HOW CELLULAR INSTINCTUAL DEATH AND LIFE DRIVES BOSS MY BRAIN

A billion year story

Candan Esin, MD

Psychotherapist, Istanbul / Turkey

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PREFACE

ROLE OF SPONTANEITY IN EVOLUTION OF HUMAN BODY

For more than last five years, discoveries in science enable scientists to use new technologies to prove their hypothesis about the development of life. With the latest events, we may be about to conclude that the life on Earth started at the bottom of the oceans and lake water sources. The deep-sea hydrothermal vents created the chimney like statues and the single cell organisms started their existence in around 1.43 billion years ago. The research team discovered a type of ancient microbe that relied on metal sulfide for nourishment lining the fringes of the chimneys. <Saint Louis University Medical Center (2007, July 31). Discovery Provides Key Evidence Of Life's Beginnings. *ScienceDaily*. Retrieved August 16, 2009, from http://www.sciencedaily.com /releases/2007/07/070727184902.htm> In another research; the sea bottom has the specific imprints of an ancient cellular organism, which may have bubble like structure and may move by pseudopodia (cell wall extensions). The researcher says the giant protists' bubble-like body design is probably one of the planet's oldest macroscopic body designs, which may have existed for 1.8 billion years. <University of Texas at Austin (2008, November 21). Discovery Of Giant Roaming Deep Sea Protists Provides New Perspective On Animal Evolution. *ScienceDaily*. Retrieved August 16, 2009, from http://www.sciencedaily.com /releases/2008/11/081120130531.htm> One more research put the data that growth on life is fueled by the early greening of planet. "An explosive and previously unrecognized greening of the Earth occurred toward the end of the Precambrian and was an important trigger for the Cambrian explosion of life," said Knauth, a professor in Arizona State's School of Earth and Space Exploration. "During this period, Earth became extensively occupied by photosynthesizing organisms," he added. "The greening was a key element in transforming the Precambrian world – which featured low oxygen levels and simple, bacteria dominant life forms – into the kind of world we have today with abundant oxygen and higher forms of plant and animal life." <Arizona State University (2009, July 9). Explosive Growth Of Life On Earth Fueled By Early Greening Of Planet. *ScienceDaily*. Retrieved August 16, 2009, from http://www.sciencedaily.com /releases/2009/07/090708153235.htm> We know that microbes and bacteria were the first living organisms on Earth. Their dead bodies can be preserved in silica-rich rocks. One sample taken from the walls of an ancient hydrothermal vent from western Australia, contained similar chemical to the well shaped fossils on hand. Those samples dated to 3.5 billion years ago, may hold the oldest "micro-fossils." <Bradley T. De Gregorio et. al. Biogenic origin for Earth's oldest putative micro fossils *Geology July 2009, v. 37, p. 631-634,*>

There are many similar results where the biologists, geologists and related sciences will in time update the historical chart about the life on earth. But if we can theorize using very few of these data for the evaluation of a humans body and the establishment of *instinctual drives*; I take the privilege to use your consent to put my knowledge and my theory as the followings:

The first organisms are established on the floor of the oceans. We are told that water came together with asteroids and space objects, while the earth crust has been in the process of being formed by the cooling of molten magma. The accumulating water that is heated by magma, enabled cell like creatures to develop in different types and sizes. We know in those days, there is no border between the water sources of earth. So that a sea creature specific to Pacific ocean may be found in Mediterranean sea. Therefore many types of cellular organisms match and collide each other as a result of different interactions and reactions. It may be that a cell using ferrous sulphate is detached from vent chimney wall and meet a bubble like cell. They then may meet a cell including tiny lime stone parts in its body. All of them may enjoy being together and zillions of such interactions may result in a first symmetrical organisms. After billions of years these interactions are thought to create animals and such advances in cellular development within these animal kingdom may resulted in human body.

So as to speak my skin cell wall got thicker after sun bath. This thickness result in insufficient nutrition coming from the below stratum of the skin surface. Eventually my superficial skin cells die and fall as we call it skin debris. Sometimes this death layer gets tick and some calcium residue hardens the outer surface. This is called it psoriasis. If the outer layer is not scratched it gets ticker an result in death of deeper layers and calcium deposits accumulate. This mechanism resembles the formation of oceanic reef layers in the coral sea. In order to protect the healthier deeper layers, the cells beneath secrete some chemicals called prostaglandins and prostaglandins result in itching and burning. This way the person is informed and forced to execute healing activities such as scratching and trying to find a solution by submitting to a physician. Why such a warning mechanism is needed? Answer lies in the formation of human body. There are numerous different cells, accumulated in a symbiotic purpose throughout a period of 3.5 to 4 billion years. However they spent so many years together, however most of them are stranger to each other.

A blood cell, erythrocyte, may rise from the single cell coming from deepest part of the ocean near the vents. They are using ferrous sulphate to survive. As we know today hemoglobin inside the red blood cell is made of iron. And the cell itself is very primitive, does not have a DNA or nucleus as to speak, because it loses them during maturation. Erythrocytes contains very simple organelles like ribosomes, Golgi apparatus, lysosomes etc. During the evolution period of human body, the production codes, as we call genetic material is formed and the need for red blood cell is coded inside the genes. So the stem cell has this information and some cells become erythrocyte during the embryonic growth of animal. During the evaluation of human body, erythrocyte was a foreign cell to my skin. My body just by chance met with erythrocyte and liked its transfer of oxygen and carbon dioxide. My ancient primitive body accept to live with erythrocyte. After billions of years, if some problem occurs during erythrocyte life cycle, the cell produce cytokines and my skin reacts to it. This reaction is to protect the body and eventually this reaction protects the red blood cells also.

