

“TALKING POINTS/A NEWSLETTER”. A CUTTING-EDGE APPROACH (as in sharp skies)
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TITE: WHOSE IN CHARGE?: THE HOLOBIONT PERSPECTIVE, MY PERSPECTIVE

WHAT ? There are numerous descriptions of the relationship between microbes and their human co-partners. For simplicity, there are 5 that have appeared in literature and publications over the last 50 years more frequently, more universally. These included the 1, Organ view, 2, the Self, non-self view (immune system), 3, the Superorganism view, 4, the Holobiont view and lastly 5, the Ecosystem view. Each has been an attempt to address the challenge posed by our microbial companions in defining “US”, “who are we”. Historically, they have been used interchangeably and reflected subsets of scientist and often focused on their research and area of interest: medical, environmental, veterinarian, global; it was not until recently did I became aware of the nuances and subtle difference proposed by each one; and these could be unmasked by comparing 1. assumptions, 2. therapeutic applications and 3. Limitations in published comparisons.

I aligned with the Holobiont View, the Holobiome and Hologenome addressing two synbionts, using my “ Culture Plate Gang” puppets, Marco:Polo to explain (<https://globalbugs.com/Career/Culture-Plate-Gang.php>). And actually created a whole website Section entitled “Co-evolution and the Hologenomic Theory” in 2010 in my original website (www.globalbugs.com), that ultimately I renamed “Our Microbiota”. (<http://globalbugs.com/Career/Genomic-Center.php>). It documented the evolution of the Holobiont theme in my teaching to health care professionals, students and an aged population.

“You may be the author of your book, but your microbiology is the editor.!” (This perhaps was my best creation.)

WHY?

ONE, mine has always been medical, given my ongoing 57 year career as a clinical microbiologist, professor and the creation of venues for intervention emphasized by my translational research, student supported; ‘patient care first’. The Holobiont theme is the ultimate in symbiosis, each gaining from the other. It has evolutionary perspectives, addressing the 24 hr cycle and the impact of dark and light, hot and cold, the ‘yin/yang’ very early in creation. Clocks and the first sundial. Who knew.

It also has a history, starting in 1928, as an ant expert, W. Wheeler, described a colony of similar species with high level of organization as a “Superorganism, through 1991, when L. Margulis, in a book chapter described symbiosis of different species acting together, coining them as ‘holobionts’, through 2008, when E Rosenberg and I Zilber-Rosenberg,

independently derived the terms hologneome and Hologneomic Theory of Evolution, to 2015, when S Bordenstein and K R Thomsen outlined the 10 principles of evidence-based reasons for Holobiont and Hologenomes and the Theory of Evolution.

“The holobiont is a federation of civilizations, each with its own clock, yet bound to the same sunrise.”

Recognize this: Microbes have been circling the sun for about 3.5 Billion years, 3.5 billion revolutions, 5 zones of dramatic change, catalyst/selection, while humans, having been here for 300,000 years, 300,000 revolutions around the sun with a relatively stable environment, limited selection.

SECONDLY, it allows me to maximize evolution, co evolution, while promoting a ‘microbe centric’ discussion, helpful in changing the philosophy of “who we are” and “who is in control”; in my view, our microbiota is the ‘host’. Humans are “co-partners” with “dual citizenship,” visualized by size, but not genetic strength. The Holobiont view makes the “invisible, visible” and unmasks the reasonable role of the microbial symbiont as a framework for the explosion of non-communicable diseases and symptoms (NCDs), global wide.

“Microbes inherited humans”, my thoughts.

THIRDLY, In my view, a ‘micro centric’ approach emphasizes that the microbiome is the key to our health. In medical practice, it argues for the Microbiome First Medicine and Dentistry approach, a next generation shift in patient care assessment that aligns with the Holobiont view in patient care; what is the microbial signature of the patient, how does it align with the chief complaint, and what part of the microbial signature is missing, particularly for older patients. Start first with this personal library of information. A microbial fingerprint.

FOURTHLY, it promotes the marriage of two clocks, both circadian, but one very old, ancient, the other very new. In medical practice ‘timing is everything’ and now we can maximize the arrival of a new science to medicine and dentistry, Chronobiology, the study of biological rhythms that realizes certain diseases are best addressed by bringing into synchrony the 24 hr clocks, microbial and human; two civilizations. Now, using a process of Systems Analysis, AI and Chronobiology, I hope to outline how interventions can be timed to improve patient outcome: it is NOT “what” we do, but “when” we do it. “Timing is everything” and the Holobiont approach provides 2 symbionts, with 2 clocks for targets of intervention.

Two clocks, two kingdoms, one earth: “The miracle is that two civilizations learned to keep time together”

LASTLY, it lets me create a new microbiology laboratory, INTERVENTIONAL MICROBIOLOGY, described in Pillar I, highlighting a laboratory focused on the holobiont, not pathogens, thank you Louis Pasteur. Also, in this our new website, the Holobiont Perspective galvanizes the importance of Chronotherapy, specifically Chrono-Dentistry which is featured in Pillar III, with additional information to follow for all 3 pillars.

MY THEME, MOVING FORWARD: "THE FUTURE OF HEALTH HAS ALWAYS BEEN MICROBIAL"

Let me know what you think???

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