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Her Parasites: A poetic ecospiritual perspective of the COVID-19 pandemic and nature's intelligence

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Abstract

In this transdisciplinary perspective, I present my initial ecospiritual thinking about the COVID-19 pandemic in a poem, titled Her Parasites. I identify with other thinkers – both those in science and not – who articulated ecophilosophical musings about the pandemic in various ways, some of whom were met with mockery and censure. In the hope that it will inspire openness and a sense of curiosity, I draw on metaphysical insights from Vedic treatises and the literature on environmental decline, zoonotic epidemiology, health science, animal agriculture, animal ethics, and animal sentience to explain my poem's philosophical and ecological framework. I focus on the scientific knowledge of epidemics caused by viruses that transcend species boundaries, why cross-species hopping occurs, and the nature (and incredible intelligence) of such viruses. I invite readers to consider ancient Vedic principles that articulate the rationale for living harmoniously with other sentient beings and entities. Considering the unseen metaphysical association between the pandemic and animal cruelty explained through the Vedic laws of Karma, I present the possibility that one of the lessons Mother Earth might have wanted the Homo sapiens species to learn from the COVID-19 pandemic is its need to alter its diet. I end with a discussion on the possibility and value of this change. The downplaying or denial of animal sentience (strategies to overcome the psychological discomfort of incongruence between loving animals and eating them, as described in social psychology), is a barrier to this change. However, observed through a Vedic lens, this cognitive dissonance suggests that the Homo sapiens species is innately humane, the realisation of which might hold the key to this dietary change.

Keywords: *Mother Earth; COVID-19; animal cruelty; plant-based diet; ecospiritual; Vedic philosophy*

A poem about Mother Earth written under COVID-19 lockdown, 12 April 2020:

Her parasites

Don't you see
She's healing Herself
She's shedding us off
Her parasites

We set Her on fire
We cut into Her… just for some stupid sapphire
We tarnished Her seas
We wiped out Her trees

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Don't you see
She's freeing Herself
From us
Her parasites

We put a hole in Her ozone
We killed our sibs in our warzones
We fed Her babies with our plastic
Yet we think our tech is so fantastic

Don't you see
She's ridding Herself
From us
Her parasites

We put Her babies in cages
Made Her bear the painful sounds of their heavy trudges
We forced Her babies to have babies
In factories…
Blind to their miseries
We justify, with stupid fripperies
We led them through slaughter lines
Complying with all our so-called guidelines
To feed our greed
We justify, it's in our creed

Don't you see
We were not the only species She hosted
Yet we boasted
we coasted
we tested
… Her boundaries
… counting our salaries

Don't you see
Now we get to be host
Like Her… almost
at our endmost
She's forced us to stop
…with teardrops

Don't you see
It's not about finding a cure
It's Her becoming pure
It's not about discovery
It's simply Her recovery

It's just futural
It's just natural
It's just nurtural
It's just Her…being gestural
Her language…it's transcultural

Don't you see
She is the ultimate
She is compassionate
She'll let us recover
We've got to remember
Her reason
This lesson
Our poison
Our prison
… The taste of our own medicine

We've got to remember
We don't outnumber
We engage in mutiny
…against Her…our authority
But She controls our destiny
It's not about our ingenuity
It's about our susceptibility
…our inferiority
…Her superiority
She gave us our humanity
So, we might show humility

She'll let us recover
But we've got to remember
Our status … Her parasites
Stamped on our mass gravesites

Introduction

In early 2020, along with the rest of the world, I witnessed the rapid and widespread human demise caused by the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). SARS-CoV-2, which originated from either the Huanan wet market or the Wuhan Institute of Virology in China, is the seventh coronavirus that has managed to infect humans (Alwine James et al., 2023; Andersen et al., 2020; Brüssow, 2023; Estola, 1970; Pekar et al., 2022; Worobey et al., 2022; Zapatero Gaviria & Barba Martin, 2023). The disease it caused was named Coronavirus Disease-2019 (COVID-19) and declared a pandemic by the World Health Organization on 11 March 2020. To mitigate COVID-19 spread, countries worldwide implemented mandatory lockdowns and stay-at-home orders.

In the quiet moments of the New Zealand lockdown, my thoughts of nature and feelings about Mother Earth, like a complex mix of hindsight and foresight, transmorphed into seeing

the pandemic as a natural cause-and-effect phenomenon. I wrote down these thoughts in verse form without intent on what I might do with them. Mingled with the satisfaction of having somewhat artistically expressed myself was a feeling of unease about having written words foregrounding the suffering of non-humans amid much grief in the human world. My poem appeared (and still does appear) apathetic towards the human death rate and suffering caused by this pandemic. This seeming indifference reflects my faith in the Oneness principle and call for *sama-darśinah* (equal vision) in the *Bhagavad Gītā* (A.C. Bhaktivedanta Swami Prabhupāda, 2016), which, in this context, can be seen as equivalence in suffering – suffering is the same in all beings, humans and non-humans alike. But my unease was due to an awareness that not all in society hold this as true.

Eventually, I learnt that others had articulated comparable perspectives of the pandemic, though theirs had been phrased more delicately than mine:

> *What if I look at this pandemic from the perspective of Earth? What might our 4.5 billion-year-old planet have to say to the most disruptive of her 8.7 million species right now? I imagined Mother Earth wearing a patient but pained little smile, just like any exasperated parent explaining to her clueless children why they are getting a long-overdue timeout.* Myra Goodman, Award-winning author and founder of Quest for Eternal Sunshine (Goodman, n.d.).

> *In a way, nature is sending us a message with COVID-19. We have pushed nature into a corner, we have encroached on ecosystems. We need to take care of nature.* Inger Andersen, Executive Director of the United Nations Environment Programme (Anderson, 2020).

> *Mother Nature usually follows a natural transformation process to give checkmates to many of the environmental extremities in order to save the planet. … Mother Nature was waiting for a break to revive her individual ecosystems. It seems that social lockdown to combat COVID-19 has given a much awaited break to her for self-regeneration.* Biswaranjan Paital, Zoologist (Paital, 2020, p. 3).

> *Mother Nature appears to be running out of patience with us. I imagine she is saying to us, … I'm sending a lethal virus to remind you of the unitary nature of your consciousness and its inseparability with the natural world. Perhaps these life-and-death conditions will shock you into an awakening.* Larry Dossey, Physician (Dossey, 2020, p. 345).

In a scathing viewpoint on ecophilosophical views and metaphors that emerged during the pandemic, Hammond (2020) remarked how advocates "motivated by an anti-modern – and, in some cases, anti-human – environmentalist outlook" were "hearing voices in their own heads." But do we not all experience thinking voices that are guided by experiences, observations, and learnings?

