COVID 19 PHYSICAL AND MENTAL HEALTH SURVIVAL KIT

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A rapid response paper compiled as a global pandemic was unfolding:

Corona Virus Disease (COVID 19) basic human survival essentials: Water; Air; Light and Connectivity, as a preventative response in a global pandemic - Maintaining mental and physical clarity and a sense of being interlinked at the centre of a storm.

Bruce, T.A. (2020)

Abstract

A self-isolated researcher working within immersive interactive virtual environment technologies in the context of mental healthcare considers a potential level of powerlessness as experienced by people, in light of a *COVID 19* pandemic sweeping callously through even the most developed and self-supporting societies on Earth. The researcher considers that in periods of crisis some people can become so caught up in atrocities and hardships being faced that they ignore the most basic essentials of human *being* in the world. Preventative measures as what could become a basic toolkit response throughout *COVID 19* are discussed, as what could be within available reach, even to those who are at risk across restricted locations. The researcher experiences a sense of optimism and drive as it is assumed that where a world's population becomes immersed in a crisis, then a chronological grounding of who they are and what their basic fundamental coping mechanisms or available tools might be, could assist them in maintaining valuable perspective around a situation which to some could seem out of their control and starving them of autonomy in moving forard. This paper investigates in three parts what could be considered as basic essentials of being: *water, light* and personal attention to a sense of an *interlinked-ness,* via the maintaining of a motivated outlook against the backdrop of a situation where tens of thousands will experience isolation, alienation and lose their human right to survival in what could become a repeating attack against the world's population, year upon year. What results from this rapidly compiled paper is a consideration that the neglecting or paying attention to the basic essentials could be a difference between remaining with life or without; where a conceptual toolkit could be a future priority across every nation together with an acceptance that every human being is coupled to both one another and its environment.

Keywords: *Water; Light; Interlinked; Negative Ions; Human Connection; Whole System Well-Being; Mental health; Nature Rules*

Introduction

> *He fixed his eyes on the distant hills. He had tried very hard. He had struggled. He had looked to the past and to the future. What did it matter? What had he accomplished?*
>
> Earth Abides, George R. Stewart, 1949: 317

A researcher is reminded that billions of plant life and insects and animals lose their ability to remain alive in their *most complete* form of being [as their dispersed energy may continue in other forms] on Earth each year, where a species called the *human* is considered to have risen not just to the top of the food chain, but with an all dominating role over whatever it wants to control, consume and in many cases callously waste. This feels important to

consider, as a very basic assumption here at the beginning of this paper's rapid discussion is that the *human* has taken their self-instated role as guardian of all creation far too far, where without the equal empowering of more youthful global voices, many of whom not being taken seriously enough, the balance can never become even. The researcher accepts the relative blink of an eye journey of this current human as a species still learning, before being mindful of *impermanence*, as one of the essential doctrines in Buddhism, which teaches that nothing is permanent and desires for or attachments to either causes suffering. The human being is then perhaps excused from its actions, in seemingly displaying no desire whatsoever, nor an attachment, toward an encouraging of nature to exist in equal right to what a domineering species label as *man-kind*. It seems highly evident that man is not.

This paper begins by asking: Where have we been? This, in order to then establish where are we now and where this current *COVID 19* predicament may lead us, as a species. Neil Shubin in his brilliant book: *Your Inner Fish*, reminds us:

> *Looking back through billions of years of change, everything innovative or apparently unique in the history of life is really just old stuff that has been recycled, recombined, repurposed, or otherwise modified for new uses. This is the story of every part of us, from our sense organs to our heads, indeed our entire body plan. What do billions of years of history mean for our lives today? Answers to fundamental questions we face – about the inner workings of our organs and our place in nature – will come from understanding how our bodies and minds have emerged from parts common to other living creatures. I can imagine few things more beautiful or intellectually profound than finding the basis for our humanity, and remedies for many of the ills we suffer, nestled inside some of the most humble creatures that have ever lived on our planet* (Shubin, 2008:201).

Here, Shubin reminds us that everything contained within the picture which the human species relies upon, was contained as part of this exact same picture, pre-human involvement. As humans we have not invented anything so unique as the Earth, but recycled and re-modelled what nature has already supplied, in abundance in many cases, where a human stamp is then attached. From a legal standpoint, nature owns the Intellectual Property (IP) and all any human can reasonably claim is some degree of having user-rights, yet even this knowledge does not dissuade the human from its consideration of ownership and mass over-consumption of anything it can get its hands on and claim; with much of this being provided via a sacrificing of nature's own body, in all its variety of spectacular yet immorally abused form.

