



Value of a Human Life – Perspectives from the Conception Scenario

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Abstract :

When did you begin to live? Was it from when you were born or was it even earlier? This article examines these questions from what science tells us about conception and birth, and analyses quantitatively, and present perspectives to facilitate realisation of the preciousness of life, which in turn enables one to live an ethical purpose driven life.

Introduction

When a child is born, there is jubilation. The date of birth is the day a baby is delivered from the womb of her mother. This day is remembered and celebrated year after year. A horoscope is prepared based on the date, time and place of birth. However the date and time a child came to be, the date and time the child was conceived, is not given much importance. One reason for this lack of importance is because the precise date and time of conception, is unknowable. Conception happens when a sperm cell successfully fertilises the egg cell in the mother. This may happen within an hour of coitus, but may also take place as late as three or four days after. Bodily signs that a woman has conceived become visible

only after several days. Therefore, one never gets to know the date and time when a baby is conceived. Another reason is the close association with coitus - a subject that is taboo in social discussions. This article expounds ideas associated with conception. It is believed that a cognitive understanding coupled with meditative contemplation of the odds one has been in before birth can change one's outlook towards life. More specifically, mindfulness of this can facilitate realising the immense value of a human life and thus spur one to live a purpose driven life.

Miracle of Your Conception and Birth:

Until about 1875, human conception was a total mystery⁽¹⁾. The microscope maker Van

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Leeuwenhoek, discovered in the year 1677, the presence of thousands of motile life-forms in semen, what we now know are human sperm cells or spermatozoa. Back then, these were dismissed as foreign micro-organisms, the kind seen under a microscope when examining water from a pond or human skin scrapings. Until the early 1800s, this parasite theory remained the conventional view.

We now know that the spermatozoon (together with an ovum) is responsible for conception, and consequent birth of a human being. We also know that after coitus around 200 million spermatozoa are released, same as the population of all people living in the states of Karnataka, Tamil Nadu and Kerala. Among the 200 million spermatozoa, there was only one who was to be the present-you. This is because is every other spermatozoon is a different being. As to whether the to-be-born baby would be a girl or a boy depends on whether the sperm cell that succeeded carried an X or a Y chromosome. Thus, even the sex of the baby-to-be is dependent on the spermatozoon, not to mention the numerous characteristics and traits the baby will inherit. If that specific spermatozoon had not fertilised the egg, you would not have been born - period.

Analysing this scenario mathematically, let us pose a numerical question: Soon after coitus what was the probability that you would be born? There were about 200 million sperm cells, among whom only one was the you-to-be. Therefore, the probability of your conception (and consequent birth) was one in two hundred million - the fraction $1 / (2 \times 10^6)$. This is the same as the chance of you

winning a lottery prize, where you purchased one ticket and 200 million people also bought one each. Your life is valuable indeed, since you have won such a prize.

Life of a Spermatozoon:

There are certain attributes about the spermatozoon that needs to be regarded, in order to truly comprehend the value of being human. The spermatozoon is a living being. This being has life, has a head that carries a very intelligent genetic code (like a human head carrying a brain), a mid-piece and a tail. This life-form is certainly far more advanced than any microbe. Genome is the set of DNA instructions found in a cell. Sperm cells and egg cells carry one genome (with 23 chromosomes) each, while the other cells (with a few exceptions such as the red blood corpuscles) carry a pair of genomes⁽²⁾. Cells produce other similar cells – a muscle cell multiplies to produce other similar muscle cells, a cell in the iris of the eye produces similar such cells and so on. However, a sperm cell does not replicate itself. This cell (together with the egg cell) has a phenomenal capacity to build all organs (including the brain responsible for consciousness). Thus, the sperm cell (and the egg cell) is special, very different from the trillions of the other replicating cells in the human body.

Researchers are not agreed on the number of genes contained in a human genome. The range of this estimate stands between 19,000 and 22,000⁽³⁾. Only considering the 23 chromosomes carried by the parent sperm cell (and the 23 of the egg cell), the probability that two siblings, have the same combination of chromosomes is computed

as one in 7 trillion⁽⁴⁾. The genetic code in each spermatozoon is distinct and different from the others produced by one man. Had a different sperm cell succeeded in fertilising the same egg, a different human being with different inherent characteristics would have been born.