My poetic expression came from a confluence of ecological understandings, deep biophilia, intuitive and empathetic feelings about non-human beings, and acceptance of certain axiomatic truths. I connected the impacts of the pandemic to my deep-rooted beliefs in the Vedic principle of Oneness with all other beings which is closely connected to the Vedic laws of *Karmā*. In this transdisciplinary perspective, I explain the scientific and philosophical contexts of my poem and invite the world to consider a few what-ifs. What if we accepted Mother Earth as really real? We may feel a heightened sense of gratitude and respect towards Her – she is our host and protector. But what if Mother Earth, like our human mother, is also there to discipline us and correct our wrongdoings? And what if the COVID-19 pandemic

was part of Her corrective mechanism? These may sound like unrealistic propositions to some. After all, what is really real is partly subjective; the human experience is laden with different gradations of reality (Kroner, 1954; Randall, 1920). As observed in quantum physics, science's capacity to define, let alone prove, what is really real in this universe is limited in extent and scope (Merali, 2015; Zukav, 1979). In the *Critique of Pure Reason*, German philosopher, Immanuel Kant presented the idea of transcendental realism – i.e., that there are certain kinds of higher-level "knowledge which transcends the world of the senses, and where experience can neither guide nor correct us" (Kant, 1922, p. 2). What Kant speaks of is metaphysical realism which is essentially unprovable (Heidemann, 2021). In that sense, the scientific mindset's demand for proof then becomes an obstacle to spiritual wisdom about reality. My intent here is not to reopen old ontological debates about reality; rather, I raise the possibility of truths beyond the capacity of material science and our senses, hoping that readers would come with an open mind in considering these what-ifs.

Mother Earth's parasites

In my poem, I refer to *Her*, Mother Earth, as an all-giving, selfless, and compassionate entity who has taken a position as our host for aeons. This unquestioning acceptance of Mother Earth derives from my Vedic convictions – most explicitly described in *Atharva Vēda* (see Bruce, 1862). As Shelley (2021, p. 2) elucidates, "*Bhumi Mata, Putro Eham Prithvya*" in *Atharva Vēda*, is "the oldest and the most evocative environmental invocation and a sworn allegiance of humankind to Mother Earth." *Atharva Vēda* consists of 63 verses devoted to praising Mother Earth (Dwivedi, 1997). For instance, Verse 11 translates to "O Mother Earth! Sacred are thy hills, snowy mountains, and deep forests. … May you be fertile, arable, and nourisher of all. … May you protect us from your anger (natural disasters). And may no one exploit and subjugate your children" (Dwivedi, 1997, p. 29). Mother Earth is thus seen as a provider who is also capable of being angered by the transgressions of her children (Dwivedi, 1997). Verse 56, which translates to "Whether we are in a rural area, in [the] woods, on a battleground or in public meetings … we should always speak graciously about … Mother Earth", emphasises respectfulness in references to Her (Dwivedi, 1997, p. 51). This is a stark contrast to present-day terms such as "natural resources", "natural capital", and "ecosystem services" in the scientific literature conveying an instrumental conception of nature (Antal & Drews, 2015) – as if Mother Earth is there to be of service to us and She is something we can manage.

In the Vedic worldview, while Mother Earth is revered as a sacred entity, humans are not seen as distinct from Her. As explained by sages, the Oneness principle denotes a blurring and removal of the boundaries between the self and others which in turn points to a single Eternal Being, referred to as the Divine Universal Soul, *Pāramātman* or *Brahmān* (God), the realisation of which is the ultimate aim of sādhakas (spiritual aspirants) (Maharishi Mahesh Yogi, 1995; Swami Chidananda, 1999; Swami Krishnananda, 1980; Swami Vivekananda, 2012). Most explicitly, in the *Bhagavad Gītā* (Chapter 10, Verse 20) – *aham ātmā gudākeśa sarva-bhūtāśaya-sthitah* – "the Lord identifies Himself as the spiritual reality in all … creatures" (Swami Chidananda, 1991a, p. 141). In that sense, in the Vēdas, there is no distinction between God, nature, and self (Maharishi Mahesh Yogi, 1995; Swami Chidananda, 1991a).

Akin to Vedic beliefs, Mother Earth is also accepted as really real in many indigenous worldviews (see Bayod, 2020; Chakravorty, 2016; Gill, 1991; Magallanes-Blanco, 2015; Mildon, 2016; Patterson, 1994; Sólon, 2018; Weckert, 2020) – offering a similar unquestioning

acceptance of the intricate spiritual dimensions of the human-environment relationship. For instance, for Native Americans who hold notions of Mother Earth as a goddess, cutting into Earth's surfaces is akin to an actual assault on Her, and such abuse would cause Her to retaliate, resulting in repercussions for the abusers (Gill, 1991). In the Western world, a comparable conception was proposed in the Gaia hypothesis (Lovelock & Margulis, 1974). But presented as a hypothesis, it remains a contested conception among scientists (Baerlocher, 1990; Kirchner, 1989, 2002; Schneider, 1986) though some have connected the dots in articulating the spiritual dimension of Gaia (see Levine, 1993; Singh, 2007). By contrast, Vedic and Indigenous beliefs about Mother Earth are not contested but accepted as axiomatic truths.

I refer to us humans as *Her parasites*. I take solace in the fact that I am not alone in metaphorically labelling the *Homo sapiens* species with such a connotational term. Appalled by the extent of human-caused environmental destruction in the 1990s, the likes of MacDougall (1996) and Hern (1993) described our species as Earth's cancer. If scrutinised, human expansion resembles the proliferation of cancer cells, which seemingly lack an understanding of how their actions undermine their own viability in the long run (MacDougall, 1996). Iterating a similar conception, Shelley (2021) notes how the *Homo sapiens* species seems to have lost its sapience. Humans seem not to have learned from the history of pandemics – evident in the "lack of understanding and respect for Nature's law and the arrogance of not realizing that human health is intricately and inextricably connected to our planet's ecosystem health" (Shelley, 2021, p. 6). This arrogance is also manifested in the parasitic nature of the *Homo sapiens* species in its treatment of its host (Mother Earth) – taking advantage of and gaining from Her without reciprocating.

Shedding us off

She's shedding us off in my poem refers to the mass demise of the *Homo sapiens* species due to COVID-19. Gatti (2020) regarded the pandemic as natural negative feedback indicating that Gaia is sick of us and is making us sick. Considering the history of pandemics, Dasgupta and Crunkhorn (2020, p. 8) note how they "cull the human population and probably maintain the eco balance in this fragile planet". Mother Earth has put up with so much of our abuse. Our transgressions surpass extractions for sustenance and include the most unessential of materials, such as diamonds and sapphire, which have massive environmental and social impacts (see Archuleta, 2016; Duffy, 2005) while feeding the vanity of a few who can afford them. Our capitalist-driven production and consumption include inconceivably stupid products like plastic microbeads. Following the patenting of a skin cleaner containing comminuted plastic synthetic resin in 1972, plastic microbeads steadily replaced perfectly functional natural exfoliants (Hunt et al., 2021; Miraj et al., 2021) leading to ecotoxicological effects on marine life (Gambardella et al., 2018).

