as per the survival of the fittest and, ironically, even the most powerful, we will evolve into some other, even better species! Well, it sounds positive and hopeful.

Till now, we look at the sequence of evolution as (beings similar to) apes which have evolved into Homo Sapiens and will continue to do so until perfection. Hypothetically we can look at this sequence through exactly the opposite perspective, which leads us from being the most developed Humans to present-day Homo Sapiens through devolution. If this devolution continues, Homo-Sapiens will devolve into (beings similar to) apes. In either case, evolution and devolution will not be stagnant. Even if either pinnacle is achieved, it won't stop, for change is constant in the universe. This thought/idea leads to a cyclic pattern of occurrences, which provides a base for further research.

Modern science has only analysed the previous scenario, whereas it should have looked at both ways; for the present-day scenario of exploitation of domesticated animals, unethical use of armaments and finances, man's hunger to attain power and quest to intrude into the workings of nature through experimentations of Artificial Intelligence etc. portray a different, fearful scene in front of our eyes. Also, suppose the survival of the fittest is the only way to move forward. In that case, that day does not seem far when the more powerful humans start to massacre the less powerful ones to maintain the population of their beloved planet.

Presently, mankind is forgetting that with power comes great responsibility. In this paper, an attempt has been made to reflect upon the theory of evolution by adding consciousness and then by analysing the same through the glass of time cycle in Jain philosophy, which indicates that what we understand as evolution is actually devolution.

Introduction

Science and religious philosophies are the innate human quests to know the secrets of the universe, to remove the layers of ignorance, and through them, to find its bliss. The beauty lies in to keep exploring, analysing, failing, and succeeding again.

Let us begin the paper with a few questions: are humans the centre of the universe? If yes, what is the role of other beings in this cosmic scene? And if they have any role, how are they important? 'Taking just insects alone, the number of living species has been estimated around three million, and the number of individual insects may be a million million million.' Such contemplation lead one to a state of thought that if there are no humans, the planet will flourish at its best. In contrast, if we remove other beings from this scenario, some workings on the planet will be negatively influenced. For example – even "termites are important

decomposers"² and even "parasites are integral components on shaping community and ecosystem structure"³. We all know how humans have harmed the earth's ecosystem, yet as the most evolved species, being human is the most significant in finding the bigger purpose of existence.

Irrespective of how insignificant it seems, a living being is a living being, which grows, feels, reproduces and dies. The definition of life is – "The property or quality that distinguishes living organisms from dead organisms and inanimate matter, manifested in functions such as metabolism, growth, reproduction, and response to stimuli or adaptation to the environment originating from within the organism." Which can be further divided into different groups like animal kingdom, plant kingdom, marine life etc. "An octopus is nothing like a mouse, and both are quite different from an oak tree. Yet in their fundamental chemistry they are rather uniform". And in terms of being alive, each being from all three kingdoms shares the same consciousness, the same spark that makes life, life. One of the ancient philosophers "Parmenides (c. 540-480 B.C.) thought that everything that exists had always existed. Nothing can come out of nothing and nothing that exists can become nothing. Parmenides took the idea even further and thought that nothing could become anything other than it was". These philosophical thoughts do not gel well with the theory of evolution because they make one believe that humane intuition is the most reliable, and it does not call for having absolute faith in the rationale.

By attempting to understand the same theory by inserting the consciousness in all beings and trying to understand its journey towards infinity, we find not only a base of our existence but also a pinnacle of our future. Also, seeing the evolution through the eye of consciousness, we observe that evolution indeed happens but not only in the physical appearance of a being but also in the level of its consciousness. We can have a look at it by peeping into the concept of the soul in the Jain philosophical text – '*Tattvārtha Sūtra*' and by taking a description of our future as mentioned in one of the ancient texts of Jainism named '*Tiloyapaṇṇatti*', that describes the cosmology of the universe in detail. And to justify the same, we can analyse our current situations, which encourage us to ask ourselves if we are on the right track.

On The Path of Self-Destruction?

We seek that which has origination and eventually goes towards destruction; how can we seek that which has always been and will forever be? That must be kept hidden, for that can get the lost race back on track.

Though the concept of time is extensive beyond limits, and observation of a few hundred or even a thousand years cannot tell us the exact fate of mankind, however, we can get a glimpse. Keeping the phrase 'obvious does not need evidence' in consideration, let's not take the research done by renowned industries. Let's talk to someone 60+ and ask them how they have seen the world change in the past years, in terms of morality, simplicity, relationship stability, peace of mind and happiness. One can be assured that they will have volumes to speak, be it the decreasing age of becoming sexually active, increased divorce rate, rapidly growing

consumerism, unhealthy and unethical eating choices and so on... But of course, research is not based on one's observations; hence, let's consider a few well-researched examples.

