

THE FIGHT AGAINST BACTERIA AND VIRUS: A SELF-DESTRUCTING WAR

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The permanent war against biological entities that build, regulate and keep life in our Planet is the most serious symptom, of an insane civilization so far removed from reality that it is heading towards its own self destruction.

The two primary works that constitute the theoretical-philosophical basis of the contemporary occidental way of thinking, of reality, society and life conception, that have been decisive in human relationships, both with each other and with Nature are "The Wealth of Nations" from Adam Smith and Charles Darwin's "On the origin of species by means of natural selection, or the preservation of favoured races in the struggle for life". The conception of nature and society as a battlefield in which abstract strengths, natural selection and the market's invisible hand rule "competitors" destiny, has resulted in the degradation of not only human relationships, but also in those that humans hold with nature, with no precedents in our history that is placing humanity on the brink of ruin. The rift between countries which have been colonized and those European countries which have colonized them is increasing, the dozens of permanent wars (which are always a result of shady economic interests), the unstoppable destruction of the sea and earth environment...can only drive Humanity to a dead end.

The great pharmaceutical industry can be considered, taking this destructive process into consideration, a clear exponent of the application of these principles and their disastrous consequences. The human organism and health are seen as a marketplace, a business objective. This factor, alongside the reductionist and competitive view of the natural phenomenon has resulted in a distortion of the function which is, supposedly, proper to it, and that could constitute an additional means of triggering the catastrophe. A dramatically instructive example of the dangers of this conception is the alarming increase of bacteria resistance to antibiotics, that could become a serious threat for worldwide population, leaving it defenseless to infections (Aleksun M. N. y Levy S. B., 2007). The origin of this problem can be found in the aforementioned concepts, illustrated by the abusive antibiotics which are used to fight the slightest of symptoms, as well as their massive use in commercial activities, such as the fattening up of cattle, and their evident commercial profit motive, but overall, by the consideration of bacteria as pathogens, "competitors" that must be eliminated.

This conception could have been justified by the way in which bacteria were discovered, inexistent before. The fact that their scene entrance was due to their pathogenic aspect, linked to the Darwinist conception of nature according to which, competence is the bridge that joins the gap between all its components,

branded the microorganisms producers of diseases that, heretofore, had to be eliminated. However, recent discoveries about their real character and their fundamental functions in our planet's life have radically transformed the ancient ideas. Bacteria were fundamental to the appearance of life on Earth, creating a suitable atmosphere for life as it is nowadays known by the photosynthesis process (Margulis y Sagan, 1995). They were also responsible for life itself: cells which compose every organism were formed by different kinds of bacteria fusions from which genetic sequences can be identified in actual organisms (Gupta, 2000). Nowadays, they are the main sea, earth and air food chain elements (Howard et al., 2006) and are still essential in life support: *"They purify water, detoxify harmful substances and recycle waste products. They restore carbon dioxide to the air and make the atmosphere's nitrogen available to plants. Without them, continents would be deserts — home to little more than lichen, and not much of that"*. (Gewin, 2006), even inside and outside organisms (in humans their number is ten times higher than their component cells). Most of them are still unknown and their total bio-mass has been calculated to be bigger than vegetal earth bio-mass. This data show evidence of their minority pathogenic character, that is actually due to alterations in their natural running caused by some kind of environmental aggression to which they react interchanging what is known as "Pathogenicity islands" (Brzuszkiewicz et al., 2006), a reaction that, is actually an intensive reproduction to face environmental aggression. In fact, it has been proved that antibiotics are not really antibacterial "weapons" but communication signals that, in natural conditions, are used, among other things, to control their population *"What researchers know about antibiotic-producing microbes comes mainly from studying them in high numbers as pure cultures in the lab—artificial conditions compared with the numbers and diversity found in soil"*. (Mlot, 2009). Despite all that real data it can be proved how pharmaceutical industry keeps searching for "new weapons" to combat bacteria (Pearson, 2006).