There is a vast amount of scientific literature, spanning over a century and a half, that has documented the scale of human destruction of the natural environment, which I need not repeat here – see Marsh (1864) for an earlier account and Goudie (2019) for a more recent one. It suffices to say that *Homo sapiens* remain the only species that has successfully managed to pollute and disrupt every single of Earth's ecosystem, it is the only species that takes more

than it needs, and it is the only species that inflicts pain and suffering on so many other species on a massive scale[2].

On the cruelty of Homo sapiens

I touch on the cruel side of humans in my poem. *Homo sapiens* is also the only species that inflicts stress and death on other species for sports and amusement (e.g., hunting, rodeos, and horse and greyhound racing)[3] in addition to consuming them as food.

There is a long and painful history of cruelty in farming involving billions of non-humans (see Eleonora, 2017; Evans, 2006; Halteman, 2011; Landis-Marinello, 2008; Maerz, 2020; Perry & Brandt, 2007). Attempts to regulate this cruelty have led to the emergence of codes of conduct on animal welfare and laws on humane treatment (Vining, 2007; Woods, 2012) – *so-called guidelines* (in my poem), which may make people feel less guilty while they dine on the flesh of farmed non-human beings. Slaughterhouse practices embed an emotional detachment to the process of killing by constructing the non-human being "as a product and the act of killing as a mode of food production" (McLoughlin, 2019, p. 338). Yes, to some degree, animal welfare codes make the lives of some of these non-humans more bearable before they are slaughtered, but cruel practices remain prevalent, as often evidenced in video recordings and photographs by animal advocacy groups and reporters (see Animals Australia, 2022; PETA, 2023; We Animals Media, 2023). Even in countries that have extensive animal welfare guidelines like New Zealand and Australia, practices that entail immeasurable suffering continue; for instance, forcing sows into narrow farrowing crates, cramming chickens in high-density sheds, and live animal exports where up to 10,000 sheep and cattle endure the trauma of an unnatural journey on ships for as long as 40 days lying on hard decking in crowded compartments (Evans, 2006; Knight, 2020; Larsson & Levitt, 2020). Farming practices in poorly regulated jurisdictions remain horrifically inhumane and heart-wrenching to hear of. In China and Lao PDR, farmed (and illegally caught) sun bears suffer a captive life in poor conditions with tubes permanently implanted in their gallbladders so their bile fluid can be drained out daily (Feng et al., 2009; Livingstone & Shepherd, 2016). Zoo, lab, and circus non-human beings throughout the world endure similar suffering every day of their lives of forced confinement and servitude (Dalziell & Wadiwel, 2016; Doke & Dhawale, 2015; Lever, 1990; Morris, 2021; Singer, 1975).

Even as a child, I was acutely aware of feelings and emotions in non-human beings and assumed it to be common knowledge – another axiomatic truth. To my puzzlement, later in life, I realised that this was not the case. Rather than a fact, it was regarded as a notion you either held or lacked. The puzzled child in me still asks (silently) – can you not see it in their eyes, in the expressions on their faces? Can you not feel it in your hearts? Unfortunately, due to their laryngeal structures, non-human beings will probably never figure out how to speak our language to tell us about their feelings and emotions. On their behalf, I thank the scholars who have and are continuing to generate evidence of feelings, emotions, and personalities among non-human beings (including insects) in natural and farm settings (see Bekoff, 2007;

[2] Yes, when carnivorous species hunt and kill to feed themselves and their offspring, it causes pain and suffering for other species, but nature is so perfectly designed that their lower numbers on top of the food chain mean that the suffering of prey species never occurs at a massive scale.

[3] You are likely to have observed cats appearing cruel when they play with their prey, but you never see them turning the act into an entertainment event for other cats to watch and enjoy.

Broom, 2010; de Vere & Kuczaj Ii, 2016; de Waal, 2011; Ede et al., 2019; Goodall, 1998, 2010; Klobučar & Fisher, 2023; Kret et al., 2022; Marino & Allen, 2017; Panksepp, 2005). Collectively, these scholars point to animal sentience and their capacity to experience stress and suffering. For example, the increase in the percentage of visible eye white among mother cows when separated from their calves is a documented expression of negative feeling as the muscle responsible for lifting the upper eyelid is controlled by the sympathetic nervous system associated with emotion (Marino & Allen, 2017) – the same emotion that might be felt by a human mother facing the loss of a child.

If we could see all life forms with *sama-darśinaḥ*, we might extend our empathy without needing proof of grief in non-humans. Perhaps we might have this unconditional, equal vision if we looked into their eyes (see Figure 1). Male calves are referred to as "by-products" in dairy farms and sold for their flesh at premium prices. With equal vision we might accept the immense suffering of mother cows. We might accept that she instinctively knows that her child is in grave danger when taken away even though she lacks the cognitive capacity to understand the slaughterhouse destination. We might accept the immeasurable suffering of those new-borns – being born, only to be separated from your mother, your sole source of solace, and dragged away terrifyingly to have your life quickly ended. This is a mere glimpse of the extreme suffering cows and other farmed species endure from birth to slaughter.

Figure 1. The beautiful, and deeply expressive eyes of a cow.

Source: [https://www.pexels.com/photo/field-australia-farm-brown-51311/]

These beings also suffer untimely deaths due to human economic reasons. In New Zealand, mass slaughtering of cows due to the *Mycoplasma bovis* disease (introduced through industrial agriculture procedures), included the killing of even healthy cows – a process that the country's leaders announced as a successful, "groundbreaking" disease-stamping-out strategy that other countries might be keen to learn from (see Perry, 2022). For the dairy industry, "empty cows" that no longer have a "production worth" are "obvious culls" (DairyNZ, 2022). I compare these industry references to calves and cows to those of Mahatma Gandhi, whose philosophy was grounded in the Vēdas:

> …*The cow is the purest type of sub-human life. She pleads before us on behalf of the whole of the sub-human species for justice to it at the hands of man, the first among all that lives. She seems to speak to us through her eyes: 'You are not appointed over us to kill us and eat our flesh or otherwise ill-treat us, but to be our friend and guardian.'* (YI, 26-6-1924, p. 214) (Prabhu & Rao, 1960, p. 481).

Mother Earth intended all mammals to have a weaning period. Over 40% of the lactation phase among plant-eating mammals comprises mixed feeding, where the infant relies on both milk and solid food – enabling the mother to reduce energy expenditure while optimising the growth of her offspring (Langer, 2003) – another example of Her perfect system. But the *Homo sapiens* species has chosen a diet that not only excludes its own "weaning" but deprives mother cows the opportunity to recuperate – continuing to milk her until she can no longer give, then eating her – sometimes combining her dead body with her milk (e.g., meat burgers with cheese). The Hindu lacto-vegetarian diet, as described in the *Bhagavad Gītā*, must not be at the cost of the cow's life (Rosen, 2020). Milk, as produced in the current era of intensive farming, does not reflect the principles of *ahimsā* (non-violence or non-injury against all life forms) and thus cannot be considered *sattvic* (pure).