Though immortality has lured humans since time immemorial, however, at present, the human race is desperately preparing to defeat death. It appears that soon death will be the talk of the past as a metaphysical happening; rather, it will be treated as a disease, a cure that could be found if tried. The famous search engine company Google is working in this direction. Recently they have launched "a sub-company called Calico, whose stated mission is 'to solve death'. Being curious is commendable, and being humans, we are blessed with this trait, but would it be fair for an inquisitive mind if it tries to play with the laws of nature?

Experiments in **genetic engineering** are at a pace where the aim is to engineer the most efficient and fittest possible children through the best DNA of both parents, but the scary truth is that "if the DNA test discovers the dreaded mutations – the embryo will be destroyed". The mere thought is dreadful.

The uncontrolled boost of **animal agriculture** indicates a threatening future, too. From the sugar we use in our cup of tea, to the soaps we use, the medicines we take, and the food we eat, everything is derived from animals through violent means. Vegetarianism may become a word found in dictionaries in a few hundred years (or even sooner) from now. Despite the so-called animal-saving campaigns, the wild animal population is continuously decreasing. Humans have smartly managed to increase the populace of domesticated animals, be it pets they love the most or the cattle they love to eat or use for other means. This is scary indeed that "the world is populated mainly by humans and their domesticated animals"⁹.

Today "livestock systems occupy about 30% of the planet's ice-free terrestrial surface area and are a significant global asset with a value of at least \$1.4 trillion." In this scenario, how could humans pay attention to the petty truth that even animals have souls or they, too, are the equally loved children of mother earth and hence possess the equal right to live? Ironically, having the most developed brain has led us to manipulate things and events and use other less developed beings in our favour. In contrast, it should have been the other way around. Modified and contorted views of a few religions have played a vital role. Where it has been directed in the adherents' subconscious that only humans have souls, and hence only they exist in the context of development, suffering, growth and so on... Whereas, "there is zero scientific evidence that in contrast to pigs (or any other animals), Sapiens have souls"11. Hence, treating them as per our needs is fair and wise. As soon as it is established that animals do not have souls, the guilt of using them the way we want, vanishes. "Homo Sapiens likes to think that it enjoys a superior moral status, and that human life has much greater value than the lives of pigs, elephants or wolves"¹². They have concluded that mighty humans have the right to cause suffering to the weaker, lesser developed species. What they have completely ignored is that nature has an innate moral order as well.

The greed of the human race has no leaps and bounds; rather, it is increasing seamlessly with each passing day. "Over 150 million animals are killed for food around the world every day—just on land. That comes out to 56 billion land animals killed per year in the U.S. alone.

Including wild caught and farmed fishes, we get a daily total closer to 3 billion animals killed."¹³ Above all this hullabaloo, we pretend that we care for mother earth and are worried about the harm global warming is causing our planet. It is like killing someone on the one hand and pretending to be a saviour on the other. Humans seem to have forgotten completely that they are in the shelter of the planet and not vice versa.

The three rapidly growing industries that are attracting huge investments of finances indicate a scary future of mankind. Besides the one mentioned above, **armaments** is another trade in which unbelievable shoot up has been occurred in the past few years. "In 2018, the world's military spending amounted to 1.78 trillion U.S. dollars, compared to 1.1 trillion U.S. dollars in 2001."¹⁴

The third rapidly growing fearful economy is the medicine industry. "The global **pharmaceutical** market has experienced significant growth in recent years. As of 2018 the total global pharmaceutical market is valued at about 1.2 trillion U.S. dollars. This is a significant increase from 2001 when the market was valued at just 390 billion (0.39 trillion) U.S. dollars."¹⁵ This statistic depicts that even that day is not far when humans will be used as puppets at the hands of pharmaceutical companies. However, smaller patterns of this can easily be observed in our daily lives.

Besides these challenges, **Artificial Intelligence** (AI) will be another big challenge for humankind in the near future. Russia's president Vladimir Putin said: "Artificial intelligence is the future, not only for Russia, but for all humankind. It comes with enormous opportunities, but also threats that are difficult to predict. Whoever becomes the leader in this sphere will become the ruler of the world." Need not say that most nations are working vigorously in applying AI in different fields like automated weapons, personas like virtual news readers, robotic aids instead of human labourers etc. Which will eat up millions' employment in the long run. That will eventually lead to other challenges worldwide. According to a research by a U.S. think tank, "Artificial Intelligence (AI) could potentially result in a nuclear war by 2040" 17.