Similar interaction and protection happens regarding the eye ball liquid, vitreous. The vitreous is the liquid inside my eyeball. My body is totally unaware

of this liquid. It is like a sac consisted of cells covering a liquid and attached to my body. Extremely late during generations of evaluation this organ has to be added -relatively late periods of the evolution. We know it should be at the very latest stages because if my vitreous liquid enter my blood stream, my body reacts immunologically and this result in the loss of the other healthy eye. This allergic auto-blindness is the result of, my body's unawareness about this liquid and thinks there is an attack. That may be the reason of multilayered protection of the eye ball in many attacking animals (lions, alligator, shark, dog, cat etc.). Except humans. Though I assume Naenthernals may have multilayered eyelids, while we are sleeping the eyeballs protrude outside. This means while attacking we were able to retract our eyeballs inside the skull. We can protect them as we also run after the wild animals. However modern humans rather consumed plants together with cooked meat. Modern humans did not need multilayered eyelids and we only have a small red colored residue is there, at the inner side of the eye.

<<If I summarize my point, every cell in the body is a foreigner to the body in total. They have to talk with each other in order to symbiotically survive. Thus the goal of survival is encoded in every cell.>>

New studies show the molecular mechanism of activation of death and survival of the cell. If one single cell receive a threat from inside or outside of the body it secretes a chemical to warn related cells. Of course the chemical should be received by a special target receiver, that is called the receptor. Special cells should inform special target cells and receptors. Otherwise, for example in case of a burn trauma, there would be huge amount of information coming from billions of cells and there would be chaos inside the body. The skin cells secrete inflammation chemicals, the nerve cells inside the skin receptors informs brain by electrical and specialized chemicals. The electrical impulse and some chemicals alarms only brain cells. Do not have any effect on heart rate directly. Brain or brain stem send information to heart and heart increase. If skin receptors happen to warn the heart muscle directly and also the same time brain warns the same heart muscle, heart muscle may got confused and do not know what to do. So the organs got specialized and in order to work properly respond only special chemicals through special receptors. However, while skin pain receptors were informing brain, a lateral information is send to body as chemical data, like little amount of cortisol. This cortisol informs other essential organs before brain informs them, such as adrenal glands, thyroid and pancreas. This is a reserved protection mechanism for the probability of central nervous system's shut down. The CNS may shut down due to trauma but the other organs has to continue to defend the body. Therefore the warning has a by-pass system.

Until total healing process is completed the organ and cell communication continues in alarm status. When the healing achieved and the all the cells feel in equilibrium the patient feels healed.

If a lesion stays or a debris occurs than the warning signals continue through the entire life and continuously send warning signs. These signs make some specialized cells alert all the time and patient feels uncomfortable, because he should be aware that he is vulnerable for death and should protect his body and cells. We usually see this end result as depression. Because body continually informs brain that there is a debris on the vast amount of body surface and he should be aware. At all times should be alert to protect the cell population and of himself. This continuous alertness result in loss of brain chemicals and make brain cells tired. They can not produce sufficient amount of serotonin and the result is depression. As they can not produce enough serotonin, more cytokins are secreted and these also create a viscous cycle.

The depression may result in a suicide attempt, due to "cellular death drive" inside the brain. The end result may be the total death of all body cells. If the animal can not survive in pull potential it has to die to pyhsically open a space for the new coming generation, or chemically to be used as nutrient.

HOW DEATH DRIVE GOT INTO THE CELL

Creation and Evaluation of a Cell

If we start imagining the evolution of multicellular human body we may start with a droplet of fatty acid molecules as a starting point. The scientists created a droplet system just like an primordial cellular body that may resemble actually an algae cell, a bacteria, a rickettsia, fungi or virus. In the news their findings were given as: "Szostak's team carefully analyzed vesicles comprised of different fatty acid molecules and identified particular features that made membranes more or less permeable to potential nutrient molecules. They found that, while large molecules such as strands of DNA or RNA could not pass through fatty acid membranes, the simple sugar molecules and individual nucleotides that make up larger nucleic acids easily crossed the membrane.

When fatty acids are in an aqueous environment, they spontaneously arrange so that their hydrophilic, or water-loving, "heads" interact with the surrounding water molecules and their hydrophobic, or water-fearing, "tails" are shielded from the water, resulting in the formation of tiny spheres of fatty acids called micelles.

Depending upon chemical concentrations and the pH of their environment, micelles can convert into layered membrane sheets or enclosed vesicles. Researchers commonly use vesicles to model the cellular membranes of protocells." <National Science Foundation (2008, June 6). New Way To Think About Earth's First Cells. *ScienceDaily*. Retrieved August 17, 2009, from http://www.sciencedaily.com /releases/2008/06/080604140959.htm>". This is a very important result, so that we may suggest how the very first cell like bodies are formed and evolved.

If we assume that; such a 'bubble like membrane' is in an environment reach of mica crystals, it is easy to imagine how a cellular organism can establish.

From Encyclopedia Britannica the chemical composition of mica is:

"Chemical composition The general formula for minerals of the mica group is $XY_{2-3}Z_4O_{10}(OH, F)_2$ with X = K, Na, Ba, Ca, Cs, (H_3O), (NH_4); Y = Al, Mg, Fe^{2+}, Li, Cr, Mn, V, Zn; and Z = Si, Al, Fe^{3+}, Be, Ti.

Glauconite is formed in marine environments. It can be found on seafloors where clastic sedimentation, which results from the relocation of minerals and organic matter to sites other than their places of origin, is lacking or nearly so. Although some glauconite has been interpreted to have been formed from pre-existing layered silicates (*eg.,* detrital biotite), most of it appears to have crystallized from aluminosilicate gels—perhaps under the influence of biochemical activities that produce reducing environments."

These are magnificent chemicals that, may also be found in almost all our cells. Therefore a warm and electrically charged environment, together with surrounding mineral rich fluid which enable the existing lipid molecules easily form the sphere shape, can be a source of a single cell like body.<Mica sheets: Bed for early life? Geotimes News Notes, February 2008> Also as we experience with the plastic

beverage bottles today, tectonic movements can produce piezoelectricity by pressing quartz inside the mica sheets. This piezoelectricity is polar and can easily be used for chemical and biological purposes by these cell precursors. This may be an additional forcing factor for cellular development. <Application of piezoelectric and seismoelectrokinetic phenomena in exploration geophysics: Review of Russian and Israeli experiences. Nahum M. Neishtadt, Lev V. Eppelbaum, Alex G. Levitski. Geophysics, 2006, 71, B41-B53> The study performed in Australia shows that fluorocarbon and hydrocarbon oil droplets in aquatic environment may attach to mica surface on special acidic and electrically charged conditions. <Anomalous pH Dependent Stability Behaviour of Surfactant-Free Nonpolar Oil Drops in Aqueous Electrolyte Solutions. Lucy Y. Clasohm, Ivan U. Vakarelski, Raymond R. Dagastine, Derek Y. C. Chan, Geoffrey W. Stevens, and Franz Grieser. Langmuir 2007, 23, 9335-9340>

After a cell like body establishes with the help of warm, electrically charged and mineral rich environment, a cycle begins. I would like to define the cycle as it is happening today, in minutes corresponding to centuries or millions or billions of years. While referencing the various archaeological reports, the first living organisms is thought to be created in around two to four billion years ago.