A Short Life: Unfortunately, the life span of a spermatozoon is a maximum of a week (except for a spermatozoon that was part of a conception). We considered this spermatozoon as the winner of a lottery prize. This analogy is a gross understatement. A more representative analogy would be a scenario where the lottery winner gets to live, but all the other 200 million unsuccessful beings are killed within a few hours - conception triggers an acidic environment to protect the zygote from harmful micro-organisms and thus killing the unsuccessful sperm cells.

One among 500 Billion: Two hundred million was the number of sperm cells who were in a race to tag on to the ovum after coitus. However, on an average, a male produces 525 billion spermatozoa during his lifetime⁽⁵⁾ - say 500 billion. Each of these is unique in their genetic composition. Your life evolved from just one of these 500 billion. Analysing mathematically, let us pose another numerical: Given that your father was born, what was the probability that you were conceived (and later born)? Your father produced about 500 billion sperm cells. Only one of whom was the You-to-be. Therefore, the probability that you would be born was one in five hundred billion - the fraction $1 / (5 \times 10^9)$. The population of the world today is less than 8 billion. This fact helps comprehend what 500 billion is, and the

odds, one has been in before receiving the gift of a human life.

Origin of Your Life – When Did You Begin to Live?

You were living before you were born (as a zygote, embryo and foetus) from the time of conception. Let us raise a rather metaphysical question. Did you have life before your conception? When did life begin in you?

To answer such questions, we examine the moments preceding conception frame by frame. Moments before conception, you existed as two beings - a spermatozoon and an ovum. Both were living beings, endowed with life. However, on conception, the life in two beings amalgamated as one. No new life was created from any inanimate material. So, you were living even before you were conceived – after coitus but before conception. However, you had two lives (not physically joined) - not one. What resulted on conception is an individual identity (physically identifiable as one). Thus the life in you had begun even before you were conceived. When we see conception frame by frame, we recognise that the specific spermatozoon who fertilised the ovum, as your true father (italicized to differentiate from father as we normally refer), and the ovum as your true mother (italicized to differentiate). Your father is thus one among the 500 billion your father had given birth to. And your mother is one among the 450 ova that your mother had given birth to. The spermatozoon (father) and the ovum (mother) inherited their lives from your father and your mother respectively. Life in you has come through converging networks

of links and chains. In certain links of this chain, part of your life was in the form of a spermatozoon or an ovum (carrying a flame of life), and in other phases as a human being (also carrying a flame of life). Today you are one link with a flame of life. The same flame that has been burning unquenched; passed on from one generation to another, for thousands of generations. The life that you experience today, several millenniums in age, will however be extinguished in a few years. Every human, conscious, form is the last and finite phase of a long and unbroken chain of life. Your life therefore is precious and invaluable when seen from this perspective.

Life and Death:

To recapitulate, your life as you experienced today is a converged and unbroken network of links and chains. The spermatozoon, ovum, man and woman are all links transferring life from one generation to another. Conception is the formation of a new link, between two other links namely a spermatozoon and an ovum. This new link develops to be a man or a woman who in turn are capable of producing links (spermatozoa or ova).

All human beings (with potential to produce links) die. The 500 billion spermatozoa (with rare exceptions) that a man gives birth to, die. The 450 ova (with rare exceptions) a woman gives birth to, die. The only ones who escape death are the spermatozoa that fertilised an ovum and the ova that were fertilised.

Life in each of the spermatozoa and ova (similar to yours and mine) is a converged and unbroken network of links and chains for thousands of years. Going back in time,

their ancestry (similar to yours and mine) is traceable. The flame of life is in them. But, when one of their fellow spermatozoa succeeds in fertilising an ovum, all the others die. They will have no progeny to carry forward their genetic inheritance from thousands of generations. The death of each of them is the death of a long and unbroken chain of life.

Some Numbers to Gain a Perspective:

We had established that, given that your father was born, the probability that you were conceived (and later born) is the fraction - one in 500 billion. We also know that, had your father not been born you would not have been born. Similarly, had your mother not been born, you would not have been born. This means that given that your paternal grandfather was born, the probability that your father was born is the fraction - one in 500 billion. Similarly, given that your maternal grandfather was born, the probability that your mother was born is the fraction - one in 500 billion. Let us pose the question as a numerical. Given that your four grandparents were born - of course they were born, but that is the way probability theorists frame questions - what was the probability that you would be born?