Homo sapiens also extend the "blame game" in human society to non-human beings. The human inhabitants of New Zealand made the choice to introduce non-native species into an environment that nature had not designed for them. Rabbits were introduced in the mid-1800s to stimulate fur and meat trade, and when they became a problem in sheep pastures, stoats, weasels, and ferrets were introduced to control their numbers (Department of Conservation, n.d.). A situation of species imbalance occurred, and these animals are now scornfully referred to as invasive, alien, or pest species and New Zealand (ironically, lauded for its animal protection law) "prides itself on being an international leader in exterminating" them to protect natural ecosystems (Souther, 2016, p. 66). Does this not sound like finger-pointing to deflect the consequences of one's wrongdoings?

In the wake of COVID-19, we saw a similar "blame game" at play with the mass slaughter of innocent non-human beings suspected to be transmitters or hosts of SARS-CoV-2 including bats in China (Lu et al., 2021), mink in Denmark (Frutos & Devaux, 2020), hamsters in Hong Kong (Fantini et al., 2022), and zoo, companion and farmed animals elsewhere (Beirne, 2021). Such mass killing reflects a historical pattern of the "blame game." In 2002, in the advent of the SARS epidemic, 10,000 palm civets and other mammals, such as racoons and badgers, erroneously assumed as transmitters, were mass slaughtered in China (Choo et al., 2020; Watts, 2004). Oblivious of its various, including cruel, activities that lead to zoonoses (transmission of diseases from non-humans to humans), the *Homo sapiens* species punishes other animals instead of reflecting on its wrongdoings – sustaining a cycle of cruelty.

So, if you accepted Mother Earth as really real, would you not say that She *forced us to stop* so we might contemplate on our wrongdoings? Would you not say that this pandemic might be Her way of reducing the size of Her wayward, out-of-control, selfish child to re-establish

balance in the household? Is it not *just natural* for a mother to want harmony between Her children?[4].

Finding a cure

In my poem, I say that this pandemic is *not about finding a cure* but rather about Mother Earth's *recovery*. "Cure" refers to the historical creation of vaccines and other pharmaceutical products to treat zoonotic diseases that we bring on ourselves. In 2020, there was a global rush and competition to produce the first successful COVID-19 vaccine. The "cure" was laden with suffering inflicted on millions of non-human beings in labs (O'Sullivan, 2020; Schwedhelm et al., 2021) and global inequities, with richer countries having the fastest and fullest access to the most effective vaccines (Lie & Miller, 2020; Yamey et al., 2022). The virus, left to spread in unvaccinated populations, seemed to intelligently mutate and remerge as new immune-evasive variants (Asundi et al., 2021; Ferré et al., 2022; Haque & Pant, 2022; Hardin & Xiao, 2022). Would this not be another one of Mother Earth's lessons that the human species is yet to learn – i.e., that Her highly intelligent natural systems are superior to our technical fixes no matter how innovative.

What if it was *just Her being gestural* and Her underlying message was this: "It's not about creating yet another cure for yet another wound you inflicted on yourself, you silly child. Rather, I'm giving you a chance to self-reflect as a species and realise and admit that you are the root cause of your wounds". COVID-19 is not unprecedented; it is the most recent among a series of zoonotically-transmitted diseases (direct or otherwise). To name a few, zoonotic outbreaks were caused by the Nipah virus in 1998, SARS-CoV in 2002, MERS-CoV in 2012, and Ebola virus in 2014 (Littleton et al., 2022; Weiss & Sankaran, 2022). Zoonotic outbreaks can be traced back to human-caused disruptions to natural habitats; intensive livestock farming; hunting; wildlife farming and trade; and climate change (Arora & Mishra, 2020; Blattner, 2020; Bonilla-Aldana et al., 2020; Breithaupt, 2003; Jones et al., 2013; Jowell & Barry, 2020; Lymbery, 2020; O'Callaghan-Gordo & Antó, 2020; Rohr et al., 2019; Wiebers & Feigin, 2020; Wolfe et al., 2005; Zumla et al., 2016). Uncontrolled population growth, rapid dispersion, and concentrated living, then create ideal conditions for pandemics (Gatti, 2020). We, *Homo sapiens*, have repeatedly facilitated these viruses' transmissions.

Her superiority

Her superiority (as expressed in my poem) is evident in Her highly intelligent natural systems. Biologists, ecologists, and ecosystem scientists continue to discover new and astonishing aspects of the natural world, and there are countless examples of flawless biological mechanisms, the intricacies of which are so complex that it defies human capacity to decipher. Viruses are one of Mother Earth's incredibly intelligent systems. Having the planet's most profuse genetic sequences, viruses have the competency "to edit the genetic code in a manner coherent with the rules of molecular syntax (Chargaff's rules), pragmatics (context) and semantics (content)" (Witzany, 2012, p. vii).

Viruses' interaction with their hosts (cellular organisms, including humans) appears parasitic. They infiltrate the host cell, exploit cellular resources for creating new viruses "and then

[4] To understand this metaphor, you would need to view each species as a single unit. In this sense, Mother Earth is reducing the size of one of Her children (not killing the child completely – which most human mothers would not do simply to establish household harmony).

sacrifice (or damage) their temporary slaves in order to escape the scene of crime" (Jalasvuori, 2012, p. 6). They are known to use highly intelligent mechanisms to adapt to and manipulate their hosts (Lieff, 2012; Marie & Gordon, 2023). For instance, the rabies *lyssavirus* targets specific parts of its host's brain to induce paranoia which leads to aggression that helps facilitate its transmission – as the likelihood of its host attacking and biting other potential hosts increases (Fisher et al., 2018; Marie & Gordon, 2023). More recently, scientists examining the nature of SARS-CoV-2's interactions with its host describe its intelligent evasion strategies including inhibiting, mirroring, and altering the host's microRNAs (Hardin & Xiao, 2022). Most biologists regard the virus as the most "optimized vehicle to propagate a nucleic acid molecule at the expense of a cellular host, an ultimate parasite at the frontier of (or beyond) the living world" (Claverie & Abergel, 2012, p. 187). This bad reputation of viruses is a highly biased and egocentric viewpoint of the *Homo sapiens* species – this might be what Mother Nature would say if we understood Her gestural language.