The creation of lipid droplets followed by the filling of these droplets with minerals and chemical molecules stemming from mica layers from surrounding environment, starts the organic life. These cell like bodies when created are destroyed by frequent volcanic bursts and movement of Earth crust, also by the strong deep sea water currencies. Therefore mica layers are excellent protective and nutritive environment for these cellular precursors. It is interesting the most prominent continent that include mica is India.(Note: That may be why the population, culture and religion is relatively old in India and Asia where large amount of muscovite mica is present. The first vertebrate and thus the H. erectus may rise from that area of the Earth maybe because the very first cellular bodies and their evolution started there. However it is assumed that the origin of humankind is from Africa, I assume the when continents were united, the first humans rise from Indian continent. Then the primitive human troops moved to Africa and the remnants of humans in India vanished, maybe due to floods or natural disasters like meteor hits. We know the rhesus macaque monkeys continued to live in India but human ancestors vanished. The troops moved to Africa evolved and increased in population and start to migrate to the other lands due to natural instinctual drives. The basic natural instinct tells us to breed that is to produce offspring. To breed successfully we are coded to (1) try to be alone, and (2) have affection towards newness and innovation. We will come to this issue again later.)

Movement of Earth's crust also create electricity, and conduct electric current to surrounding area down deep in the ocean. Ocean water includes various minerals, excellent milieu for electric conduction. The electricity is made by the friction and squeezing of quartz, mica and calcite layers inside the Earth's crust. Electrically charged environment, continuous formation of lipid droplets in hundreds of years result in the first cellular components necessary to create a cellular body.. Of course the mica surroundings on the surface of ocean floor help formation of zillions of cell like bodies, by physically protecting them. The creation happens automatically, as all needed is heat, chemicals and electricity to start a reaction. The preliminary cellular bodies did not include DNA or RNA in the beginning. They are spontaneously created by molecular forces. These cell like bodies were created by the help of environment and also destroyed by environmental forces. Until when some cells can survive whatever affect the current environmental forces apply, most probably near mica layers where they can be protected. This helped them to continue to resist environment longer than expected.

THE VERY FIRST GENETIC MATERIALS

With the help of those external creative forces like heat, minerals and electricity; a jelly like environment in the ocean floor is structuring. Also a type of recycling is happening due to destruction of old and torn-out cell like bodies. Let us also we assume that this environment is somehow steady ocean water, relatively free from fast water flows and heat currents. The surrounding jelly like sea water, continuously fed from outer mineral rich ocean water, create a nurturing area for those cellular bodies. There are areas very rich in various minerals and thus chemical molecules and thus some of these chemicals are so intact that they may be used by newly occurring bubble walls of those cell like bodies. The outer envelope is made of primitive lipid molecules and some sugar molecules. So the algae like bodies or fungi like bodies (as we know today) appear on the bottom of the ocean; of course without any DNA, RNA or organelles.

In some other area of the ocean floor, other types of non-cellular forms of chemicals appear. They resemble current viruses. They have outer envelop, which is semi-permeable to larger chemicals, like amino acid precursors, due to and by the help of volcanic nitrogen is present in the environment as biological molecular form. <Volcanic source for fixed nitrogen in the early Earth's atmosphere. Tamsin A. Mather*,1, David M. Pyle*,1 and Andrew G. Allen*,2Geology; October 2004; v. 32; no. 10; p. 905-908> External forces change to and a kind of force helped nitrogen molecules to gather producing sugar molecules. Phosphate and carbon and oxygen is also present there forming larger molecules. Which again by chance started the formation of DNA like chemical bodies. As we know today DNA like bodies can be created in laboratories. So that it can be created by spontaneous chance in the ocean water. <Synthesis and Functions of an Artificial DNA Forming Double Strands Induced by Metal Complexation. Tanaka Kentaro, So Koka, Shionoya Mitsuhiko. Sakutai Kagaku Toronkai Koen Yoshishu, 1998, Vol.48. p..332>< Yasuhiro Doi et al, J. Am. Chem. Soc., 2008, 130(27), 8762-8> and probably in a very short period of time would be used for replication for new DNA strain in a suitable environment. <Volcanogenic nutrient fluxes and plant ecosystems in large igneous provinces: an example from the Columbia River Basalt Group. David W. Jolley1, Mike Widdowson2 And Stephen Self2. Journal of the Geological Society; September 2008; v. 165; no. 5; p. 955-966> The laboratory environment is to create a replicate of the natural environment. Therefore, if DNA molecules can be created in laboratory it is very easy nature to create this in large quantities. May this is why there are huge amount of variety of viruses in the oceans compared with the amount of variety of viruses on the land.

The RNA and DNA like materials formed by natural chemical forces force the environment be filled with these molecules together with amino acid molecules, together with long chain lipid and acid molecules. This; as scientists call "chemical soup"; is an excellent milieu for a proper "phage" to be created. A phage is a chemical body, composed of DNA and its covering envelope. When looking to its molecular structure; it is not very hard to imagine how the phage is created inside such a nourishing environment, in such a huge time frame as of hundreds, millions of years.