Cybercrime is another concern that will surely cause mass destruction in the near future, and there are many predictions that the next world war will not be a man-to-man war that causes bloodshed but a cyber war.

Seeing the **Corona Pandemic**, which has not affected only one nation or society but the whole world, killing 218,770¹⁸ people around the globe in mere four months. There are many conspiracy theories¹⁹ about how the big events of the world take place, affecting millions of people, either by brainwashing or influencing them negatively. Microsoft Founder Bill Gates warned the world much ahead of the COVID-19 pandemic saying, "It's instructive to compare our preparations for epidemics with our preparations of another sort of global threat – war because of all the things that could kill more than 10 million people around the world, the most likely is an epidemic stemming from either natural causes or bioterrorism."²⁰

Besides all this commotion, and artificial or natural disasters, we must understand and know, as author Paulo Coelho writes in his book 'The Winner Stands Alone'— "The planet is, was, and always will be stronger than us. We can't destroy it; if we overstep the mark, the planet will simply erase us from its surface and carry on existing." ²¹

On this note, we can say that the very inventions done for the benefit of mankind serve like obedient servants but, if not controlled efficiently, have the ability to engulf the whole or parts of the human race because we have removed 'that' from it which caused this whole action possible at the first place. We must wake before it's too late, but ironically we won't, and we cannot, for we are destined for downfall.

Evolution and Possible Transformation of it

If present-day humans are the result of evolution, we will keep evolving and stand at the pinnacle of being human perhaps a few thousand years from now. On the contrary, we should not deny the possibility of devolution.

"Charles Darwin (1809–1882) stated that all species of organisms arise and develop through the natural selection of small, inherited variations that increase the individual's ability to compete, survive, and reproduce." Kudos to Darwin for discovering the theory of evolution through the sheer use of his brain. He gave the world a vital link to proceed onto the path to knowing the history of mankind, of truth. But unfortunately, as Harari wrote in his well-researched work – Homo Deus, "Darwin has deprived us of our souls. If you really understand the theory of evolution, you understand that there is no soul. This is a terrifying thought" 23.

"Survival of the fittest is a phrase that originated from Darwinian evolutionary theory. In Darwinian terms the phrase is best understood as "survival of the form that will leave the most copies of itself in successive generations." If survival of the fittest is the only suitable way to take one's race further then we must ask this question to ourselves – what will we do when the world's current population of 7.7 billion will reach "9.7 billion in 2050, which could peak at nearly 11 billion around 2100? Will the more powerful humans start the mass killing of the less powerful ones? Well, according to the survival of the fittest, it seems so. Will that be the answer? If yes, what about human emotions like love, compassion, pain etc.?

Adding consciousness into the theory of evolution not only discriminates between the inanimate and the animate efficiently but also erases the discriminatory boundary that divides all beings, be it humans (from the poorest to the richest, from the weakest to the strongest) or any other animals. This thought keeps all of them on the same stratum.

We cannot measure the amount of love we feel for our off-springs or for someone we love the most. We are unable to weigh the knowledge someone has gained during his/her lifetime. We are still quite young in decoding the workings of the mind. But we need proof that the soul exists. "The life sciences doubt the existence of soul not just due to lack of evidence, but rather

because the very idea of soul contradicts the most fundamental principles of evolution".²⁶ Sometimes, truth is that faded mirror of belief which we do not want to clear, for clearing it may cause discomfort to our way of life. In which we have moulded everything according to our wish and comfort.

It is rather tough to depict our exact history merely on the basis of fossils? Whereas, "palaeontologist, Edward Forbes, remarked that very many fossil species are known and named from single and often broken specimens, or from a few specimens collected on some one spot. Only a small portion of the surface of the earth has been geologically explored, and no part with sufficient care." Surely, many other possibilities may not be proven but can give a new direction to search for the history of mankind. "Less than 1 percent of the universe is visible. More than 99 percent is invisible." There are possibilities that the invisible is supposed to be understood through other than sensory perceptions, through realisations which can be full of possibilities.

The famous Indian scientist Jagdish Chandra Bose (November 1858-November 1937)²⁹ known for many inventions including the Crescograph, a device to measure the growth in plants, believed "that plants 'feel pain and understand affection' just as much as humans do"³⁰.