Mother Earth's intelligent use of pandemics becomes apparent when we contemplate the process of a virus eliminating the dominating population observed in phage biology and extrapolate this to the planetary ecosystem. As Brüssow (2012, p. 245) explains, viruses are "essential agents of life" if we understand – firstly, how "host species use their viruses to defend their ecological position against intruders" and secondly, the phenomenon of "killing the winning population" where phage infections seek to re-balance bacterial species diversity. In long-established virus-host relationships, viruses coexist with their hosts causing mildly symptomatic infections or asymptomatic infections such as in most virus-bat relationships. A host with a pre-established relationship with an adapted and domesticated virus could use this virus as a weapon to defend its territory against trespassers, for whom the virus is a new and deadly pathogen they have not yet learned to live with. *Homo sapiens*, the most "winning" species in the biosphere, take over an ever-increasing number of niches and, by altering the ecological framework, gets itself into a viral crossfire. This, then, results in epidemics and pandemics. From an evolutionary perspective, viral crossfires could simply be a mechanism for sustaining biological diversity and re-establishing equilibria – what might be referred to as ecological logic to prevent ecosystem monopolisation by a single dominant species. A grim projection of this hypothesis suggests that we could witness an increase in viral accidents unless we refrain from interfering with the many other species that compete with us for survival and afford them their ecological niche. From this perspective, "viruses might indeed be essential and constructive elements of life", even if we perceive them as destructive threats from our human-centric standpoint (Brüssow, 2012, p. 263).

While Brüssow's (2012) hypothesis on viruses as built-in mechanisms to maintain ecological balance may remain a theory in the scientific world, from a Vedic view, such virus intelligence is illustrative of Mother Earth's superior and judicious natural system to maintain the equilibrium between us and other beings whom we share Her space with.

Her lesson

My ecophilosophical perspective is that one of the main things Mother Earth was trying to tell us through this pandemic was about our cruel treatment of other beings (who She sees as our siblings) and the need to alter our diet. This unseen link between the pandemic and animal

cruelty can only be explained through the Vedic laws of *Karmā*[5]. In the Vēdas, *ahiṃsā*, is an essential virtue for spiritual evolution and killing animals for food is regarded as a great sin that leads to a great karmic burden (Swami Sivananda, 1995).

> *Every fish, fowl, beast and insect is a divine child of the Divine Mother. … All life is sacred. Taking of life is sin. If murder of man is a crime against the law, the murder of [voiceless] beasts is a crime against Dharma. … It will only bring the inevitable result in the form of much suffering.* (Swami Chidananda, 1991b).

My reference to *karmā* is focused on the phenomenon of *collective karmā*, which is *group causation* (the collective action of a community and group culpability) causing *group retribution* which may include natural disasters and catastrophes that cause mass suffering (Krishan, 1989).

The initial association of SARS-CoV-2 with the wet market in Huanan, China, spotlighted the cruelty of *Homo sapiens*. Evidence of the suffering of 38 non-human species was revealed through a survey of 17 shops in Wuhan (including seven located in the Huanan seafood market) that were selling live wildlife for consumption (as food or pets) just prior to the pandemic (Xiao et al., 2021). Almost all were stored in cages stacked one on top of the other and kept in poor sanitary conditions (Xiao et al., 2021). Wet markets or live markets exist in many other countries including in the United States (Tobias & Morrison, 2021). In jurisdictions without regulations to curb inhumane storage and slaughter practices, suffering is intensified to incomprehensible levels (Lu et al., 2013; Whitfort, 2009). Culinary and dining practices that include boiling or eating non-human beings while they are still alive continue to be a norm in some societies (Tobias & Morrison, 2021).

Perhaps the collective *karmic* load of our cruelty to other species reached a tipping point. Hence, Her lesson repeated, but this time on a scale that might have made us stop, take stock, and pay attention. I did not stand alone with this perspective. Based on the Vedic laws of *Karmā* and *Pāramātman*, Van Zeebroeck (2021) took the position that the COVID-19 pandemic and resultant human suffering is a sign of *karmic* repercussions attributable to animal cruelty. In an earlier article, Benatar (2007) saw human suffering from epidemics and pandemics as a consequence of animal cruelty (though he did not state it as a *karmic* consequence).

Alas, even at the scale of the COVID-19 pandemic, Mother Earth's lesson seems yet to be learned. While the United Nations Environment Programme state that increased demand for animal protein and agricultural intensification are primary drivers of zoonotic diseases, it only went as far as recommending incentives to improve "management practices to control unsustainable agricultural practice, [and] wildlife consumption and trade" as among measures for preventing the next zoonotic pandemic (UNEP & ILRI, 2020, p. 53). Some scientists argued for shifts away from a meat-based diet considering the risk of more zoonotic pandemics (Bernstein & Dutkiewicz, 2021; Reddy & Saier, 2020). While COVID-19 caused

[5] The law of *Karmā* is, in a way, simple – we (not God) create our fate, be it good or bad. We simply become the victims of our ignorance or disregard of the spiritual and natural laws that govern existence. In that sense, the Vedic laws of *Karmā* are similar to the natural law of cause and effect, but the doctrine of *Karmā* is more complex in that other factors, such as intention, come into play, and the production of effects is not restricted to the present or just one life span (Reichenbach, 1988). *Karmā* is generated not only through actions but also through thoughts and utterances (Swami Sivananda, 1995, 1997). Its consequences include not only appropriate effects but also appropriate rebirths in human, animal or plant forms or more evolved forms as Devas in astral planes (Swami Sivananda, 1995, 1997). Hence, *karmā* is not taken lightly by sādhakas seeking to end the birth-death-birth cycle and experience the true nature of existence, i.e., the single Eternal Being or *Brahmān*.

some to shift to plant-based alternatives and diets (Aggarwal et al., 2021; Attwood & Hajat, 2020; Zhao et al., 2023), others remain resistant to the idea of a meat-free diet as a solution (Dhont et al., 2021). Some changes to regulations on wet markets occurred (Xiao et al., 2021), but hardly enough to guarantee the prevention of the next mega pandemic. The world seems to have returned to a business-as-usual approach to animal consumption.

The scientific evidence pointing to the risk of zoonotic disease through wet markets, life markets, bushmeat, intensive farming, and wildlife–livestock interactions has been stated in studies over and over again (see FAO et al., 2004; Galindo-González, 2022; Greger, 2007; Jones et al., 2013; Judson & Rabinowitz, 2021; Karesh et al., 2012; Marchese & Hovorka, 2022; Morse et al., 2012; Peros et al., 2021; Piret & Boivin, 2021; Slingenbergh et al., 2004; Woo et al., 2006). Following the SARS outbreak in 2003, backed by the scientific evidence at that time, Webster (2004, p. 234) questioned: "Will SARS reappear? … Will the virus re-emerge from wet markets or from laboratories working with SARS CoV …?". Well, SARS-CoV did reappear as SARS-CoV-2.

We might choose to deny that Mother Earth is really real, and that She offered some important lessons through the COVID-19 pandemic. We might choose to continue with our self-centred, cruel ways. And Mother Earth will continue subjecting us to further, more advanced lessons, until we learn. And the digging of mass graves to accommodate COVID-19 deaths we witnessed (Zavattaro, 2020) might become a norm as pandemics become a norm.