I may speculate that; continuous tidal waves from cold to hot water movement in the seaside of an active volcano, in the conjuncture of north pole and equator, result the outer envelop of the virus like creatures to form in a crystal like shape. Trillions of them is created on and near that seashore. When created they move to the deeper parts of ocean water as the waves tear and move swimming colonies of phages. Sea wave turbulence suck those molecular bodies to deep parts of the ocean. <Viruses from Yellowstone's High Temperature Environments: Isolation, Characterisation, and Population Dynamics. Jamie Snyder1 et al. Montana State University, Press News, June 28 2009. USA><Archaeal Viruses from Yellowstone's High Temperature

Environments. Mark Young, Blake Wiedenheft, Jamie Snyder, Josh Spuhler, Francisco Roberto, Trevor Douglas *Geothermal Biology and Geochemistry in YNP [TBI Text!]*, 2005 **1:**289-304>

These phages happen to meet the precursor like bodies of algae. When the virus like substance filled with a material which resembles DNA codons, and touch the wall of algae, their outer envelop open up itself and merge with algae wall. The containing material enter into the algae without causing any effect. When merged with outer envelop of the phage molecule; with the help of DNA like substance, the only end result is a change in some parts of the wall of algae, (to give an example just like as it happens in Spondylosium panduriforme). <The virophage as a unique parasite of the giant mimivirus. Bernard La Scola1,6, Christelle Desnues1,6, Isabelle Pagnier1, Catherine Robert1, Lina Barrassi1, Ghislain Fournous1, Michèle Merchat2, Marie Suzan-Monti1, Patrick Forterre3,4, Eugene Koonin5 & Didier Raoult1. Nature 455, 100-104 (4 September 2008)>

When the merged algae and phage like chemical body is destroyed by external factors, some new material come into life with the help of jelly like environmental milieu. These newly occurring bodies are the precursors of fungus, rickettsia and viruses and of course new types of cellular bodies.

In millions of years; the merged bodies of virus like substances and precursors of algae, establish a speedy process that help them to replicate. Extremely primitive form of mitosis, solely based on chemical forces. In order visualize those chemical forces, we may give some examples. Some areas of outer environment gets acidic, some gets basic in nature. Some has more potassium, where some has huge amount of sulfur to make environment acidic. In some areas sodium and chlorine gather to form alkaline environment, on the contrary to other areas form hydrochloric acid with the help of heat coming from vents.

New comets and stones from stardust falling to ocean brings radioactive materials. This radioactivity, together with electrical power made by quartz crystals of Earth's crust, environmental minerals and naturally formed complex chemicals, and acid and base milieu help this soup to produce precursors of DNA and RNA molecules. These molecules -so called codons- chemically established by the carbon molecules of methane. Methane is coming from deeper parts of Earth's crust and reach to bottom of ocean by cracks and vessels. <The search for methane in Earth's mantle http://www.eurekalert.org/features/doe/2005-08/drnl-tsf082205.php>

When the milieu become too crowded, some of the rickettsia like and virus like non-living bodies and these algae is infected so to speak by these organisms. So that they use these cells as a free dining table for eating those molecules that can filtered and pass through its pores, as a house to grow inside and as a bedroom to breed. < Andersson SG, et al. (1998). "The genome sequence of Rickettsia prowazekii and the origin of mitochondria". Nature 396 (6707): 133–40. doi:10.1038/24094. PMID 9823893.> Where one of them was behaving like a parasitic way as that in time helped the host cell to use this parasite as his own organelle we call it now as mitochondria <Emelyanov VV (2003). "Mitochondrial connection to the origin of the eukaryote cell". *Eur J Biochem* **270** (8): 1599–618. doi:10.1046/j.1432-1033.2003.03499.x. PMID 12694174. ><Role of Viruses in Human Evolution. Linda M. Van Blerkom. Yearbook Of Physical Anthropology 46:14–46 (2003). Published online in Wiley InterScience>

In some area on the surface of ocean bottom, algae is invaded by virus like complex molecules and when the cell is filled with these molecules it explodes and all contents spread out the environment and enter other adjacent host cells. <The role played by viruses in the evolution of their hosts: a view based on informational protein phylogenies. Jonathan Filée, Patrick Forterre and Jacqueline Lauren. Research in Microbiology, Volume 154, Issue 4, May 2003, Pages 237-243> It is sure that many chemical interactions

changed the molecules and the invasion and explosion of cell like bubbles soon became a life trend. Soon the virus like molecules became a parasite using algae and fungus like bodies to accumulate its molecules again and again by natural chemical forces. <The virophage as a unique parasite of the giant mimivirus. Bernard La Scola1,6, Christelle Desnues1,6, Isabelle Pagnier1, Catherine Robert1, Lina Barrassi1, Ghislain Fournous1, Michèle Merchat2, Marie Suzan-Monti1, Patrick Forterre3,4, Eugene Koonin5 & Didier Raoult1. Nature 455, 100-104 (4 September 2008)>

BIRTH OF THE DEATH AND LIFE DRIVES

In other words; if you put sodium in chlorine milieu you can not stop molecules to gather as sodium chloride. This is almost the same process. If a complex molecule can start to establish in such a rich environment full of minerals, chemical compositions and large molecules, it is certain that same molecules will be created in this same milieu. This is the logic of production of virus like molecules. After years of natural selection; this host parasite reaction and explosion of host, and interactions of other molecules and bodies soon became a genetic code for the invader. Therefore inside the invader molecule a substance established, a killer DNA codon. Kills the host to be free to continue to replicate and invade others- so to speak. This is the **killing or death force** first enters to primitive cell like interactions. The hosts that is not infected also received these codons through their lipid like walls and in time and start to die by itself (thanatus-mortido). Their death became useful. Old and torn bubbles die and this enable new hosts to establish because the environment is cleaned from those dying hosts and new and fresh ones come into presence using the dead ones molecules. This helped the death molecule to increase and spread to newcomers, the source of **death drive of Sigmund Freud**.