This paper now examines one of the most seemingly basic of life forms on Earth, yet one of the most profound and necessary essential in the support of maintaining life. Here also the author considers the importance of acknowledging that a *COVID 19* virus which attacks the airways of a human being has arguably less opportunity to nest and multiply at these locations where a consistent or even

ritualistic intake of fluid, including juices, hot teas and broths, is maintained.

1. **Water**

> *From the point of view of the wellbeing of man and the environment, it is essential that water is good and safe – regardless of whether it is from piped systems or point sources like wells.*
>
> *(*Vuorinen, Juuti, Katko *2007:55)*

If an individual finds themselves challenged in any way, to a point of feeling they are losing their mental or physical grip, upon reality, there are very basic and generally affordable essentials which can allow life to sustain, even in the most imminent of hardship conditions. Water is one of these fundamental survival aids. It can be sourced via natural means from springs, streams and rivers, or in other places via melted snow, provided via a well or a tap, or from bottled sources; also via condensation and precipitation amongst others. A short history and account of the perhaps critical value of water is provided by Gioda who hypothetically asks:

> *Knowing what we do about the history and crucial value of water, can we say that we are thrifty enough with it? Are we helping to preserve its quality? The answer, generally speaking, is no* (1999:48).

Water is an essential commodity, making up to 60 and 75 per cent of the adult and child human bodies respectively, including the brain, heart, lungs, skin, bone and muscles. The Earth's planetary surface is around 71 percent water, where it seems this is an important factor to pay attention to. A research paper by Vuorinen, Juuti and Katko points out that around 10,000 people die every day [the current author was astonished at this figure] due to causes linked to a lacking of safe water and adequate sanitation. They consider:

> *The Greeks and Romans used different methods to improve the quality of the water if it did not satisfy their quality requirements. From written sources and archaeological excavations, we know that using settling tanks, sieves, filters and the boiling of water were methods used during antiquity. At least boiling of water, which was widely recommended by the medical authors during antiquity, would have diminished the biological risks of poor quality water* (2007: 51).

This paper considers the information people have in their own lives and the advice they take on-board themselves. If water, as a readily available substance within many countries, is available, then should society be doing more to truly highlight its benefits across a more vast spectrum? If people are becoming ill periodically, then can heated water especially play any vital role in alleviating this – or would this simply lead to further over-population issues by way of a "culture of water" intake being born and prolonging life too greatly? In short, what are the health benefits of water in a world where Bartram and Cairncross consider this as one of three '*forgotten foundations of health*' (2010:1), which includes also hygiene and sanitation.

During the lead up to the compiling of this rapid paper, the author considered, again as aforementioned, a range of fluids such as tea, broth and water; heated or otherwise as herb or

fruit-infused by limes or lemons. The author makes an assumption that in light of a *COVID 19* virus it is this available substance (at least to a developed nation with palatable water) which has ample properties to assist in keeping a human biological system hydrated and flushing through this same system to reduce potentiality of infection taking control. In early pencilled notebook notes the author wrote:

> *The water molecule is composed of two elements – two hydrogen atoms (H2) and one oxygen atom* (O). The human body uses water in cells, tissues and organs and loses water via breathing, sweating and digestion (Author's notes, 2020).

Whilst adequate hydration in a human being is considered essential for health, Liska, Mah et al. ask why seemingly little attention is paid to the effects of hydration among generally healthy populations. They write:

> *…hydration status is an important aspect for health maintenance… Additional high quality studies are needed to fill current gaps in knowledge and enable us to understand the specifics on the role of hydration in promoting health, as well as to help inform public health recommendations* (2019:24).

These concerns echo discussion from almost a decade earlier, as considered by Popkin, D'Anci and Rosenberg who write:

> *Despite its critical importance in health and nutrition, as noted earlier, the array of available research that serves as a basis for determining requirements for water or fluid intake, or even rational recommendations for populations, is limited compared to most other nutrients. While this deficit may be partly explained by the highly sensitive set of neurophysiological adaptations and adjustments that occur over a large range of fluid intake to protect body hydration and osmolarity, this deficit remains a challenge for the nutrition and public health* (2010: 13-14).