Possibilities, resistances, and hope

But what if we took heed of Her instructions now and stopped consuming our non-human siblings? A plant-based diet can help prevent future zoonotic epidemics and pandemics (Benatar, 2007; Bernstein & Dutkiewicz, 2021; Jodalli et al., 2020; Reddy & Saier, 2020; Sandhu et al., 2021). Phytonoses, the disease risk of some plant pathogens, exists (Dinu et al., 2017; Kim et al., 2020; van der Riet, 1997; van Overbeek et al., 2014; Vidaver et al., 2016). However, we hardly hear of it because outbreaks attributed to plant pathogens are small in quantity, frequency, and scale.

A plant-based diet offers a range of health and environmental benefits, including strengthening the human immune system, mitigating obesity, reducing non-communicable disease risk, reducing antimicrobial resistance risk, and lowering greenhouse gas emissions and land footprint (Aleksandrowicz et al., 2016; Bernstein & Dutkiewicz, 2021; Fresán & Sabaté, 2019; Gibbs & Cappuccio, 2022; Jodalli et al., 2020; Joyce et al., 2012; Laroche et al., 2020; Mann, 2020; Sandhu et al., 2021; Termannsen et al., 2022; Wegner et al., 2022; Westhoek et al., 2014; Wiebers & Feigin, 2020; Xu et al., 2021). Astonishingly, the *Homo sapiens* species uses 46% of Earth's habitable land for agriculture, although just 1% for its dwellings and infrastructure (Ritchie, 2019). What's more astonishing is that 83% of that agricultural land is used for animal-based agriculture, which contributes just 18% to the global calorie supply and 37% to the global protein supply (Poore & Nemecek, 2018). Most prominently, as shown in a comprehensive analysis of food-related environmental impacts, even the lowest-impact animal products exceeded vegetable substitutes in terms of greenhouse gas emissions, eutrophication, and often also land use (Poore & Nemecek, 2018).

Recent studies have identified associations between meat consumption and aggression (Sachdeva et al., 2018; Taft et al., 2023). On the other hand, studies have shown that concern

for and empathy towards animals is positively associated with concern for and empathy towards humans (see Eleonora, 2017). Hence, a plant-based diet could help reduce violence in human society if broadly embraced. A shift away from a meat-based diet also removes the rarely acknowledged empathetic suffering of slaughterhouse workers (Baran et al., 2016). Therefore, shifting to a plant-based diet has enormous potential for reducing climate change impacts and is commonsensical from both an ecological and social standpoint.

However, accepting a plant-based diet will not be easy as it needs to be preceded by changes to our thinking of other sentient beings and removing some psychosocial barriers. Several studies have explained the paradox of why people can simultaneously be animal lovers and consumers (Loughnan et al., 2014; Loughnan et al., 2012; Modlinska & Pisula, 2018; Piazza, 2019). Meat eaters have developed strategies and defence mechanisms to overcome the psychological discomfort of cognitive dissonance experienced when one's true values and feelings are incongruent with one's actions. These strategies include the denial of mind, mental capacity, and mental states in animals typically regarded as food and the denial that they can experience suffering and human-like emotions (Bastian et al., 2012; Bilewicz et al., 2011; Bratanova et al., 2011; Loughnan et al., 2012; Loughnan et al., 2010). Unlike vegetarians, meat eaters believed pigs had less emotional capacity than dogs (Bilewicz et al., 2011). A belief that humans are superior to animals also serves to justify meat consumption (Dhont & Hodson, 2014; Rothgerber, 2013; Weber & Kollmayer, 2022). Additionally, justifications such as meat eating is natural, normal, necessary, and nice help overcome cognitive dissonance (Piazza et al., 2015; Rothgerber, 2013).

These dissonance-reducing strategies that either downplay or deny animal sentience result in indifference towards and moral disengagement from meat consumption (Bastian et al., 2012; Bilewicz et al., 2011; Loughnan et al., 2012; Piazza, 2019; Weber & Kollmayer, 2022) that may inadvertently be passed on to children. One study reported that some mothers believed in ethical eating and the importance of children's knowledge about food origin but at the same time felt the need to shield their children from the discomforting truth about animal slaughter (Cairns & Johnston, 2018). Animal-based food advertisement help to uphold this protective wall. Images of animals in animal-based food commercials do not resemble the animals in any way – offering "the ultimate in disassociation: consumers not only bear no responsibility for killing animals for food" but there is also little to remind them that their sustenance is derived from an animal source (Grauerholz, 2007, pp. 347-348).

Extrapolating from these studies, one may propose that a mass cognitive dissonance may be possible – one that is causing the seeking of justifications for meat-eating and upholding of a shared social delusion that meat is a necessity for human health. A systematic review by the Food and Agriculture Organisation of the United Nations (FAO, 2023) highlighting the essentiality of an animal-based diet (including wildlife consumption) downplayed the value of plant-based meat alternatives. A critical examination of the FAO review suggests, for lack of a better word, an unconscious bias. Firstly, the description of a handful of studies on plant-based and cell-based meat alternatives to highlight their nutritional deficiencies and quality in a systematic review in which the search protocols did not include such plant-based foods is misleading. Secondly, the framing of the few selected studies appears to cast doubt not only on the environmental and health benefits of meat alternatives but also on the ethical aspects in the case of cell-based meat while disregarding the ethics of real animal consumption. The report neither considered nor discussed the ethical aspects of animal farming, aside from a

single instance where it stated that policy recommendations on terrestrial animal food source should be based on public health and environmental and socio-economic concerns "while accounting for emerging ethical concerns such as animal welfare" (p. 117). Thirdly, the review neglected to consider the value of traditional vegetarian or vegan diets (i.e., one that does not necessarily include or require food that looks or tastes like meat), which have a longer history of research evidence (see, for example, Gandhi, 1949). General public readers unfamiliar with the procedures of a systematic review (who might skip the methods section) would be left with the impression that a massive review was undertaken by scientists representing a reputable international organisation, and the results are that eating real meat is better for health. What better way to overcome the cognitive dissonance of loving animals but eating them anyway?

International bodies and government agencies (even those in charge of human health and environmental protection) may stay clear of stating the plant-based diet as a solution because of not wanting to be seen as dictating what the public should or should not eat. But their reluctance could also be due to an unconscious cognitive dissonance held by their representatives whose diets might include meat. Or perhaps, an awareness of the possible backlash from a society wanting to maintain its protective wall against that cognitive dissonance. Something all-to-familiar to vegans and vegetarians. Given that meat eaters react defensively to the subject of morality and ethics in dietary choice, vegans and vegetarians have learned to not bring up these topics in social settings to avoid being met with hostility and ostracised (Greenebaum, 2012).

Still, there is hope for change – because failure to act in the interest of the animals we eat is not due to a lack of empathy but an inability to let our compassion guide our thoughts because of the unconscious psychological strategies we use to neutralise the ethical dissonance associated with meat consumption (Piazza, 2019).