If we start considering that "consciousness is first, and is in no way the result of chemical complexity, but is cause of it, according to the purpose and will-power and developed intelligence of the $j\bar{\imath}va$ "³¹. We can take the research meant for the betterment of mankind in a positive direction, where there will be respect for each life form. We can do so by adding the essence of consciousness to expand the process of evolution in all three directions of time, i.e. past, present and future. Interestingly, in India, this has always been the scene; perhaps that is why India is the spiritual leader of the world.

The Journey of Soul in the Jain Philosophical Texts

Let us begin the treasure hunt to dive into the immemorial marriage of consciousness and matter, and we will know how evolution takes place.

From time to time, eminent thinkers around the globe have tried to discover the meaning of substance and have interpreted the same. Aristotle described substance as, "that which is neither predicable of anything nor present in anything as an aspect or property of it"³². This indicates that substance exists individually. "He also held that only substances can remain self-identical through change"³³, which means they do not lose their essence and surpass time. "For Locke, a substance is that part of an individual thing in which its properties inhere". ³⁴ Hence, the qualities a visible object expresses are actually the qualities of the substance of which that object is made. "Substance may also be conceived as that which is capable of existing independently of anything else". ³⁵ These statements reveal that the fundamental substance exists despite a specific object's continuously changing forms and observability.

The Indian Jaina thinkers have described the attributes of the substance³⁶ as, "existence is the character of a substance"³⁷ and defined it³⁸ as, "that which possesses qualities and modes is a substance"³⁹. According to the Jaina philosophy, six elements fulfil the terms of attributes and definition of being a substance, and all of them, together, constitute the entire universe⁴⁰ and the soul is the only one amongst them with the unique characteristic of possessing consciousness⁴¹. In *Tattvārtha Sūtra*⁴², Ācārya Umasvati writes, "Sentience is the defining characteristic of the soul⁴³". All six substances are eternal⁴⁴, and "constantly changing but without losing their identity⁴⁵.

"Souls are independent entities" that "do not possess the material qualities of touch, taste, smell and colour" These two statements lay the basis of the uniqueness of Indian philosophies as they indicate that each soul is not only individual but also beyond physicality. At the same time, it is most observable through its activities via the medium of the physical world. For example, the one writing this article and the one reading it, are both manifestations of the soul, and both are independent; however, both are in touch through the mediums of technology and words, which belong to the material world.

As each substance is unique and individual, and no matter what, it never leaves its fundamental nature. In the context of the soul, "The soul is never bereft of sentience, however feeble and indistinct this may be in undeveloped organisms." Be it a unicellular bacteria, a tiny grass plant or each living cell that accommodates a being, every being is a manifestation of the same life force; the difference lies in their location on the evolutionary ladder. *Tattvārtha Sūtra*⁴⁹ mentions, "the worldly souls are classified as mobile and immobile beings⁵⁰". Here, worldly souls means souls bound in the cycle of birth, death and rebirth because of their incessant cause-generating activities.

The common phrase, "What goes around, comes around", has been contemplated by us innumerable times. We've heard of Newton's third law that says, "For every action, there is an equal and opposite reaction"⁵¹. We connect these phrases with karma, but we do not contemplate them further and in detail. However, ancient Jaina thinkers have done this for us with extreme subtlety. According to whom, "directed by the various processes of karma, the soul passes through different states which generate changes in its nature⁵²". Hence, the consciousness decides its own destiny, for "the soul has an inherent capacity which can affect how the bondage is ended, thereby affecting its own fate"⁵³. Each individual soul is equipped with the knowledge of its immemorial bondage with karma and knows how it can end. While performing actions and enduring their effects, the soul keeps climbing or descending the ladder of evolution under the compulsion of its reactions.

There are many examples where we find ourselves unable to predict the exact time of the beginning of a specific event; for example – is it possible to predict exactly when the gold alloy with the sand particles or, for that matter, when did gold come into existence? It was there in one form or the other, but it was gold since time immemorial and no matter what we do to it, it will stay so. Similarly, in the context of the journey of the soul, Jaina thinkers have mentioned

that, "there is no beginning to the transmigration of souls from birth to birth 54 ". However, this beginningless journey has an end in the form of Mokşa (liberation).

Time-Cycle in Jain Philosophy

A cycle is hidden in each linear occurrence, just like a linear pattern is in each cyclic one.