That probability is:

$$\begin{aligned} & (1 / 500,000,000,000) \times (1/500,000,000,000) \\ & \times (1/500,000,000,000) \\ & = 8 / (1036) \end{aligned}$$

The above fraction does not tell us much except to say that this is a very low probability. Let us go one generation up. Travel back to a date about 75 years before you were born, when your great grandparents were born and

were living as young people, and compute the probability - given that all your eight great grandparents were born, what is the probability that you are born?

This probability is:

$$8 / (1036) \times 16 / (1048) = 128 / (1084)$$

$$= 1.28/1082$$

This probability is easy to relate by comparing with our universe. The observable universe contains an estimated 300 billion galaxies, each containing about 400 billion stars, formidable numbers to begin with. Our Sun is just one of such stars and has a mass of 2×10^{27} metric tons. 75% of the universe is made up of Hydrogen atoms and 1030 Hydrogen atoms constitute a mass of one metric ton of matter. From such known facts and estimates, an estimate of the total number of atoms in the universe ranges between 1078 and 1082 atoms or say 1080 atoms⁽⁶⁾.

Knowing how miniscule an atom is and how enormous the universe, let us do a thought experiment. Consider yourself as one specific atom among all the atoms in the universe. Consider that one atom in the universe is picked up at random from the universe, and this atom will be given the gift of life as a human being. What is the probability, that the one atom that is picked up at random, among all the atoms in the universe, is you?

That was precisely the probability of you being given the gift of life as things stood then. About 75 years or so before you were born, the odds that you would be born was just as unlikely. Billions and billions of potential-humans perished when they were in the phase

of life as a spermatozoon. But you, by a series of fortuitous conceptions, have inherited the gift of life that you experience today.

Value of a Human Life:

Identifying a way to value a life is not new. Economists in the 1960s and 1970s related the characteristics and attributes (such as education, age etc.) of a person and computed the value of a life by the present value of future earnings that individuals (with such qualification and experience in them) could expect to earn⁽⁷⁾. This value is a 'human capital' based method to value a life – value similar to that ascribed to a commodity.

Richard Thaler, who was awarded the 2017 Nobel Prize in Economics for his contribution to Behavioural Economics, defines value of life as the amount members of a society are willing to pay to save one life⁽⁸⁾. He was among the first economists to research and estimate the value of life by a different approach. Thaler and Rosen estimate the value of life by the wage premiums that workers receive for occupational fatalities risk⁽⁸⁾. This method continues to be the principal method to arrive at the Value of a Statistical Life (VSL) in the USA – to carry out a benefit-cost-analysis for the number of lives saved and the expenditure in improving road safety⁽⁹⁾.

All the above methods are concerned with value of an unidentified human life. All these approaches are also about the value ascribed by society for a human life. But how much indeed is the value of one's own life, to any particular individual?

It can be surmised that a person who takes out his life, had ascribed little value to his

life. Similarly, a person who easily gives-in to life-shortening habits such as smoking, alcoholism or drugs, does not value his life much. On the other hand it can also be surmised that one who takes the effort to exercise, limits the calories he consumes and strives to maintain health and fitness, values his life more. Several people do not realise the true value of life, as evident from the way they live. The perspective presented in this article is an attempt to facilitate realisation of the preciousness of life.

Conclusion:

When one realises the preciousness of life, life is lived differently. A case to illustrate is the life of activist Anna Hazare. During the Indo-Pak war of 1965, an air raid by Sabre Jets had left dozens of soldiers dead and others in his company seriously injured. Hazare, however, escaped unhurt. After this event, Hazare became a vegetarian, gave up cigarettes and liquor, and vowed to remain a bachelor, devoting himself to public service⁽¹⁰⁾. The transformation that he brought about in his native village Rallegaon Siddhi thereafter, is well documented. Having a close brush with death resulted in Anna Hazare realising the preciousness of life, and this resulted in a transformation of his outlook.

One need not necessarily go through a near-death experience for such a transformation. This can also happen by contemplating the ideas postulated here. However, a mere comprehension of these ideas would have little impact. One needs to harness the power of the mind⁽¹¹⁾ and meditatively reflect and introspect, live life fully and ethically⁽¹²⁾.

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