Concluding thoughts

Even if a mass shift to a plant-based diet occurred, it wouldn't be the end of cruelty to other beings. The current pesticide-dependent industrial agriculture that entails the mass killing of insects (including integral species like bees) and other living beings contain a degree of *karmic* load. However, recognising and acknowledging the sentience of insect species and the essentiality of their ethical treatment may take longer to occur in human society (Klobučar & Fisher, 2023; Tobias & Morrison, 2021). We could, however, at least end the worst of the abuses first, and we might naturally learn to extend our compassion to these smaller living beings. The same may be said about our morphologically dissimilar siblings living underwater.

Perhaps this dietary change needs to be preceded by an acceptance of Mother Earth and respect for Her – which has been proposed in several ways and is already the case in some societies. But accepting other Earthly beings as our siblings would require changes in how we think about existence; it requires considering the physical, biological, and ecological sciences alongside the metaphysical aspects of life. The phrase, *She gave us our humanity, so we might show humility*, in my poem stresses that this transformation requires humbleness in accepting that not everything is evident through our senses – that there are unseen connections between actions and consequences. It requires rethinking "our identity in a human and more-than-human world" (Karpouzou & Zampaki, 2022, p. 1) and transitioning to an ecologically redefined humanism that overcomes the detrimental instrumentalization and objectification

of nature and extends equality to non-human beings (Zapf, 2022). It also requires deep awareness of our own humanity – that the suffering of others, including dissimilar others, is emotionally disturbing, and it is in our true nature NOT to want to contribute to that suffering. The very existence of cognitive dissonance associated with meat eating is evidence that humans are NOT innately cruel but rather innately humane. The realisation of this true nature requires a spiritual evolution of the *Homo sapiens* species. And this evolution, which is a realisation of our "radiant divine nature", can occur through deep introspection or meditation (Maharishi Mahesh Yogi, 1995; Swami Chidananda, 1991a, p. 4; Swami Sivananda, 1999) or intellectual enquiry into the nature of existence (Swami Vivekananda, 2011). Vedic knowledge is universal and timeless and directly accessible to anyone through transcending the human mind (Maharishi Mahesh Yogi, 1995; Swami Chidananda, 1991a).

The COVID-19 pandemic caused much suffering for the *Homo sapiens* species. But, suffering holds within it the spiritual force that can awaken us to our true identity and humaneness – it heightens our "ability to be compassionate" and the desire "to ameliorate the sorrows and troubles of others" (Swami Chidananda, 1991a, p. 4). *She'll let us recover*, in my poem, refers to Mother Nature's infinite compassion described in Vedic philosophy:

> *There is no kindness than the kindness of nature, which only moves one way to bring fulfillment of evolution and life to all these things in their states of evolution, under all circumstances. When a man, because of some misdeeds, seems to be punished by nature and suffers for it, this is also in the manifestation of the kindness and helpfulness of nature.* (Maharishi Mahesh Yogi, 1995, pp. 93-94).

In other words, it is Her being *nurtural*. She will continue giving us opportunities to evolve because She loves us and wants us to evolve. Lest we forget, Her compassionate lesson and our status as Her parasites stamped on our mass pandemic gravesites.

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References

A.C. Bhaktivedanta Swami Prabhupāda. (2016). *Bhagavad Gītā as it is* (2 ed.). The Bhaktivedanta Book Trust.

Aggarwal, A., Gupta, R., Rawat, S., Upreti, K., Tiwari, B., Kumari, R., & Kukreti, A. (2021). Understanding of various diet preferences and cognizance about zoonotic diseases. *International Journal of Health Sciences and Research 11*(4), 255-262. https://doi.org/10.52403/ijhsr.20210430

Aleksandrowicz, L., Green, R., Joy, E. J. M., Smith, P., & Haines, A. (2016). The impacts of dietary change on greenhouse gas emissions, land use, water use, and health: A systematic review. *PLOS ONE, 11*(11), 1-16. https://doi.org/10.1371/journal.pone.0165797

Alwine James, C., Casadevall, A., Enquist Lynn, W., Goodrum Felicia, D., & Imperiale Michael, J. (2023). A critical analysis of the evidence for the SARS-CoV-2 origin hypotheses. *Journal of Virology, 0*(0), e00365-00323. https://doi.org/10.1128/jvi.00365-23

Andersen, K. G., Rambaut, A., Lipkin, W. I., Holmes, E. C., & Garry, R. F. (2020). The proximal origin of SARS-CoV-2. *Nature Medicine, 26*(4), 450-452. https://doi.org/10.1038/s41591-020-0820-9

Anderson, I. (2020, 10 June 2020). *In a way, nature is sending us a message with COVID-19*. UNEP. Retrieved 3 April 2022 from https://m.facebook.com/unep/photos/in-a-way-nature-is-sending-us-a-message-with-covid19-we-have-pushed-nature-into-/10158718285525712/#_=_

Animals Australia. (2022). *She's 'broken'. She's given up*. Animals Australia. Retrieved 5 May 2023 from https://animalsaustralia.org/latest-news/final-moments/

Antal, M., & Drews, S. (2015). Nature as relationship partner: An old frame revisited. *Environmental Education Research, 21*(7), 1056-1078. https://doi.org/10.1080/13504622.2014.971715

Archuleta, J.-L. (2016). The color of responsibility: Ethical issues and solutions in colored gemstones. *Gems & Gemology, 52*(2), 144-160. https://doi.org/10.5741/GEMS.52.2.144

Arora, N. K., & Mishra, J. (2020). COVID-19 and importance of environmental sustainability. *Environmental Sustainability, 3(2), 117-119. https://doi.org/10.1007/s42398-020-00107-z*

Asundi, A., O'Leary, C., & Bhadelia, N. (2021). Global COVID-19 vaccine inequity: The scope, the impact, and the challenges. *Cell Host & Microbe, 29(*7), 1036-1039. https://doi.org/10.1016/j.chom.2021.06.007

Attwood, S., & Hajat, C. (2020). How will the COVID-19 pandemic shape the future of meat consumption? *Public Health Nutrition, 23*(17), 3116-3120. https://doi.org/10.1017/S136898002000316X

Baerlocher, F. (1990). The Gaia hypothesis: A fruitful fallacy? *Experientia, 46*(3), 232-238. https://doi.org/10.1007/BF01951752

Baran, B. E., Rogelberg, S. G., & Clausen, T. (2016). Routinized killing of animals: Going beyond dirty work and prestige to understand the well-being of slaughterhouse workers. *Organization, 23*(3), 351-369. https://doi.org/10.1177/1350508416629456

Bastian, B., Loughnan, S., Haslam, N., & Radke, H. R. (2012). Don't mind meat? The denial of mind to animals used for human consumption. *Personality and Social Psychology Bulletin, 38*(2), 247-256. https://doi.org/10.1177/0146167211424291

Bayod, R. P. (2020). Communing with Mother Earth: Indigenous way to care and manage the ecosystem. *Social Ethics Society Journal of Applied Philosophy, 6*(1), 71-90. http://ses-journal.com/wp-content/uploads/2020/04/Article4_Bayod_SESV6N1_2020.pdf

Beirne, P. (2021). Wildlife trade and COVID-19: Towards a criminology of anthropogenic pathogen spillover. *The British Journal of Criminology, 61*(3), 607-626. https://doi.org/10.1093/bjc/azaa084

Bekoff, M. (2007). *The emotional lives of animals: A leading scientist explores animal joy, sorrow, and empathy—and why they matter*. New World Library.