The theory of evolution takes an interesting twist when we see it through the lens of the time cycle. In Jain philosophy, cosmic time is cyclic (please see the image in reference 57); hence, it neither has a beginning nor an end. It is divided into two $k\bar{a}la$ mainly: $Utsarpin\bar{i}$ and $Avasarpin\bar{i}$. Each of these is again subdivided into six time periods. Whereas $Utsarpin\bar{i}$ refers to the increase of height, age, beauty, wealth, happiness, knowledge, wisdom and all the other positive traits, with the passing of time, $Avasarpin\bar{i}$ is the opposite of that, i.e. all the mentioned traits decrease as the time passes. Currently, we are in the fifth era $(\bar{a}r\bar{a})$ of $Avasarpin\bar{i}$ $k\bar{a}la$. The duration of the first three time periods seems beyond our numerical understanding as they are described in years we cannot measure.

Even the fourth era is immeasurably long; however, the ancient Indian thinkers have described the length of the same, as the number we get after subtracting 42,000 years from 1e+14 (this is the number we get when we multiply 10 million by 10 million). The fifth and sixth $k\bar{a}la$ are 21,000 years each; almost 2700 years have passed since the current time period, which is the fifth era or $du\acute{s}m\bar{a}$ $k\bar{a}la$ or Pancama $k\bar{a}la$. After this time period, $Du\acute{s}m\bar{a}du\acute{s}m\bar{a}$ $k\bar{a}la$ of the same length will come, which will be a time of extreme grief. Abstract translated from Jainendra Siddhanta Kosha of the description of humans in $Du\acute{s}m\bar{a}du\acute{s}m\bar{a}$ $k\bar{a}la$ as mentioned in the text $Tiloyapannatti^{55}$ is as under:

Body: The height at entering this time period is three or three and a half hands (i.e. 3 to 4 feet approximately).

Appearance: Their appearance resembles apes, and their bodies smell bad.

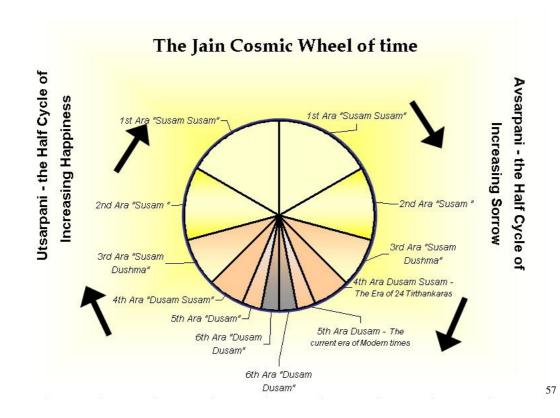
Age: The maximum age span is 20 years.

Residence: They do not have houses; they are homeless and wander naked in the forests. There are no trees, nor do they have livestock.

Physiological miseries: Often, the demeanour of humans is beastly, ruthless, deaf, blind, dumb, impoverished, and short-tempered. Their bodies are filled with diseases. They do not have families.

As time passes, their height, age and strength keep decreasing.

(Please note that due to the difference between the author and publisher, the $g\bar{a}th\bar{a}$ numbers have been changed in Jainendra Siddhānta Koṣa as $g\bar{a}th\bar{a}$ 1535 to 1542⁵⁶ also, the chapter has been mentioned as chapter-4.)



To compare the collective situation of the human race from the last time period of the descending cycle, which is of extreme misery; and from the last time period of the ascending cycle, which is of extreme happiness, let us now have a glimpse of the description of humans given in the text $Tiloyapaṇṇatti^{58}$ upon entering the 6^{th} time period of the $Utsarpiṇī k\bar{a}la$ (the half cycle of increasing happiness):

Body: The height of the humans at entering this time period is 2 Kosa (1 Kosa is equal to 1.8 Kilometer).

Appearance: Their complexion is that of a full moon and they have 128 bones in their spine. Age: Their age is 2 Palya (Palya is the unit given by the Jaina thinkers to measure the immeasurable time).

Demeanour: They are extremely humble and virtuous. Their bodies are free of diseases. As time passes, their height, age, beauty and the availability of the natural resources on the earth keep increasing.

The clock, the calendar, the seasons, the movements of the sun, the moon, and the planets are all cyclic. It is the soul substance that keeps evolving and devolving amongst these. It keeps going through the cycles in countless physical manifestations, generating causes and, in turn, enduring their effects, curating its destiny. Until one day realises that it has the inevitable, innate ability to know how the cycles take place, and in knowing so, the soul realises that it is not the cycles that will end, but it is itself that has to be withdrawn from these.

