

Does it Take Two to Tango? Coming to Grips with COVID-19: A Story of the Guest and the Host

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The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) or coronavirus disease 2019 (COVID-19) has been labeled a “once-in-a-century” pandemic.¹ While various mechanisms have been implemented to curb the spread of COVID-19, history will remember this pandemic for the millions of deaths it caused and its globally unprecedented negative social and economic ramifications. Given the dire circumstances, it appears that the time might be ripe to reflect on and contemplate our outlook on dealing with the vagaries of pandemics, in general.

A changing landscape triggered by such pandemics often requires a change in mindset to better equip ourselves to tackle an ever-evolving reality. In thinking “outside the box,” it seems that there is a necessary shift in mindset. Metaphorically speaking, on the one hand, we have the ‘guest,’ which is the invading pathogen or COVID-19 virus, in this case, and on the other, we have the ‘host’ (the infected or afflicted individual). An important question would be how to engage the two conflicting parties.

The idea of focusing on the ‘guest’ has existed in medical literature for the longest time in the form of the all-encompassing germ theory of disease, which posits that infectious diseases are caused by invasive pathogens, such as parasitic infestations, fungi, bacteria, and viruses.² The foundation of the germ theory of disease owes its origins to the work of Abu Ali Sina (also known as Ibn Sina or Avicenna), who supplanted Galen’s miasma theory that attributed infectious diseases to circulating miasma or ‘bad air’ or pollution. The miasma, according to Jean van Helmont, occurred spontaneously

due to decomposing organic matter.³ However, the existence of miasmas was later demystified by the fathers of microbiology and bacteriology, Louis Pasteur, Robert Koch, and Antonie van Leeuwenhoek.⁴ According to Janes et al,⁵ the germ theory of disease has provided us with a vast and extensive understanding of the “pathogen itself—its molecular machinery, processes of re-assortment and mutation, and how these factors indicate risk for human-to-human transmission.”⁵

Despite its heuristic value, however, thus far, the germ theory is ill-equipped to protect the hosts or their environment from the influx of various pathogens. While quality of life has generally improved for most of the 20th century, this is likely to have stemmed from reducing malnutrition and improved standard of living rather than an advanced understanding and application of germ theory. In this regard, McKeown and Brown⁶ have suggested that the historical decline of major deadly diseases did not owe much to our understanding of the guests. Therefore, infectious diseases continue to contribute significantly to the global burden of morbidity and mortality. With the eradication of smallpox in 1980, the World Health Assembly aspired to achieve health for all by 2000.⁷ Less than three decades into the new century, and it seems that this aspiration has remained largely untenable. Additionally, there are recent indications of the existence of a double-edged sword whereby communicable diseases now concurrently exist with yet another enemy of health, non-communicable diseases.⁸ The double-edged sword hypothesis, according to Al-Mandhari et al,⁹ suggests that a “top-down, professionally-driven and cure-oriented” biomedical healthcare system might

be ill-equipped to withstand the new assortment of healthcare problems.

A paradigm shift in thinking would be required to better tackle the 'guests' and prepare for and handle pandemics effectively. As the famous quote "it takes two to tango" goes, it would take giving both the guest and the host equal attention to handle pandemics of such capacity. Although the conceptual foundation of this approach has been contemplated previously (as exemplified by the work of Claude Bernard's explanation of the concept of 'milieu intérieur' and Walter Cannon's homeostasis), it has received scant attention thereafter in the context of understanding the host. In 1949, the World Health Organization defined health as "a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity".¹⁰ In line with this view, Engel¹¹ advocated for the biopsychosocial model. The biopsychosocial model promulgates the view that communicable or other kinds of disease do not stem from and impact the biological system exclusively. The psychological and social factors would also need to be considered. Thus, the biological, psychological, and social factors are intimately tied to the predisposition, onset, course, and outcomes of ill health. This means that all of these biopsychosocial factors must also be considered when designing intervention and management plans. Both the definition of the World Health Organization and the premise of the biopsychosocial model appear to embrace the idea that it certainly does take two to tango.

It has generally been accepted that the germ theory, through its bottom-up approach, has excelled in shedding light on the intricate nature of the guest.¹² However, there has been no adequate, empirical counterpart evidence on the top-down approach (i.e., the reactivity or behavior of the host). This responsibility to provide such evidence would generally be shouldered by the behavioral sciences.¹³ It is likely that recovery from many health challenges that appear to be marked by dysfunctional biology, further warranting biomedical care, also requires a change in lifestyle, cognition, and emotion. In this regard, it comes as no surprise that our adherence to the biomedical model has borne only a modest amount of success. This could arguably be due to the prevailing tendency to place the traditionally related health beliefs of the biomedical model at the forefront. Consequently, the double-edged sword

of health challenges continues to triumph.¹⁴ We are then left with little recourse on how to heighten compliance, increase social distancing, and overcome vaccine hesitancy. And, as proposed, if it takes two to tango, then the input of behavioral sciences will be essential, if not paramount.

Past pandemics have been shown to shift our outlook and change the course of history altogether. For example, the bubonic plague heralded the Renaissance age, giving rise to the technological and medical revolutions.¹⁵ Germ theory enabled our understanding of the nature of the guest. Further investigation from the side of the behavioral sciences could become the enabler of understanding the 'host'. Some might contend that the behavioral sciences aim to understand pliable or often amorphous phenomena or entities without central features. Still, with input from various sociological and anthropological studies, recent developments in cognitive science have advanced our understanding of the complexity of the host. With a greater allocation of resources for the behavioral sciences, more knowledge of the host could be unraveled. Therefore, when the guest and host start to be understood, accommodated for, and tackled in the context of each other, the hope then remains that the unprecedented backlash caused by an unexpected global pandemic would be a thing of the past.

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