Despite this voiced lacking of available research, information that does exist at least infers the health benefits of water, as pointed out by Howard and Bartram:

> *Domestic water supplies are one of the fundamental requirements for human life. Without water, life cannot be sustained beyond a few days and the lack of access to adequate water supplies leads to the spread of disease. Children bear the greatest health burden associated with poor water and sanitation* (2019:1).

With water, or H2o, being regarded as an essential substance as important to human growth toward any form of self-actualization in life, this paper relates this finding to Maslow's Hierarchy of Needs (Figure 1). Abraham Maslow's theory considers that people are motivated by five individual categories of needs: Physiological; Safety; Love; Esteem; Self-Actualization. It is perhaps worth noting that Maslow grew up as a young man facing hardships such as racism and prejudice against him and did not get along at all with a mother whom he claimed was narcissistic.

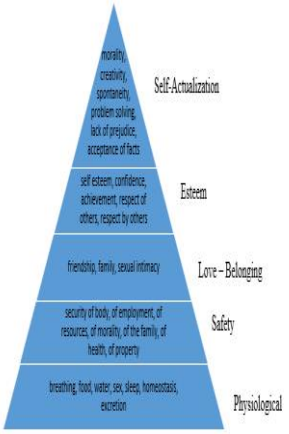

Figure 1: Maslow's Hierarchy of Needs

In light of a global *COVID 19* pandemic, or likewise any form of hardship being faced by an individual who may then lose focus or motivation in relation to the basic human requirements in order to sustain life, this rapid paper considers the effects of water intake on the human brain. A 2008 study conducted by Tomas-Carus et al. showed that exercising in water, as opposed to a sole-focus toward drinking it, was effective in improving both physical and mental functioning, which included measures against anxiety and depression (2008).Figure 2 considers the human body's relationship to water and in this paper we will consider further benefits of beside water and within adjoined proximity of other forms of nature:

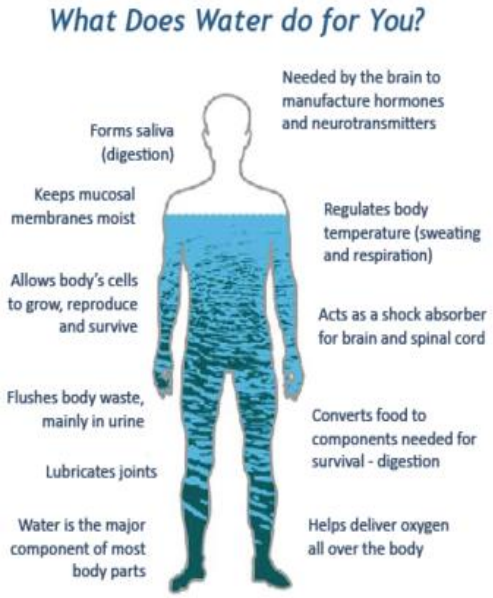

Figure 2: The bodies relationship to water.

Image from USGS website

The author considers here the benefits of people visiting water, such as rivers, lakes and seas, or being in contact with water and similar outdoor locations. Where co-ordinated efforts are being made during *COVID 19* to steer people away from the countryside and beaches, perhaps equally-co-ordinated and strategic efforts could be made in a future similar scenario, to allow a steady stream of individuals (whilst socially distanced) access to locations where the water and air alone could prove to have lasting health benefits. With this consideration it is arguable as to whether isolation promotes inactivity and idle human biological systems, which, as historical proverbial language tells us, can become a devil's playground.

Jiang, Ma and Ramachandran carried out comprehensive reviewing on the effects of Negative Air Ions[1] (NAI's) on humans, animals, microorganisms and plant development.

[1] Negative ions clear the air of airborne allergens such as pollen, mold spores, bacteria and viruses. Negative ions perform this function by attaching themselves to positively charged particles in large numbers and negatively charging those particles

Importantly, from this paper's perspective in relation to mental [or cognitive] health and *COVID 19*, the authors discuss the biological effects of NAI's being related to increasing psychological health and well-being and inhibiting growth of fungi and viruses – whilst additional reports refute this. Jiang, Ma and Ramachandran conclude:

> *Some studies have suggested that NAIs had multiple health benefits on humans/animals, might inhibit the growth and/or kill some of microorganisms and promote plant development, but some of the results need to be further verified* (2018:12).