After analysing evolution by considering the time cycle, we see that neither evolution is permanent nor devolution and that devolution eventually leads to evolution. According to the

time cycle in Jain philosophy, the next $Utsarpin\bar{\imath} k\bar{a}la$ (the half cycle of increasing happiness) will start with the sixth time zone, i.e. $Du\dot{s}m\bar{a}du\dot{s}m\bar{a} k\bar{a}la$ (time of extreme grief), it will proceed towards $Du\dot{s}m\bar{a} k\bar{a}la$ (time similar to the current times) and eventually, till the first time period which is $Su\dot{s}am\bar{a}su\dot{s}am\bar{a} k\bar{a}la$ (time of extreme happiness). The mere thought of attaining a state of the most spiritually evolved beings is calming, as if we have found a base for our existence.

Ancient Indian wisdom indicates that we are but individuals travelling collectively on our respective journeys. We can influence others around us and, in turn, can get influenced by them. However, during this interchange of ideas and energies, we do not lose the essence of our individual journeys. And that the time cycle is never-ending, the matter being the non-living entity cannot have a quest; however, as conscious beings, we can wilfully choose to withdraw ourselves from this cycle.

Conclusion

O human, wake up within.

In modern times, the world has been ruled by the West. We are highly influenced by them; we tend to eat what they eat. We love to wear what they propagate. We use products promoted by them. We look up to them to teach us how to live. On this insecurity of ours, consumerism flourishes, animal agriculture is at its peak, and we are travelling afar from our culture that has been teaching us to be spiritually evolved all this while. Ironically, now the restlessness is reversing itself, i.e. the West is seeking shelter in the East for peace of mind, spirituality and simple living, which can be seen in the increased spiritual tourism in India and other eastern countries. All our queries, our quest for peace of mind, our moments of inner bliss and our keen interest in gaining knowledge indicate our genius self, which is not satisfied by the shallow answers of the modern world because these answers can only be found within.

With time, our inner turbulence is increasing and will keep inflating if we don't seek the shelter of the 'self'. Having the most developed brain has led us to the peak of worldly enjoyment and the worst of mental and emotional dilemmas. Hence, it is necessary to find a source of peace that requires no outer cause, no information, no technology, but only a feeling of being, a realisation of the self, and an emotion of gratitude that whoever I am, I am enough.

The modern Theory of Evolution plays the role of strengthening the thought of alien-ness in our subconscious. It is easier to believe we are insignificant, random existences in this vast universe without a significant purpose. We are just amalgamations of energy and molecules, built under some chemical conditions, and will dissolve into the same. This belief keeps our conscience in an ever-sleeping mode, and what else can be better than comfortable ignorance?

By misusing natural resources tremendously, we have abused Mother Earth irreparably. Understanding the true essence of religious philosophies may play an essential role in reviving our strength. They help us understand our real essence and teach us to respect the other beings located at a lower rung in the evolutionary ladder. Religious philosophies also provide us with logical answers about the cosmology of the universe, space, time, metaphysics, consciousness and whatnot, but only if we try to understand them with an open and analytical mind.

The theory of evolution is a huge success that can eventually provide the answers one seeks, but only if we add consciousness to the recipe. It is possible that whom we consider the first man will turn out to be the last.

¹ Dawkins, Richard. The Selfish Gene. (40th Anniv. Edi.). Oxford University Press, UK. 2016: 26

<thoughtco.com/fascinating-facts-about-termites-1968587>

<www.ncbi.nlm.nih.gov/pmc/articles/PMC2935116/>

<sentientmedia.org/how-many-animals-are-killed-for-food-every-day/>

<www.statista.com/statistics/264434/trend-of-global-military-spending/>

² Hadley, Debbie. "10 Fascinating Facts About Termites." ThoughtCo, Feb. 11, 2020. Web. 27th April, 2020

³ Preston, D. & Johnson, P. (2010) Ecological Consequences of Parasitism. *Nature Education Knowledge* 3(10):47. Web. 27th April, 2020

<www.nature.com/scitable/knowledge/library/ecological-consequences-of-parasitism-13255694/>

⁴ "Life." the free dictionary.com. Web. 27th April 2020 < <u>www.thefree dictionary.com/Living+Beings</u>>

⁵ Dawkins, Richard. Op. Cit. 2016: 26

⁶ Gaarder, Jostein. Sophie's World. Orion Publishing Company, London. 2015: 29,30

⁷ Harari, Yuval Noah. Homo Deus – A Brief History of Tomorrow. Harper Collins Publishers, New York, USA. 2017: 24.

⁸ Harari, Yoval Noah. Op. Cit. 2017: 53.

⁹ Harari, Yoval Noah. Op. Cit. 2017: 71.