Viruses have followed, though somewhat delayed, the same path as bacteria, because of their late discovery due to their small size. Discovered by Stanley in the "tobacco mosaic disease", they were, logically, with a competitive vision of nature, included in the "enemies to eliminate" list. It is obvious that some of them cause diseases, some of them terrible, but, won't the origin of them be due to some process similar to that which actually seems certain in bacteria? Let's see the most recent data concerning that aspect: The estimated number of viruses on Earth is twenty five times higher than bacteria. Their appearance on Earth was simultaneous to bacteria (Woese, 2002) and the part of the eukaryotic cell characteristics not present in bacteria (messenger RNA, lineal chromosomes and the separation of transcription and translation) has been identified to have viral origin (Bell, 2001). The activity of virus in marine and earth environments (Williamson, K. E., Wommack, K. E. y Radosevich, M., 2003; Suttle, C. A., 2005), are, like bacteria's, essential. In the ground, they work as communication elements between bacteria by horizontal genetic transference (Ben Jacob, E., et al, 2005). In the sea they have really noteworthy activities such as these: In the surface of the sea water there are about 10.000 million (average) virus kinds per liter. Their density depends on the richness in water nutrients and in the deepness, but they are still in huge quantities in abyssal waters. Their ecologic role consists of an equilibrium maintenance between the different species that compose marine plankton (and as a consequence, the rest of the food chain's)

and the different kinds of bacteria, destroying them when their number is excessive. As virus are lifeless, and they spread passively, when their specific "hosts" are too plentiful, they (virus) are more susceptible to infect them. Thus they avoid bacteria and algae excesses, whose huge reproductive capacity could cause serious ecologic imbalances, managing to cover great marine surfaces. In the same hand, organic material freed after their hosts destruction, provides nutrients enrichment to water. Their biogeochemical role is that, the sulfurous derivates produced by their activity, contribute... to cloud nucleation! In the same hand, virus are controlled by sun light (mostly by ultraviolet rays) which spoil them, and whose intensity depends on the water depth and the surface organic material density, so all the system is self-regulated. (Fuhrman, 1999). Up to the 80% of virus and bacteria genetic sequences are unknown in any animal or vegetal organism. (Villareal, 2004). According to their activity in organisms, the data which are being obtained make them become the life construction essential elements. Besides the eukaryotic cell characteristics absent in bacteria which have been identified as original from virus, it is more significant the fact that the great majority of animal and vegetal genomes are constituted by endogenous virus which are expressed as constitutive part of them (Britten, R.J., 2004) and mobile elements and repeated sequences, both derived from virus, which have been wrongly considered as "dust DNA" thanks to the "scientist contribution" from Richard Dawkins with his pernicious book "The Selfish Gene" (Sandín, M., 2001; Von Sternberg, R., 2002). Within those contributions, the fundamental homeotic genes, responsible from embryo development, whose disposition in chromosomes as tandem repeated sequences reveals a certain origin in retrotransposons (able to amplify themselves with the genome help), in turn derived from retrovirus (Wagner, G.P. et al., 2003; García-Fernández, J., 2005). One of the most striking functions is the developed by endogenous virus W, whose task consists of the placenta formation, the "syncytio-trophoblast" fusion and the maternal immunosuppression during the pregnancy (Venables et al., 1998; Harris, 1998; Mi et al., 2000; Muir et al., 2004). But the amount, not just of genes but of essential proteins from eukaryotic organisms (specially multi cellular) absent in bacteria and acquired from virus could be endless (Adams y Cory, 1998; Barry y McFadden, 1999; Markine-Goriaynoff et al., 2004; Gabus et al., 2001; Medstrand y Mag, 1998; Jamain et al., 2001), although, occasionally, the same discoverers, following the Darwinist interpretation consider them as "enigmatically emerged" ("randomly") in eukaryotic and acquired from virus (Hughes & Friedman, 2003). These are accused of kidnapping, sabotage or imitators (Markine-Goriaynoff et al., 2004) without taking into consideration that virus in the free state are completely lifeless, and that it is the cell which uses and activates virus components (Cohen, 2008). Because of this, the accusations used to hear, about virus which mutate to evade the host's defenses, turn out to be ridiculous. Mutations are produced during the integration processes in DNA because viral retrotranscriptase is not able to correct "the errors in copying".

To sum up, and independently from the incapability of comprehending the important functions of virus in the evolution and life processes, encouraged by the reductionist and competitive oppressive conception of the dominant ideas in Biology, data are available in already sequenced genomes. Between 90.000 and 300.000 sequences derived from virus have been identified in the human genome. The variability of the numbers is due to its dependence on that, complete virus or

partial sequences derived from virus are whether considered or not. That is to say, they are inside us too, and they carry out indispensable functions for life. But it is also known that endogenous virus can be activated and malignized due to environmental aggressions (Ter-Grigorov, et al., 1997; Gaunt, Ch. y Tracy, S., 1995).