A further study by Perez, Alexander and Bailey considered the psychological effects of negative air ions and depression and showed from meta-analysis results of five studies that their efforts '*suggested a decreased severity of symptom scores in subjects with exposures to high air ion levels'* (2013:17).

What becomes clear is that the environment itself could be assumed as playing a part in both assisting as well as enhancing the human condition.. Returning to a water-related viewpoint, a study by Pross showed consistent mood worsening in adults during mild dehydration, as characterized by significant impairment of well-being and complaints of fatigue. The author discovers:

> *The link between dehydration and brain functioning has been well established in the field of medicine, particularly in elderly adults and young children. For different reasons, children and the elderly are vulnerable to dehydration and therefore represent a significant part of emergency hospitalizations… these data indicate that mild dehydration differentially affects brain functioning in healthy subjects according to age. Cognitive functions such as attention, memory, or executive functions are impaired in mildly dehydrated schoolchildren. Even if the data are not completely consistent regarding the impacted cognitive functions, the performance of schoolchildren is systematically impaired when hydration levels are manipulated* (2017:30-34).

This paper considers the basic needs of a human being where with mental hardships being faced in an accepting of a sweeping *COVID 19* pandemic, a human being could potentially neglect themselves and their own basic needs. Where water is considered as essential and critical to human life and negative air ions are regarded as having potential like-benefits, this paper now examines the human requirement for light.

2. Light

Human beings give off infrared radiation which is electromagnetic and has a frequency lower than visible light. Light is essential to physical growth as well as mental wellbeing, as Christofferson writes:

> *Preliminary evidence suggests that low light-exposure is associated with diminished health and well-being and it can lead to reduced sleep quality, depressed mood, lack of energy and reduced social relations* (2011: 2).

Light, as with water and air, could easily be taken for granted by societies whose inhabitants are focussed towards their day-to-day focus upon striving to survive and attending

to get jobs done, paying less attention to the fundamental biological needs of themselves. A study by Boyce suggests that human beings could be paying greater attention to the type of light they permit themselves to absorb on a day-to-day basis, where the role of light exposure in relation to human health could focus toward a provision of improved daylighting in buildings. Boyce writes:

> *People typically spend many hours in buildings bathed in the ultraviolet, visible, and infrared radiation produced by natural or electric lighting. This radiation can damage tissue regardless of whether or not it affects the visual and circadian systems (Boyce, 2010:9).*

With so much external space, as well as light, surrounding human beings, this paper considers the numbers of people moving to urban areas as compared to rural, where more than half the world's population live in urban settings. Where COVID 19's pandemic has brought many discussions to the world's table around remaining indoors, this paper considers the value of natural sources of light and access to open spaces in the lives of people who become fixated on being less connected to external environments.

Whether future populations might make use of setting up shop, residentially, industrially or otherwise, in areas which are more remote yet have obvious natural health benefits, is perhaps a question worth pondering. The World Health Organization points out that until the beginning of the 20th century only one in ten people lived in an urbanised area, wheras the percentage is projected to increase to 60 percent in 2030 and to 66 percent by 2050 (WHO, 2020).

This paper considers whether it is a lesser health-focussed option and actually detrimental to the human condition to cram so many individuals into single spaces, rather than making use of the surrounding acreage and dwelling platforms the Earth's biosphere seems to contain. Perhaps a question arising for future philosophical and political debate over-population will be around whether it will be such an issue if everybody spreads out a bit – if *COVID 19* is teaching one thing, it is that people can self-isolate and work remotely and still survive. This in itself could open an array of possibilities for the socio-architectural designs of a new reality picture.

This paper has considered very rapidly the basic needs of a human being where mental hardships are faced and potential exists where a human being may neglect themselves and their own basic needs. Where water, light and air are considered as essential, this paper now considers the human requirement for connectivity, which this paper conceptualises via the term *interlinked*.

3. Interlinked

Lieberman reveals that the human need to connect with others is perhaps even more fundamental than its felt requirement, as a species, to access food and shelter (Lieberman, 2013). Here it might be considered that survival may be essential and instinctually born of a species, but for the human being, achieving this with others offers some description of an essential-beyond-essential requirement. A loneliness and empathy study relating to healthcare professionals conducted by Soler-Gonzalez et al. considers human connectivity as being a key factor in the promoting of health and the prevention of

illness. The authors report: '*In contrast to loneliness, the establishment of satisfactory (also referred to as positive) human connections has healing power'* (2017:2).