THE CREATION OF SYMBIOTIC BODY

Some other story is happening in the neighbor area. The fungi like bodies is by chance invaded by another complex molecule. This invader was a rickettsia like molecule. This molecule, again by natural chemical forces, like the milieu of the host and stayed there as parasite. One rickettsia like molecule helped induce other new rickettsia like new molecules to establish. When the host milieu is crowded with these molecules they leave the host through its pores by using its wall material, taking a little piece of the wall together. This similar wall enable newly created rickettsia like molecule to enter into another non-infested host. While entering into the new non-infested host the wall of rickettsia like molecule stays intact and its molecules merges with the hosts wall. By time and by natural selection, the host wall now contains some molecular materials left from rickettsia like molecule. This molecule together with previous host wall pieces enters inside the host. This material with the piece of wall together -in millions of years- created mitochondria. <Andersson SG, et al. (1998). "The genome sequence of Rickettsia prowazekii and the origin of mitochondria". Nature 396 (6707): 133–40. doi:10.1038/24094. PMID 9823893.> This mitochondria molecule by chance start to produce more complex molecules, such as more tough and strong walls. This was good both for the host and for the rickettsia like molecule because both could survive longer. The rickettsia like molecule soon start to produce a material (a primitive enzyme molecule) help host to produce more of itself and expel outside the host. Within time and with the help of natural selection became the survival molecule, life molecule or Eros (libido) the **life drive of Sigmund Freud**. Soon the benefit of the resulting molecule became a forcing energy for the cell. The cell continuously forced by this drive to increase in number and size in order to survive.

In the neighboring area around the algae, who was infected by virus like molecules, soon crowded by rickettsia like molecules who carry those survival chemicals and the piece of ex-host wall. The virus tries to kill and spread and on contrary rickettsia try to keep host intact by this survival chemical, by using DNA codon to induce mitochondria to produce this chemical enzyme. Now this host has acquired both death and life instinct together. It is newly found that the genetic material inside a cell can act dualistic according to the needs of the cell.

"< **DNA's split personality :** As anyone who's taken biology 101 will know, DNA stores its information as long strings of codons, each three-base-long codon representing one specific amino acid. But it seems that *Euplotes crassus* must have missed class that day. For this marine microorganism, the codon UGA can code either a cysteine or a selenocysteine, apparently depending on its relevant position on the messenger RNA, say scientists from the University of Nebraska in Lincoln, US, and colleagues. The findings are published in *Science* (DOI: 10.1126/science.1164748), and raise the possibility that more organisms may be using their codons in this way, challenging a core theory of genetics. >"

CREATION OF COMPLEX CELLULAR BODIES

On the surface of ocean floor this population of single non-duplicating hosts (cell precursors) meet remnants of hosts infected or infested. As they explode many non-organic bodies spread around. These non-organic bodies enters these cells and code them to produce the copies of non-organic molecules. In millions of years of time (or maybe in 200 -years who knows), cell like bubbles and bodies may gain the potential to duplicate by mitosis. This became a genetic trend for upcoming cells.

You may imagine through millions of years passing by, helped the formation of a well established cellular organisms. Where some of them produce electrical impulses (like the cells of the deep sea creatures who flash light in the dark), some can move by specialized organelles (like amoeba), some produce chemicals (like botullinum bacteria). Soon these specialized cell colonies gather in a proper milieu and create a symbiotic body, just like the corral reefs we see today on oceanic area. They are composed of many different type of bodies created by the accumulation of specialized cells. <Mucus trap in coral reefs : formation and temporal evolution of particle aggregates caused by coral mucus. Huettel Markus, Wild Christian, Gonelli Sabine. Marine ecology. Progress series. 2006, vol. 307, pp. 69-84.>

Here is the explanation given by the NOAA's Coral Reef Information System's web page about corals. (http://coris.noaa.gov/about/what_are)

"All coral polyps share two basic structural features with other members of their phylum. The first is a gastrovascular cavity that opens at only one end. At the opening to this cavity, commonly called the mouth, food is consumed and some waste products are expelled. A second feature all corals possess is a circle of tentacles, extensions of the body wall that surround the mouth. Tentacles help the coral to capture and ingest plankton for food, clear away debris from the mouth, and act as the animal’s primary means of defense (Barnes, R.D., 1987; Levinton, 1995).

While coral polyps have structurally simple body plans, they possess several distinctive cellular structures. One of these is called a cnidocyte—a type of cell unique to, and characteristic of, all cnidarians. Found throughout the tentacles and epidermis, cnidocytes contain organelles called cnidae, which include nematocysts, a type of stinging cell. Because nematocytes are capable

of delivering powerful, often lethal toxins, they are essential to capturing prey, and facilitate coralline agonistic interactions (Barnes, R.D., 1987).

Most corals, like other cnidarians, contain a symbiotic algae called zooxanthellae, within their gastrodermal cells. The coral provides the algae with a protected environment and the compounds necessary for photosynthesis. These include carbon dioxide, produced by coral respiration, and inorganic nutrients such as nitrates, and phosphates, which are metabolic waste products of the coral. In return, the algae produce oxygen and help the coral to remove wastes. Most importantly, they supply the coral with organic products of photosynthesis. These compounds, including glucose, glycerol, and amino acids, are utilized by the coral as building blocks in the manufacture of proteins, fats, and carbohydrates, as well as the synthesis of calcium carbonate ($CaCO_3$). The mutual exchange of algal photosynthates and cnidarian metabolites is the key to the prodigious biological productivity and limestone-secreting capacity of reef building corals." < Barnes, R.D. 1987. Invertebrate Zoology; Fifth Edition. Fort Worth, TX: Harcourt Brace Jovanovich College Publishers. pp. 92-96, 127-134, 149-162. Barnes, R.S.K. and R.N. Hughes. 1999. An Introduction to Marine Ecology; third edition. Oxford, UK: Blackwell Science Ltd. pp. 117-141. Lalli, C.M. and T.R. Parsons. 1995. Biological Oceanography: An Introduction. Oxford, UK: Butterworth-Heinemann Ltd. pp. 220-233. Levinton, J.S. 1995. Marine Biology: Function, Biodiversity, Ecology. New York: Oxford University Press, Inc. pp. 306-319. Sumich, J.L. 1996. An Introduction to the Biology of Marine Life, sixth edition. Dubuque, IA: Wm. C. Brown. pp. 255-269.>

This body becomes surrounded by polysaccharides and lipid like molecules. The cells inside this body have some properties; like some have tails (like sperms in humans), some have extensions to communicate with its siblings (like neurones in humans), some have special capacity to start electrical impulses when get in touch with light (like retinal cells in human eye), some contain iron (like human erythrocytes), some contracts when electrically excited (like human muscle). Some created skeletons (osteoblasts in human bone). So one can continue to imagine every single cell in one human body as a culture of cells that once lived in the oceans and lakes as independent cellular bodies.

