

# COVID-19 as a Dispersed Organism: Host Manipulation and Psychosocial Impacts

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## Abstract

We have proposed the concept of dispersed organisms as a way forward to have a deeper understanding of diseases and their eradication and also of evolution of life and of species. Taking COVID-19 as a dispersed organism we investigate its impact in the sociological and psychological realms as a conscious force on humanity to set it on the right track, both individually and collectively. The aftermath of COVID-19 is not going to be a repetition of that of Spanish flu a hundred years back. The implications for mankind are going to be profound. We discuss the well accepted notion of evolution of multicellulars from unicellulars and propose that the case may not be of evolution from pathogens as such, but of building progressively better quality nests by them, which we call the hosts for the pathogens. Infection of host is in reality only nesting for the pathogen. This turns evolutionary hierarchy upside down.

**Keywords:** COVID-19, Dispersed Organism, Multicellularism, Malaria, Niche

## Introduction

The concept of dispersed organism has been proposed by us to have a new way of understanding and treating diseases<sup>1-2</sup>. Loosely bound bacterial colonies exhibit almost multicellular properties just as eusocial species behave as superorganisms<sup>3-5</sup>. Unicellular organisms, by reproducing through budding, fission or conjugation, lead to competition for the available resources. However, when resources deplete, they either go for competitive elimination or for cooperative organization. Competitive multicellulars and cannibals resort to the first option but a cooperative social organization has the distinct advantage of guaranteed survival for the species. In a society of unicellulars *e.g.* a bacterial colony, division of functions is natural since the peripheral ones are in direct contact with environment and have to facilitate the inward and outward transport of materials<sup>6</sup>. This is the origin of quorum sensing<sup>7</sup>. Germ-soma differentiation in the green alga *volvox corteri* has been established by whole RNA transcriptome analysis<sup>8-9</sup>.

In studying eusocialism, the concept of superorganism has been proposed to explain altruistic social behavior<sup>4,5,10</sup>. Genetic relatedness was proposed as a determinant in evolution of eusocialism which was a long-standing problem with Darwinism<sup>11</sup>. In metaevolution the collective psyche connects all the individuals<sup>12</sup>. Such connectedness may be achieved through quantum entanglement of the individual psyches with their shared DNAs forming the substrates for such space-time transcending quantum-entangled communication networks<sup>2</sup>. Quantum entanglement of systems due to shared origins has been discussed earlier<sup>13</sup>. All biomolecules having the common shared tendency for self-proliferation via identical ligand-receptor relations can be similarly entangled from the very beginning with self-proliferation as their common shared characteristic. We have proposed that life as an agent of the principle of disorder (POD) has been there since the big bang ever trying to mold matter in the direction of unrestrained self-proliferation (cancer) through the entire history of the cosmos<sup>14-16</sup>.

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## COVID -19 as dispersed organism

As far as virulence is concerned, the oncovirus

supersedes all other viruses due to its mutational pluripotency and other functional mechanisms inherent in the core of the corresponding globally dispersed organism that is cancer<sup>17-19</sup>. Treating each such disease-causing individual pathogen as one elementary unit of the corresponding globally dispersed organism can help us identify the core and thus tackle the disease at a deeper level<sup>1,2</sup>. A pathogen is an unalienable link in the evolutionary chain of the cosmic process of evolution of life. Its origin lies in an imbalance or disturbance in the realm of the psyche as part of the principle of cosmic disorder as opposed to the principle of cosmic order which stands for the condition of vitality and good health of an organism<sup>14</sup>. The core characters like virulence and pathogenicity are consequences of the psychic make-up of the dispersed organism and the eradication of the disease is to be achieved by successfully employing such psychic implements as would nullify the action of the former<sup>2</sup>. The original virulent core as a destructive principle in the psyche ramifies into myriad traits and each trait becomes a core for specialized organisms with their respective specific roles in the appearance and spread of diseases. This is the reason why we find that for a particular disease, there is often an interlinked chain of organisms which are mutually obligatory, as in case of malaria parasite and their mosquito vectors<sup>20</sup>.

### **Malaria as a dispersed organism**

Surprising insights come up when we analyze the life cycle of the malaria parasite<sup>1</sup>. It develops to sporozoites in the mosquito and waits for it take a blood meal from a vertebrate such as a human. It can reproduce in the human if not killed by the host's immune response within the first 30 min of its entry. Within this time it has to make it to the human liver which stores specific food for its growth and subsequent maturity for reproduction<sup>21-23</sup>. Its reproductive process is thus of an extremely specialized kind and is fraught with every possibility of total failure, but nevertheless it has continued to survive and reproduce to successfully spread malaria. The mosquito does not take the blood meal for quenching its hunger nor does it purposively transmit the parasite. Rather, it is manipulated by the parasite to do that for providing the suitable environment for growth of sporozoites. The host, on its part, wants to avoid or kill the mosquito and has appropriate mechanisms in place within its immune system to kill the parasite but still the parasite propagates

and its purpose of reproduction is assuredly fulfilled!

### **Are hosts mere nests?**

The Darwinian idea that evolution starts with unicellular parasites and that they evolved into more complex multicellular organisms can be reassessed given the pathogenicity, virulence and lethality of the parasites and the susceptibility of the multicellulars<sup>24</sup>. Did they evolve into their so-called higher evolved hosts by gradual natural selection or they just made their nests more and more complex, durable, dynamic and specific in the process of efficient niche construction?