Human beings are biological beings, formed as part of an entire system of co-joined reactions, interactions and occurrences taking place in what is understood as being everyday life. But for a human being to accept this at a macro-level, outside of their own conceptual intellectual status or comfort zone, may require a certain leap into the unknown. Furthermore, for an individual human being to accept that they are, arguably, coupled to their surroundings in a very intimate and real way, requires added acceptance that human beings are potentially not who or what they think they are, but so, so much more. The author of *The Biological Mind,* Alan Jasanoff, writes:

> *But the fundamental lesson of neuroscience is that the brain is a biotic organ, embedded in a continuum of natural causes and connections that together contribute to our biological minds. This means that a brain cannot be all there is. To any question about altering or explaining human behaviour there are actually many answers, at levels not only embracing the brain but the body and environment it resides in. In an age in which self-absorption and self-centeredness have reached epidemic proportions and the socially-minded values of previous generations are on the wane, the message that you are not only your brain may be one of the most important lessons science has to teach us. Accepting this message involves rejecting myths about the special soul-like qualities of the brain and understanding how the brain is physiologically coupled to its surroundings. It is only by doing so that we can truly grapple with our place as biological beings in a universe of interrelationships (2018:220).*

At this paper's beginning and throughout it has been considered both where have we, as a species on a planet named Earth, been, and where are we currently at. Now, to end at a potential point of a new beginning, we consider optimistically where we are going. A quite unsettling climate is being experienced right now and through a pandemic, presumed as a nature-born reaction called COVID 19, human beings are faced with decisions which relate to how they choose to regard themselves moving metaphorically in a direction toward a more inviting light. What path is chosen is for each individual to make their own choice in relation to and to ask themselves whether the basics of life are enough worth fighting for to preserve, such as clean air and water and a renewed sense of interlinked-ness, or whether no lessons whatsoever will be learned and the human species will seek to own, exploit, rape, burn and control all; here falling into a toxic cesspit of repeating disillusioned values and a disregard even for its own fellow type of species.

Conclusion

This paper concludes that water, air light and connectivity are essential to human sustainability and wellbeing. In direct relation to an individual's survival during a *COVID 19*

crisis, the paper concludes that adherence to water, air light and connectivity to multiple forms of nature could present itself as a very instant survival toolkit, readily available to many billions of individuals, though, as accepted, perhaps not to every human being on Earth.

Discussion

The researcher started out by considering what basic human requirements might be in an hour of need and confusion, where many beings may neglect these seemingly obvious essentials. Where water, air and light became initial considerations, this paper has also discussed that human being do not forget themselves, in relation to a sense of being interlinked to all other entities on Earth. It is especially considered that at the height of a planet's *COVID 19* virus that a preventative measure could be, before any bodily infection takes route, hot water consumption as a pro-active solution in combatting any ills prior to them arising as afflictions upon the human physical system.

The researcher, as author, has considered stillness, silence and regular attention being paid in exercising the brain and the body, in harmony with the environment, which seems to have resulted in having very little symptoms of what society has labelled as illness, throughout the course of 47 years of life. This could arguably be linked to having good genetic structure or it could be more simply defined as playing by rules of nature, rather than those imposed by a species who consider themselves as above all.

A toolkit

A toolkit can contain tangible items, such as a hammer, a screwdriver and a spirit level. A cognitive toolkit may contain an ability to understand one's basic needs, in accordance to challenges being faced, or hardships endured. Whether an individual will recognise the importance of water, light, open air and a sense of being interlinked, as vital items, is ultimately their own decision.

Question

If you have self-awareness and know who you are and what your basic needs are, in the sense of experiencing level-headedness throughout even the most challenging of situations, can this be enough to allow yourself the valuable sense of space against austerity and anguish and a perspective which will see you survive, again and again?

Author note: *At the point of writing the author has pursued a daily ritual of consuming several cups of water, including heated water infused by Nettle, Echinacea and Turmeric, fresh lemon or hot water by itself. The author's daily exercise plan involves an online Zoom yoga class hosted by an instructor based in Florida; beach running together with weights in the house garden.*

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