So, despite of the dominant conception of nature, which seems to be wished to be imposed by those who fight against it, describes a sordid battle field swarming with "competitors" which must be eliminated, reality shows a truly complicate nature in which all its components are interconnected and are essential for life maintenance. These are the natural conditions breaking-offs, many of them caused by this reductionist and competitive vision of life phenomenon, which are leading to turn the unbalanced nature into a certain battle field in which we have everything to lose.

The dangerous advance from bacteria resistance to antibiotics can be considered the most clear evidence from competence and market irruption in nature, but there is another consequence from this attitude that could enlighten a clue for how far it could be reached if this way was followed: From 1992 until 1999, the journalist Edward Hooper followed the AIDS appearance trail up to a laboratory in Stanleyville, El Congo, Belgian by that time, in which a scientist team directed by DR. Hilary Koprowski, produced a vaccine against Polio disease using chimpanzee and macaque kidneys as substrate. The test of the active vaccine took place between 1957 and 1960, through a very common method "in those days": the vaccination of more than one million children in several colonies on the area. Children whose life conditions (and so, health conditions) were not the most suitable. In a debate where the journalist exposed his data, Hooper was publically slated by a scientist commission that rejected outright such relationship, although any vaccine samples could be found. It seems understandable that scientists do not even want to imagine that possibility. Since then, rigorous studies have been published relating AIDS origin to African markets in which monkey "meat" was currently sold, or, more recently, "delaying" the appearance date until the XIX century by a supposed "molecular clock" based on virus genetic sequences comparison. Neither Hooper nor Koprowsky did know that all mammals contain endogenous virus that are expressed in lymphocytes and that they are responsible for the maternal immunosuppression during the pregnancy. Nowadays, Koprowsky is one of the scientists who owns more patents within his name.

The barriers between species are a natural obstacle to evade the virus jump from one species to another. Some extreme environmental stress conditions are needed for this to happen. All this takes to the inquiring of many concepts amply assumed, that, as professionally away from the medicine field, I just dare to raise with the experts in question means so that it is them who consider their relevance.

If it is considered that the genetic sequences from endogenous virus and their derivates are involved in embryo development processes (Prabhakar et al., 2008), if they are expressed in all tissues and in many metabolic processes (Sen y Steiner, 2004), immunologic processes (Medstrand y Mag, 1998), Which is the real relationship between viruses and cancer or with "autoimmune" diseases? Are they the cause or the consequence? That is, are there any cancer or arthritis

epidemic or are the affected tissues those which emit viral particles instead (Seifarth et al., 1995)?

If we consider that immunity is a natural phenomenon which has its own processes to guaranty the equilibrium with the environment microorganisms (outside and inside the organism), the artificial introduction of attenuated microorganisms (or parts of them) in the circulatory system jumping the first immunity barrier, could not it produce a natural mechanisms distortion including a possible immune system weakening which could favor the later susceptibility to different diseases?

And, finally, if we consider that the existence in nature of "recombinant viruses" from two different species is so strange that it is possibly inexistent due to the extremely virus specificity, where do those strange viruses with sequences coming from pig, birds and humans come from?

In the hypothetic case that pharmaceutical industry real interests were economic benefits, illness would become a business, but vaccines would be, without any doubt, the best business. In this dissertation it has been shown how far the two main industries, which with pharmaceutical, constitute the markets which "generate" more money in the world: the petroleum and weapon/arms industries. It would be a hard crash for citizens (convinced that they are "under good hands") to find out that the health industry, which apparently intends to look after the health of citizen, it is actually just another sinister money storage machine able to take part in the shady plots of their ranking mates such as, for example, controlling captivating international organizations to smile just on their own interests.

The Nature conception based on the economic and social patterns with random as variation source (opportunities) and competence as changing engine (progress) imposes the necessity of "competitors" (imaginary or created by us) and it is seriously damaging the natural equilibrium which connects all living entities. But Nature has its own rules where everything, including the smallest microorganism and the last molecule, are involved in the maintenance and regulation of life over the Earth and has a wide recovery capacity towards the worst environmental catastrophes. The permanent attack to the essential elements in this regulation, the assault to the "life net", could have consequences that, sorry to say, we will only be able to validate when Nature recovers its equilibrium.

TRANSLATION: Laura Medialdea Marcos

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