

6. *Rooh* and the Phenomena of Life, Death and Soul Based on Computer Model of Organism

How to define 'life' is a sweeping question that affects all branches of biology. Carol Cleland opines that it is a mistake to try to define 'life' [1]. Nevertheless, life has been described in terms of the properties or attributes of living organism. Some examples are given below.

a) "Living things tend to be complex and highly organized. They have the ability to take in energy from the environment and transform it for growth and reproduction. Organisms tend toward homeostasis: an equilibrium of parameters that define their environment. Living creatures respond, and their stimulation fosters a reaction-like motion, recoil, and in advanced forms, learning. Life is reproductive, as some kind of copying is needed for evolution to take hold through a population's mutations and natural selection. To grow and develop, living creatures need foremost to be consumers, since growth includes changing biomass, creating new individuals and the shedding of waste. To qualify as a living thing, a creature must meet some variation for all these criteria. For example a crystal can grow, reach equilibrium, and even move in response to stimuli, but lacks what commonly would be thought of as a biological nervous system" [1].

b) Five basic characteristics are used to describe life namely, evidence of growth and replication, evidence of purposeful energy transfer, response to stimuli, self-preservation, and significant difference from the surrounding environment, although difficulties are faced in its implementation [2].

c) "Living beings are systems that have three simultaneous features: they are self-supported, they reproduce themselves and they evolve through interaction with the environment" [3].

d) "Life is a chemical system able to replicate itself through autocatalysis and to make mistakes that gradually increase the efficiency of the autocatalysis" [3].

e) "Living beings are protein-made bodies formed by one or more cells that communicate with the environment through information transfer carried out by electric impulses or chemical substances, and capable of morphological evolution and metabolism, growth and reproduction" [3].

f) "Life is a self-sustained chemical system capable of undergoing Darwinian evolution" [4].

None of these descriptions characterizes the phenomenon of life in its entirety. According to Cleland and Chyba, "there is no broadly accepted definition of 'life'. Suggested definitions face problems, often in the form of robust counter-examples. Here we use insights from physiological investigations into the language to argue that defining 'life' currently poses a dilemma analogous to that faced by those hoping to define 'water' before the existence of molecular theory. In the absence of an analogous theory of the nature of living systems, interminable controversy over the definition of life is inescapable." [5].

Holy Quran is the only source of information on the phenomena of life and death. The Quran reveals that life is caused by a nonmaterial (invisible) entity called *rooh*.

وَإِذْ قَالَ رَبُّكَ لِلْمَلَائِكَةِ إِنِّي خَالِقٌ بَشَرًا مِّنْ صَلْصَالٍ مِّنْ حَمَإٍ مَّسْنُونٍ فَإِذَا سَوَّيْتُهُ وَنَفَخْتُ فِيهِ مِن رُّوحِي فَقَعُوا لَهُ سَاجِدِينَ ۝

15:28-29 Behold! Your Lord said to the angels: I am about to create a man from sounding clay (made) from sticky mud. When I have fashioned him and breathed into him from My *rooh*, you fall down in obeisance to him.

These verses describe the process of creation of Adam, the first human being, by breathing *rooh* into a nonliving material – a clay model of Adam. The term “*nafs*” is also used in the Quran (Q. 4:1) in several verses to mean *rooh* present in the human biosystem.

يَا أَيُّهَا النَّاسُ اتَّقُوا رَبَّ الَّذِي خَلَقَكُمْ مِنْ نَفْسٍ وَاحِدَةٍ وَخَلَقَ مِنْهَا زَوْجَهَا وَبَثَّ مِنْهُمَا رِجَالًا كَثِيرًا وَنِسَاءً ۚ وَاتَّقُوا اللَّهَ الَّذِي تَسَاءَلُونَ بِهِ وَالْأَرْحَامَ ۚ إِنَّ اللَّهَ كَانَ عَلَيْكُمْ رَقِيبًا

4: 1 O mankind! Fear your Lord who created you from a single *nafs* and from that, He created its mate, and from them both He (created and) spread plenty of men and women. Be conscious of Allah about whom you ask each other and (be also conscious of) the family relations. Verily, Allah is watching you.

This verse informs us that it is from a single *nafs* the entire humanity is created. The *nafs* referred to in this verse corresponds to the *rooh* breathed into the clay model of Adam. These revelations make it clear that *rooh* is the cause of life. In the light of these revelations, the phenomena of life and death have been explained scientifically based on the computer model of organism [6].