As it continue to happen today, these cells gathered and created a body, found an environment to survive. For millions of years. new cellular organisms and non-organic cells like bodies (today known as viruses, fungi and rickettsia) enter and added their properties to this symbiotic body of cells. Those non-organic bodies help organic ones to evolve by carrying the genetic material to each other. Meiosis and mitosis starts and the living organisms evolve. Also humans evolve carrying those primitive and uncontrollable **death and life drives** of the accumulated cell like bodies, those who were created by ancient phages, fungi, algae and viruses.

DEATH AND LIFE STRUGGLE IN THE CELL

INTERCOMMUNICATION WITH THE BODY

The human body is composed of trillions of cells. They are all specialized on targeted missions. For example; the outer part of brain, the gray zone, contain cells called neuron, who are responsible to react to impulses coming from other cellular bodies. These impulses are either direct electrical stimulation or chemical. The communication of the neuron cell is generally chemical. Some other cells inside the white zone is responsible to supply these cells with nutrients and chemicals. Some cells create a protective environment for these neurons. The vascular area include cells to keep blood cells inside the vessel and protect brain to be invaded by blood cells.

These cells both capable to divide and extend to areas where they are needed. This symbiotic neighborhood is continuous. That is extended up to connect and interact with the cells, for example the ones beneath our foot. This cell is responsible to create electrical impulse and inform brain that there is cold water around the foot, when someone intend to enter sea for swimming. These nerve cells are similar to ones inside the brain. However its neighboring cells are different. The environmental cells supporting neuron, (located beneath the foot) are the connective tissue cells, skin and muscle cells. The cells of connective tissue, skin an muscle, protect and nourish the nerve cell.

The story goes on for every organ and part of the human body. Therefore we may see the organs and parts of the bodies as areas of colonization of different cells, helping each other to survive or die. In a special occurrence one cell may help the adjacent cell to survive, in another time help it to die. The other cell in some instance do the same to the previous cell. To perform this support for survival and death, the cell has to be informed to start mission for the support. This information comes either from outer environment or from inside sources of the cell. For example the oxygen concentration may drop and the cells around blood vessels recognize it is time to start supporting activity. The glucose level or amino acid concentration may drop to lower levels and the pancreas cells may start supporting the others. The internal sodium concentration may rise and kidney cells together with adrenal cells and some of the brain neurons may start supporting other cells to decrease their own intracellular sodium concentration. This support may be directed to adjacent cell or may be done for a cell localized far from the original support, for example, through kidney cells, endocrine organ cells or skin sweat gland cells.

This communication of the cell population is performed either by tactile, or chemo-electrical stimulation. The preferred action is chemo-electrical pathway. It is decisive and sharp and can be blocked by contra-chemical or electrically protective mechanisms. Tactile support, such as filling the area by serum (oedema) is not always easily protected or removed. Therefore the fast and recoverable support to other cells is performed readily by chemical and electrical pathways. That is, cells communicate through energy transfer.

BACK TO ANCIENT TIMES AGAIN

One can imagine how in archaeological era the primitive cells gathering to form an organic symbiotic body, interact with each other and support each other to survive or die.

Let us assume that there are four types of cells living adjacent to each other, inside a sea water milieu. They are vulnerably open to sea water without any outer protective cover. The sea water supply all necessary minerals and protein precursors. The cell groups are open both to nutrition and for potential harm together. They are vulnerable to environment.

Millions of years of viral infections and rickettsial infections and communication with fungi helped them to acquire survival and death. Without knowing its benefits they always try to survive and to die. So they are programmed to do whatever necessary to survive and die. What these cell do not know is what we know. They are all programmed to breed, generate and create new siblings or to say "generations" or "offspring". The continuous cycle of creation and destruction of the primitive cell precursors, by the help of repetition, time passing by, and continuous infections, result in complex cellular organisms. Throughout time passing by, these complex cellular organism's primary performance became their primary obligation or in other words main

mission. That is to duplicate to spread the genes. Breed to spread the genes. Create offspring to transfer the genes.

<< I hypothesize that: The cell precursors are infected by viruses. These infected cells created organic life and the breeding instinct, that is why we can not block this instinct. This instinct comes from every single cell of our body. ">>

The above sampled four types of cells; living together inside the sea water, are habituated near a fungal or algae like bodies attached to a rock. One type of cell started to secrete growth inducing chemical, after it is infected by a rickettsia. This chemical is used by itself and by the adjacent cells. This helped them to divide and grow in size and in number more and more. The adjacent cells were secreting a digestive enzyme which is used to destroy large molecules to smaller ones and help each cell to import them and use for their main purposes. The growth of these chemicals, resulted in a new bigger cell group, and they secreted more digestive enzymes. New cells passing by, by chance, attached to their big bodies. One of this trespassing cell was producing celluloid (a precursor of cellulose). When this trespassing cell dies its cellulose molecules stays on the surface of the original big group of cells. In time the cellulose molecules gather outside the body of five cell types while they were forming a symbiotic body. These five cells meet with some other cells. Those cells include iron inside. The iron is a very bad material and easily destroys DNA and RNA bonds inside the cell. So even they do not include DNA or RNA the cell soon survive by the help of outer chemicals, that were produced by adjacent cells. But the broken parts of these iron containing cells can not be repaired. Iron is now freely moving in the environment inside the cell like bodies. Protein molecules attached to iron element in order to protect cell to be destroyed. This new molecule helped other cells to use its carrying ability of oxygen - carbon dioxide. The carrying capacity is supported by more molecules and oxygen and carbon dioxide transfer became possible. The iron containing cells in time specialized so as to protect its RNA and some organelles for possible repair mechanisms. These iron containing cells specialized to transfer oxygen-carbon dioxide to other cells. They have excellent cell surface so that it does not glue or attach to other cells so it moves freely inside this body of six types of cells. The third type of cell started to create extensions and these extensions chemically find similar cells and connect to them. This connection by time become permanent. They start to warn each other by the electric current. The electric current cause a chemical luminescence. The sparkling from these cells attracts other moving cells who has photo sensitivity and moves towards light. They get near this body and attach to it. They start to move inside this body. They replicate and stayed there. They have ability to destroy other cells who do not have proper outer envelope. Help the new big body of cells free from debris of dead cells. And it goes on and on...