¹⁰ Thornton, Philip K. Livestock Production: Recent Trends, Future Prospects. Web. 16th October, 2019.

¹¹ Harari, Yoval Noah. Op. Cit. 2017: 12.

¹² Harari, Yoval Noah. Op. Cit. 2017: 101.

¹³ Zampa, Matthew. How Many Animals Are Killed For Food Every Day? Web. 16th October, 2019.

¹⁴ Global Military Spending From 2001 to 2018. Web. 18th October, 2019.

¹⁵ Revenue of the Worldwide Pharmaceutical Market From 2001 to 2018. Web. 16th October, 2019.

<www.statista.com/statistics/263102/pharmaceutical-market-worldwide-revenue-since-2001/>

¹⁶ Marr, Bernard. Is Artificial Intelligence Dangerous? 6 AI Risks Everyone Should Know About. Web. 12th April, 2020.<<u>www.forbes.com/sites/bernardmarr/2018/11/19/is-artificial-intelligence-dangerous-6-ai-risks-everyone-should-know-about/#505710a12404></u>

¹⁷ Browne, Ryan. A.I. could lead to a nuclear war by 2040, think tank warns. Web. 14th April, 2020

< www.cnbc.com/2018/04/25/ai-could-lead-to-a-nuclear-war-by-2040-rand-corporation-warns.html>

¹⁸ Web. 29th April, 2020 Time: 6 PM <www.worldometers.info/coronavirus/coronavirus-death-toll/>

¹⁹ Icke, David. The Truth Behind The Coronavirus Pandemic: COVID-19 Lockdown & The Economic Crash. Web. 15th April, 2020 <www.youtube.com/watch?v=gMTZu6_TjU8&t=31s>

²⁰ Gates, Bill. The Next Epidemic – Lessons From Ebola. The New England Journal of Medicine. 9th April, 2015. Downloaded from nejm.org at Leids University Medisch Centrum. Web. 27th April 2020.

²¹ The Winner Stand Alone Quotes. Web. 18th October 2019.

<www.goodreads.com/work/quotes/5424205-o-vencedor-est-s>

²² "Darwinism" Web. 29th October, 2019. <en.wikipedia.org/wiki/Darwinism>

²³ Harari, Yoval Noah. Op. Cit. 2017: 104.

²⁴ "Survival of the fittest." Web. 29th October, 2019. <en.wikipedia.org/wiki/Survival_of_the_fittest>

²⁵ Growing at a slower pace, world population is expected to reach 9.7 billion in 2050 and could peak at nearly 11 billion around 2100. Web. 22nd October, 2019

www.un.org/development/desa/en/news/population/world-population-prospects-2019.html

²⁶ Harari, Yoval Noah. Op. Cit. 2017: 102,103.

²⁷ Darwin, Charles. The Origin of Species. Fingerprint Classics, New Delhi. Reprint 2019: 294.

²⁸ Jansma, Rudi. Non-Physical Order of Existence (Research Paper). Jain Philosophy: A Scientific Approach to Reality. Jain Vishva Bharati Institute. Ladnun, Rajasthan. 2018: 202.

²⁹ "Jagdish Chandra Bose" Web. 25th April 2020. <en.wikipedia.org/wiki/Jagadish Chandra Bose>

³⁰ Samuels, Gabriel. Jagadish Chandra Bose: Five Facts You Need to Know About One of the World's Greatest Scientists. 29th November 2016. Web. 25th April 2020. <<u>www.independent.co.uk/news/people/jagadish-chandra-bose-158-birthday-who-is-he-google-doodle-scientist-crescograph-biophysics-a7445526.html></u>