All organisms do niche construction for ensuring their own survival and perpetuation<sup>25-27</sup>. Each unicellular species including viruses is a parasite or pathogen for some species or the other which is not below their evolutionary status. The pathogens seek nothing but their niche in the host to survive and to reproduce. It is most often not the host as such, but the specialized organ/tissue/cells of the host that they recognize as their niche and accordingly try to reach there. The coronaviruses for example need to reach the human respiratory apparatus, the malaria parasites the human liver, the *E. coli* the intestines and so on, because those are their nests for living and reproducing, irrespective of what we think of them and of ourselves. The vector and the host merely serve as parts of the composite biotic niche for the parasite. It is reasonable therefore to propose that the parasite, in the process of its niche construction, leads to the evolution of such traits in the vector and in the host as would guarantee its survival and reproduction<sup>1,20</sup>. This is further supported by the fact that the vector and the host are later evolutes while the parasite is the oldest of the three and hence must have been the fittest, even from purely Darwinian considerations!

### **Psychosocial Impacts of COVID-19**

COVID-19 has forced most of the countries of the world to impose severe restrictions on all human activities leading to reversal of the trends of economic growth and environmental degradation since the industrial revolution. The growth of pollutants in the biosphere has drastically come down as the pandemic continues to graze over all continents. By the end of its current phase of activity, the virus itself will no doubt accumulate too many mutations which will presumably

make it ineffective soon, but will nevertheless enhance its virulence factors in the long run, may be after another hundred years when it makes the next appearance with all necessary preparations. The question is whether the human host will remain unaffected psychologically, sociologically, epigenetically and genetically by passing through this two years' intense all round stress of the pandemic<sup>28-31</sup>.

The very first behavioral change demanded by COVID-19 is social distancing - a continuous awareness of maintenance of a distance of 2-8 meters from other individuals. The long practiced greeting behaviors like hugging, hand-shaking, high fives etc are now dangerous. Even normal exhalations of a COVID positive individual are sufficient to infect another through microscopic droplet transmission.<sup>32</sup> Suppression of normal emotions and feelings will have psycho-biological repercussions. The psyche is closely related to the endocrine system. Imbalances in the secretion of oxytocin, serotonin, glucocorticoids, catecholamines and other hormones will start modulating human behavior possibly leading to over-expression and immune suppression, both of which endanger human life.<sup>33-34</sup>

Fear of contagion will gradually take the form of a psychological complex leading in extreme cases to touch phobia and anthro-phobia. Obsessive compulsive disorders (OCD) such as germaphobia, mysophobia, haphophobia and hypochondria may develop. Being confined in lockdowns and shutdowns for prolonged periods in the era of nuclear and single families, may also lead finally to such mental disorders like agarophobia. Failure of the allopathic medical system to come up with effective treatment or dependable vaccine so far has only increased the stress burden on the people. Anxiety, desperation, exasperation, reactivity and irritability characterizing GADs (Generalized Anxiety Disorders) are already visible in the common man's psyche following the helpless situation in which he is placed<sup>35-37</sup>. Peculiar vectorial behaviors among the infected patients such as human vector mentality (HVM) for intentional spreading of COVID are on the rise.

In the larger social sphere, railway stations, airports, parks, festival sites, religious places, theaters, restaurants, supermarkets, political gatherings where large and happy crowds were the norm can no longer be the same. Now,

there has to be order and organization in gatherings and movements at all places without exception.

The most important events of life which invariably and unavoidably warranted large gatherings of kith and kin such as birth, marriage and death etc. now have to be done with social distancing norms. Celebrations and mournings have changed forever. One can weep and wail over the dead only from a distance, lest one suffers the same fate. Self-imposed and governmental restrictions on movements further add to these unpalatable changes through serial lockdowns, shutdowns, quarantines and containments. Emotions and passions have to become truly private and the so called freedom of expression, its own restrictions.

## Conclusion

The pathogens (viruses and the bacteria) being the oldest and most experienced obviously call the shots in evolution which is the result of niche construction by them. Humans being the latest lack any such expertise and finesse like pathogens in shaping up evolution. But having an identity and selfhood as an individual human being one can strive for one's own evolution by conscious aspiration<sup>28-29</sup>. It seems that morphological evolution having reached its completeness in the *homo sapiens* they have to mold themselves in dimensions that are beyond the physical<sup>12,30-31</sup>.

AIDS made humans learn the value of having more a rational and restrained approach to physical intimacy, while COVID is forcing us to have restraints over emotional expressions in addition<sup>1</sup>. Is there not a teleological reason of gradual movement from passion to emotion and then on to reason lurking behind these epidemics to lead the human beings to higher levels of realization through the dimension of rational restraint of instincts and conscious effort to go beyond them<sup>28-31</sup>? It is difficult to comprehend and predict the genetic mutations through stress-induced epigenetic modifications that COVID-19 would bring in us if it remains in force for around two years as did Spanish flu. We can only hope that it does not coevolve to become resistant to vaccination and does not come back again with higher virulence factors in, say, another hundred years or so which seems to be the period of such pandemics<sup>29-31</sup>.

The other aspect that comes up by a straightforward conceptual extension of the concept of entangled individual life-forms of dispersed organisms is that all life on earth can be considered to be organically connected as an evolving living wholeness. In the same way, life in the whole cosmos in all its variegatedness can be seen as one cosmic life in essence. The blueprint for such a cosmic life as encoded in the cosmic mind has continuously directed the course of all physical evolution of the cosmos and biological evolution on earth, and possibly elsewhere as well, for its own purposes. It gives us the route to future human evolution beyond the physical.

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