FROM PRIMITIVE CELL TO HUMAN BODY

Within time this complex cellular body start to react to outer environment either by chemical means or by direct movement. The ultimate primitive duplication instinct coming from individual cells soon became the mission of this big body of cells. They are destroyed by environmental forces and torn down to smaller bodies. These smaller bodies could survive longer. Those codes engraved inside the DNA as a timely based experience. When the environment can not keep them intact, they start to duplicate to smaller bodies. This information is also engraved inside as an experience. The experience of dividing to smaller parts by duplication is engraved in all the cell types not only on special cells. Because the cells inside this body were once individual cells as

origin, every single cell engraved the life drive into their genes. This information induced the cell to do its best to live which in general may be called as self protection and survival instincts. The smaller cells who contain the necessary genetic codes of different cells included the basic code of the multicellular body. What we call today, is ovum, sperm and embryonic pluripotent cell.

In this multicellular body sometimes some cells prefer to increase in number and invade the environment. The increased body of invasive cells and their neighbor cells burst due to pressure of the neighbor cells and due to lack of nutritional materials. The environment is filled with many chemicals which some of them is poisonous and destructive to multicellular body's survival. So some cells specialized as sweepers. They clean the environment. The abnormal growing cells are destroyed and only compatible ones survive. They tend to engrave a new code to protect from overgrowth and over duplication. This is called apoptosis or death drive (mortido).

The reason of apoptosis of the organic body is to open a space for the growth of new cells and necessary external organelles. Thus we refer cell death as apoptosis. Which actually is the **death drive**. The marvelous book about the cell topography and function describes the apoptosis as:

"In multicellular organisms, cells that are no longer needed or are a threat to the organism are destroyed by a tightly regulated cell suicide process known as programmed cell death, or apoptosis. Apoptosis is mediated by proteolytic enzymes called caspases, which trigger cell death by cleaving specific proteins in the cytoplasm and nucleus. Caspases exist in all cells as inactive precursors, or procaspases, which are usually activated by cleavage by other caspases, producing a proteolytic caspase cascade. The activation process is initiated by either extracellular or intracellular death signals, which cause intracellular adapted molecules to aggregate and activate procaspases. Caspase activation is regulated by members of the Bcl-2 and IAP protein families. < Molecular Biology of the Cell. Bruce Alberts, Alexander Johnson, Julian Lewis, Martin Raff, Keith Roberts, and Peter Walter. Fourth Edition, Garlandscience. 2002.>"

However caspases induce cell death irreversibly, some other protection mechanisms are established to stop involuntary and/or unnecessary apoptosis. The caspases are mediated by other chemicals. The amount of these outer apoptosis mediating chemicals is dependent on the need of starting the apoptosis. That is, if a new organization is needed inside the multicellular organism, the old or unnecessary cells has to be cleared. The need to change is mediated by outer and inner factors, i.e. lack of nutrients , huge amount of poisonous materials or excessive ultraviolet, or repetitive environmental hazards. These factors increase mediator amount and the death drive sooner or later comes into action resulting in apoptosis of special parts of the multicellular body.

If I have to give example on human body; the of continuous death epidermal cells lying in and out of my foot skin, because of the repetitive friction of my shoe, leads to keratinization on the heel. Another example may be the huge amount of chemicals such as nitrogen peroxides from the intestines, circulating throughout the whole body visiting many organs, to get verification to inform the brain that this is the time to die. When the amount is sufficient to inform the brain, the brain decide to kill the body as a total, which we know as suicidal thoughts due to depression.

The human body wish to kill itself due to apoptotic mediators affecting brain. The basic purpose of this action is to keep the generation and genes more strong. The brain decide to kill itself so that the next generation would be

much more resistant to depression. The depressive type of personality will not breed more. This is a natural selection mechanism coming with us for more than millions of years, together with the cells we acquired from the very first organism. We very well know that the old animals leave the tribe and go to a proper place to die. Defective organs or bodies should be eliminated. Either by nature or by itself. We know this from the elephants, lions, cats and dogs. When they are not capable to survive they leave the habitat and the tribe and find a place to die. They do not eat or drink, just wait to die. Just like the behavior of the depressive patients. Those animal behavior is due to their multi-organ failure. However depression is a disease of a healthy body and created by false information coming to brain. Brain thinks the body is ready to die and can not function. Therefore for the sake of other people in the tribe it has to be eliminated to protect the healthy breed of the upcoming generation. This is a kind of self elimination for the sake of the next generation. If the amount of the apoptotic impulse is enough, the suicide can not be protected because the apoptosis is irrecoverable, so is the death drive. Therefore the death drive has to be taken into consideration throughout the human lifetime with uppermost importance. Its warnings has to be carefully examined and stopped in every ways possible. Otherwise death is inescapable for the human.

DEATH DRIVE AND ITS MISSION

Freud made very valuable comments on death drive and its contrary life drive or Eros <Haz İlkesinin Ötesinde Ben ve Id. Metis Yayınları.>. Freud says that death drive is to kill the organism in its natural pathway. Life drive helps organism to keep the pace against external or internal threatening factors. These threats may result in unexpected danger and death. Death instinct wants the body to die in its natural course. These external threats may result in early death and body has to protect itself from these external factors to die in a normal path. For example if my throat aches I try to protect it from cold and hot. So my tonsils recover and I may continue to live in order to die in my natural life course.