³¹ Jansma, Rudi. Op. Cit. 2018: 205.

```
<sup>32</sup> Audi, Robert. Ed. The Cambridge Dictionary of Philosophy. Cambridge University Press. New York. 2015:
1034.
<sup>33</sup> Ibid, 1034.
<sup>34</sup> Audi, Robert. Op. Cit. 2015: 1034
<sup>35</sup> Ibid, 1034.
<sup>36</sup> "sad dravyalaksanam" (Tattvãrtha Sūtra 5/29)
<sup>37</sup> Tatia, Nathmal. Ed. and Trans. Tattvārtha Sūtra: That Which Is. New Haven & London: Yale University
Press, 2011: 135.
<sup>38</sup> "guṇa-paryāyavad dravyam" (Tattvãrtha Sūtra 5/37)
<sup>39</sup> Tatia, Nathmal. Op. Cit. 2011: 142
<sup>40</sup> "ajīvakāyā dharmā-dharmā-kāśa-pudgalāḥ" (Tattvārtha Sūtra 5/1)
<sup>41</sup> "dravyāṇi jīvāśa ca" (Tattvārtha Sūtra 5/2)
<sup>42</sup> "upayogo lakṣaṇam" (Tattvãrtha Sūtra 2/8)
<sup>43</sup> Tatia, Nathmal. Op. Cit. 2011: 39
<sup>44</sup> "nityāvasthitāny arūpāṇī ca" (Tattvãrtha Sūtra 5/3)
<sup>45</sup> Tatia, Nathmal. Op. Cit. 2011: 124
<sup>46</sup> Tatia, Nathmal. Op. Cit. 2011: 124
<sup>47</sup> Tatia, Nathmal. Op. Cit. 2011: 34.
<sup>48</sup> Tatia, Nathmal. Op. Cit. 2011: 39
<sup>49</sup> "samsāriņāsa trasa-sthāvarah" (Tattvārtha Sūtra 2/12)
<sup>50</sup> Tatia, Nathmal. Op. Cit. 2011: 41
51 Newton, Isaac. Newtons Third Law. Web. 22<sup>nd</sup> April, 2020 <www.pinterest.com/pin/426434658445919669/>
<sup>52</sup> Tatia, Nathmal. Ed. and Trans. Tattvārtha Sūtra: That Which Is. New Haven & London: Yale University
Press, 2011: 33.
<sup>53</sup> Tatia, Nathmal. Op. Cit. 2011: 34.
<sup>54</sup> Tatia, Nathmal. Op. Cit. 2011: 35.
55"mūlapaphala - macchādi, savvānam mānusāna āhāro
tāhe vāsā vacchā, geha - ppahudī narā na dīsamti 1558
tatto naggā savve, bhavana-vihīnā vaņesu himdamtā
savvamga-dhūma-vaṇṇā, go dhamma-parāyaṇā kūrā 1559
bahirā amdhā kāṇā, mūkā dāridda-kūḍa-paripuññā
dīṇā vāṇara - rūvā, aimecchā humḍasamthāṇā 1560
kujjā vāmaņa-taņuņo, ņāņāviha-vāhi-veyaņā-viyalā
bahu-koha-loha-mohā, paurāhārā sahāva-pāviṭṭhā 1561
sambaddha-sajana-bamdhava-dhana-putta-kalatta-mitta-parihīnā
phudīdamga-phudīda-kesā, jūvā-likkhāhī samchannā" 1562
Shri Yati Vrishabhacharya. Aryika Vishuddhamati. Trans. Dr. Chetanprakash Patni. Ed. Tiloypannatti-2.
Acharya Bahubali Adhyatmik Anusandhan trust, Shikohpur, Gurgaon. 2006: 448
<sup>56</sup> Varni, Jinendra. Jainendra Siddhanta Kosha. Part-2. Tenth Edition: 2014. Bhartiya Jnanapith. New Delhi.
Translated from pp. 90
<sup>57</sup> "Jain Cosmology." Web. 15<sup>th</sup> October, 2019. <en.wikipedia.org/wiki/Jain cosmology>
<sup>58</sup> "do kosā uccheho, ṇāri-ṇarā puṇṇamindu-sarisa-muhā
bahuviṇaya-sīlavamtā, biguṇīya-causaṭṭhī-puṭṭhī 1623
susamasusamābhiṣāṇo, tāhe pavisedi chaṭṭhamo kālo
tassa padhame paese, āū - pahudīņī puvvam va 1624
kāla-sahāva-baleņam, vaddhante tāi maņuva - tiriyāṇam
tāhe esa dharitti, uttamabhogāvaņī tti supasiddho" 1625
Shri Yati Vrishabhacharya. Aryika Vishuddhamati. Trans. Dr. Chetanprakash Patni. Ed. Tiloypannatti-2.
Acharya Bahubali Adhyatmik Anusandhan trust, Shikohpur, Gurgaon. 2006: 464
```

Acknowledgement to the Documentaries:

Netflix:

- 1. Cowspiracy: The Sustainability Secret
- 2. COD is Dead
- 3. What The Health
- 4. Forks Over Knives
- 5. Minimalism

YouTube:

- 1. Earthlings
- 2. David Icke. The Truth Behind The Coronavirus Pandemic: COVID-19 Lockdown & The Economic Crash

Curiosity Stream:

- 1. First Man
- 2. What Killed The Giant Insects (from Ancient Earth series)

TED Ideas Worth Spreading:

1. The next outbreak? We're not ready – By Bill Gates