Organism – natural biocomputer or biorobot

“Breathing of *rooh*” into the clay model to create man (Adam) mentioned in the verses quoted above (Q. 15:28-29) may be considered as metaphoric expression of the installation of the divine biosoftware in the clay model of man. Upon installation of the *rooh* in that non-living clay model, it sprang to life much like a lifeless computer springs to “life” when software is installed. Therefore the invisible nonphysical *rooh* can be considered as biosoftware. The Quranic verses thus reveal to us that biosoftware (God’s instructions or program) exists in living systems in nonphysical form. Accordingly a living organism can be described as natural biocomputer system or more precisely biorobot in view of the presence of sensory mechanisms in them. The nonphysical gene originally proposed by Wilhelm Johannsen in 1909 [7] is consistent with the Quranic revelation of intangible *rooh*.

A computer consists of basically two components namely, the visible (tangible) hardware and the invisible (intangible or nonphysical) software. Although the software is nonmaterial, it requires a physical medium for its storage. The storage medium of the computer is its hard disk. An organism can also be described as biocomputer or biorobot. It is made of one or more cells. The cell is a biochip (Fig. 1). The structures in the cell (organelles and nuclear structures including DNA), tissues and organs at the level of the organism constitute the hardware. The invisible biosoftware, as in the case of computer software, is stored on a physical medium. The storage device of the cell is chromosome. It is the hard disk of the organism. Since the hardware components (chemical structures) are intended for the execution of the bioprogram, they are produced in the cell in

accordance with the bioprogram to carry out the intended functions. The variations observed among the tissues in their hardware including DNA [8] confirm this. Since the biological functions of the tissues are different, their hardware must also be different to suit the functions. In computer parlance the biosoftware may be described as integrated divine program or sets of divine instructions in the right sequence for the development of the organism (phenotype or biohardware), execution of various bioprocesses, its behaviour, instincts, habits and every other task performed by it. Accordingly, an organism can be viewed as natural biocomputer or biorobot whose development and functioning are determined by an integrated divine biosoftware (bioprogram).

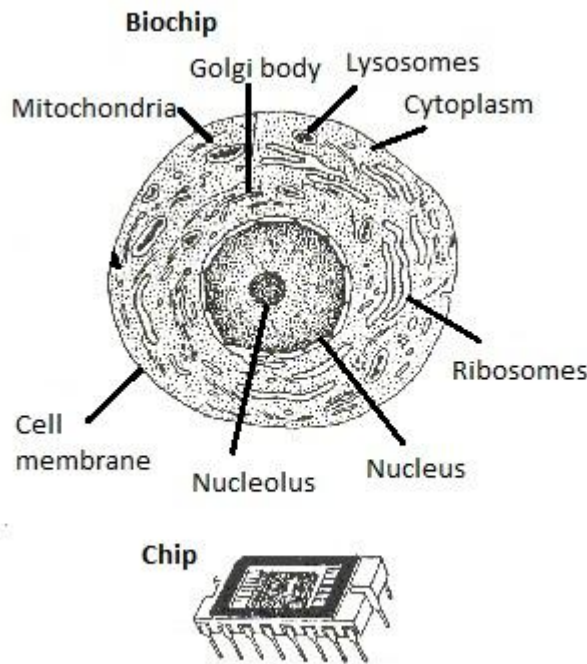


Fig. 1. A generalized diagram of the biochip (living cell) contrasted against man-made computer chip
 Note: The biochip is microscopic whereas man-made chip is macroscopic.

Definitions of life, death and soul

Most people irrespective of their religious affiliation believe in an invisible ‘soul’. The Quran further reveals at verse 6:93 that it is the removal (or in computer jargon, ‘deletion’) of *nafs* (biosoftware) from the body that results in death.

وَلَوْ تَرَىٰ إِذِ الظَّالِمُونَ فِي غَمَرَاتِ الْمَوْتِ وَالْمَلَائِكَةُ بَاسِطُو أَيْدِيهِمْ أَخْرَجُوا أَنفُسَكُمْ

6:93 “...If you could see the wicked in their panicky state at death when the angels stretch forth their hands (saying), “Release your *nafs*”....”

This implies that at death the biosoftware is *permanently* deleted from the body; i.e., it is irreversibly lost from the body cells. A dead body is therefore like a computer without software. This will explain why life cannot be created from nonlife, why a dead cell cannot be cultured, and why the material gene (genome) concept (discussed later) is wrong. Based on these Quranic revelations, *the phenomenon of life can be defined as the*

manifestation of the execution of the divine biosoftware, and death as the deletion (permanent loss) of biosoftware from the body cells.

Strictly speaking, the computer model does not distinguish between living and nonliving systems. The so-called nonliving system or the physical universe is also living as per the definition of life because it is also run on a divine program, the abioprogram. Similarly computers, robots, etc. that run on man-made software can be considered as forms of ‘artificial life’. Thus we can distinguish three forms of life in the universe based on the type of software. These are: a) abiosystems or the so-called nonliving systems that run on the divine abioprogram, b) biosystems or the living organisms that run on the divine biosoftware, and c) forms of artificial life that operate on man-made software.

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