According to Schopenhauer <Hayatın Anlamı, Toplu Eserleri-3, Çeviren: Ahmet Aydoğan, Say Yayınları, İst. 2007> we born and start our lives to die. It is like a slope going downward. If we take the animals as samples they are not aware they are living and they just live. As they are not aware of time and their lives they are also not aware of death. They do not fear of not living, but fear of death. This is an instinctual reaction stemming from every single cell in their body. Brain only reacts according to bodily impulses. If one feet of a lion is hurt by a spine, she hides under a bush. Do not try to hunt. Instead try to protect itself from any minute threats that may come externally. So her brain reacts to information coming from the feet, the cells located under the feet send chemical and tactile information to the brain. If the wound is infected and the microbe invade all body the animal leaves the tribe and try to find a proper place to die. The brain this time responds to the chemicals coming from all body cells. The microbe occupied the blood stream force almost all cells in lion's body to secrete death drive. Lion stays where she is and waits to die, with pain or without pain. If she is in pain she mourns and the members of the tribe mourns with her to show their empathy for her for waiting death. Also by mourning show their appreciation of her self destruction for the sake of the tribe.<Discovery Channel>

If we return to human body, human brain receives millions of death signals coming from body cells, but do not react to them and wait. If the amount is good enough to do something, the necessary action is planned and executed. Though the life instinct now is put into action. Therefore the main driving force is death drive. Life drive is secondary and starts to induce brain a little later than

death drive. This is dangerous in emergency situations. Therefore the body start the life with some preemptive capabilities to protect itself, before life drive starts to act. These are instincts. Fight and flight instincts, now one is added that is stall instinct. After these instinctual prompt and automatic reaction, the death and life drives starts to activate brain to execute.

Why life drive starts later than death drive. Life drive's mission is to cool down and neutralize the bodily reactions activated by the death drive. The death drive activates two basic mechanisms. One is to attack the opponent or external threat to protect the body. This is the action we call sadism or sadistic act. The second one is masochism which is directed towards the body, which helps the body to resist the external stress which is the result of acting sadistically. Masochism help body to endure inner or outer pain.

I may example this by the homo sapiens. Homosapiens man has to go for hunting. In order to hunt he has to activate the death drive. The attacking action comes from sadistic part of death drive. In order to attack the target he has to overcome the obstacles either internally or externally. The internal ones may be the fear of attack, fear of death, lung, ankle, muscle pain and skin pain due to stones and spikes on the ground he runs at. After a long run behind the target he may suffocate to air and may be get hurt due to thorn bush. He has to resist these obstacles and so has to activate death drive towards himself which is masochism or masochistic act. The masochistic act may be physical, emotional or through thinking. This example may also be used to explain why every sadistic act is followed by masochistic act and why every masochistic act preceded by sadism. Both of them are inseparable from one another. If one activates we may expect the other will be activated very soon. If I hit my wife, sooner or later my consciousness will punish myself. If I punish myself with very extreme guilt, sooner or later this will result in a sadistic action against someone or something. Summarizing again, death drive is the leading one and help body to protect itself for survival. Once activated, death drive creates two results: sadism and masochism.

After the death drive is activated, the cells has to cool down itself to recover its basic energy status. To divide and breed cells need that energy. This action is performed by life drive. if life drive's cooling action starts earlier than death drive the human can not execute its fight and flight instincts. Also can not make sex and breed and hunt. They are all needed to be activated by death drive. That is why life drive starts to be active after than death drive. Life drive needs death drive to be activated. If there is no death drive the life drive will not be active and will not exert its effects.

LIFE DRIVE AND ITS MISSION

The life drive's end result is consisted of two parts; one is lust and the other is pleasure. They are inseparable from each other just like the masochism and sadism of death drive. Lust comes from brain and pleasure comes from body senses.

The small cell has to open place for its new generation before dividing into two. If there is plenty of space it does not need its death drive to activate externally. Instead the death drive activates internally with its full effect also using sadistic forces towards itself. This sadistic force that is directed to itself create masochism. This is needed for division the cell components. This is masochistic act needed to torn molecular bodies of internal cellular organs and parts, in order to pass the half of the cellular organs to daughter cells. If the outer area is crowded by other cells the cell then activates its sadistic forces to

kill and clean the environment and open place for its siblings. It produces many chemicals to kill them what we call cellular enzymes or toxins. These toxins kill other cells and open place or the cell to divide and grow in number. If it can not open enough place to divide than the sadistic forces turn inside and kill itself earlier than expected. By this occasion other young parent cells can use its remains for their own development. The time passing through millions of years this basic action becomes the basic death drive.

When the cell activate death drive it is ready to breed. Now the system has to be in equilibrium, which is maintained by life drive. The pleasure part first look inside and outside position and environment. If the received information says everything is alright, then the DNA (brain) of the cell activates and divides. The daughter cells genetically receive the necessary data to survive towards natural death pathway. Here I can not stop myself to ask a question: DOES THIS CELL HAVE A SOUL AND KNOW IT WILL DIE SOMETIME. No! it just does what its genes and nature tells it to do. No questioning and no opposition rises. The cell wish to divide and wish to transfer its genes. The very first molecular forces of very first cell like bodies created this mission, by chance or by spontaneity and by the help of millions of years. Does a raccoon knows it will die and fear of death. Does a raccoon has a soul as we know humans do, no! It performs what has to be done. The death and life drives are used to survive towards natural death. So do humans have a soul? Yes! It is activated when we started to recognize the time perception. The time perception is activated when we start to be aware, memorize and remember. Time perception helps humans to be aware the location, differentiate fast flowing present time and the very tiny past. We are not aware of tiny upcoming future. This help us to be aware that time is passing and time can be fragmented and memorized. Later these tiny information are remembered and compared with each other, That is tiny present is compared with tiny past. Of course our capacity is not enough to record every millisecond but record important events and compare with similar events experienced later.

If we turn back to life drive; the life drive follows death drive. By this effect we can cool our death drive and start to neutralize sadism and masochism. So the life drive covers death drive to neutralize its effect. It may be thought as an eraser. The lust part of life drive erases sadism or we may say sadism activates lust. The pleasure part is activated by masochism and on contrary pleasure part of life drive soothes the masochism.

CONCLUSION

So one can predict what is all 16 pages are about.

In order to have a happy life we need to use death drive effectively, for the sake of enabling life drive. The happiness comes from the equilibrium of death and life drive. If we can not teach ourselves how to control these drives we can not survive to die properly. Every cell in our body is responsible for the release of either death or life drives. So please take care for every cell in your body to be happy. Don't let them accumulate and take control of the brain.

The next issue will evaluate the updated psychological topography, updated from the first descriptions of Freud. This will help us to create a road map for the desired happy human life, and how one can use death and life drives to be happy.

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