Benatar, D. (2007). The chickens come home to roost. *American Journal of Public Health, 97*(9), 1545-1546. https://doi.org/10.2105/ajph.2006.090431

Bernstein, J., & Dutkiewicz, J. (2021). A public health ethics case for mitigating zoonotic disease risk in food production. *Food Ethics, 6*(2), 9. https://doi.org/10.1007/s41055-021-00089-6

Bilewicz, M., Imhoff, R., & Drogosz, M. (2011). The humanity of what we eat: Conceptions of human uniqueness among vegetarians and omnivores. *European Journal of Social Psychology, 41*(2), 201-209. https://doi.org/10.1002/ejsp.766

Blattner, C. E. (2020). From zoonosis to zoopolis. *Derecho Animal (Forum of Animal Law Studies), 11*(4), 41-53. https://doi.org/10.5565/rev/da.524

Bonilla-Aldana, D. K., Dhama, K., & Rodriguez-Morales, A. J. (2020). Revisiting the One Health approach in the context of COVID-19: A look into the ecology of this emerging disease. *Advances in Animal and Veterinary Sciences, 8*(3), 234-237. https://doi.org/10.17582/journal.aavs/2020/8.3.234.237

Bratanova, B., Loughnan, S., & Bastian, B. (2011). The effect of categorization as food on the perceived moral standing of animals. *Appetite, 57*(1), 193-196. https://doi.org/10.1016/j.appet.2011.04.020

Breithaupt, H. (2003). Fierce creatures. *EMBO Reports, 4*(10), 921-924. https://doi.org/10.1038/ sj.embor.embor949

Broom, D. M. (2010). Cognitive ability and awareness in domestic animals and decisions about obligations to animals. *Applied Animal Behaviour Science, 126*(1), 1-11. https://doi.org/10.1016/j.applanim.2010.05.001

Bruce, C. (1862). On the Vedic conception of the earth—Atharva Veda. Journal *of the Royal Asiatic Society of Great Britain and Ireland, 19,* 321-336. https://doi.org/10.1017/S0035869X00156606

Brüssow, H. (2012). On viruses, bats and men: A natural history of food-borne viral infections. In G. Witzany (Ed.), *Viruses: Essential Agents of Life* (pp. 245-268). Springer. https://doi.org/10.1007/978-94-007-4899-6

Brüssow, H. (2023). Viral infections at the animal–human interface—Learning lessons from the SARS-CoV-2 pandemic. *Microbial Biotechnology, 16*(7), 1397-1411. https://doi.org/10.1111/1751-7915.14269

Cairns, K., & Johnston, J. (2018). On (not) knowing where your food comes from: Meat, mothering and ethical eating. *Agriculture and Human Values, 35*(3), 569-580. https://doi.org/10.1007/s10460-018-9849-5

Chakravorty, S. (2016). Andean cosmovision and diplomacy for life. *Strategic Analysis, 40*(5), 440-450. https://doi.org/10.1080/09700161.2016.1209915

Choo, S. W., Zhou, J., Tian, X., Zhang, S., Qiang, S., O'Brien, S. J., Tan, K. Y., Platto, S., Koepfli, K.-P., Antunes, A., & Sitam, F. T. (2020). Are pangolins scapegoats of the COVID-19 outbreak-CoV transmission and pathology evidence? *Conservation Letters, 13*(6), e12754. https://doi.org/10.1111/conl.12754

Claverie, J.-M., & Abergel, C. (2012). The concept of virus in the post-megavirus era. In G. Witzany (Ed.), *Viruses: Essential Agents of Life* (pp. 187-202). Springer. https://doi.org/10.1007/978-94-007-4899-6

DairyNZ. (2022). *Culling cows.* Retrieved 22 December 2022 from https://www.dairynz.co.nz/ animal/culling-cows/

Dalziell, J., & Wadiwel, D. J. (2016). Live exports, animal advocacy, race and 'animal nationalism'. In A. Potts (Ed.), *Meat Culture* (pp. 73-89). Brill Academic Publishers. https://doi.org/10.1163/9789004325852

Dasgupta, S., & Crunkhorn, R. (2020). A History of pandemics over the ages and the human cost. *The Physician, 6*(2). https://doi.org/10.38192/1.6.2.1

de Vere, A. J., & Kuczaj Ii, S. A. (2016). Where are we in the study of animal emotions? *WIREs Cognitive Science, 7*(5), 354-362. https://doi.org/10.1002/wcs.1399

de Waal, F. B. M. (2011). What is an animal emotion? *Annals of the New York Academy of Sciences, 1224*(1), 191-206. https://doi.org/10.1111/j.1749-6632.2010.05912.x

Department of Conservation. (n.d.). *Animal pests and threats A - Z.* Retrieved 6 June 2023 from https://www.doc.govt.nz/nature/pests-and-threats/animal-pests/

Dhont, K., & Hodson, G. (2014). Why do right-wing adherents engage in more animal exploitation and meat consumption? *Personality and Individual Differences, 64*, 12-17. https://doi.org/10.1016/j.paid.2014.02.002

Dhont, K., Piazza, J., & Hodson, G. (2021). The role of meat appetite in willfully disregarding factory farming as a pandemic catalyst risk. *Appetite, 164,* 105279. https://doi.org/10.1016/j.appet.2021.105279

Dinu, M., Abbate, R., Gensini, G. F., Casini, A., & Sofi, F. (2017). Vegetarian, vegan diets and multiple health outcomes: A systematic review with meta-analysis of observational studies. *Critical Reviews in Food Science and Nutrition, 57*(17), 3640-3649. https://doi.org/10.1080/10408398.2016.1138447

Doke, S. K., & Dhawale, S. C. (2015). Alternatives to animal testing: A review. *Saudi Pharmaceutical Journal, 23*(3), 223-229. https://doi.org/10.1016/j.jsps.2013.11.002

Dossey, L. (2020). Mother nature speaks: Coronavirus, connectedness, and consciousness. *Explore, 16*(6), 345-347. https://doi.org/10.1016/j.explore.2020.08.008

Duffy, R. (2005). Global environmental governance and the challenge of shadow states: The impact of illicit sapphire mining in Madagascar. *Development and Change, 36*(5), 825-843. https://doi.org/10.1111/j.0012-155X.2005.00437.x

Dwivedi, O. P. (1997). Vedic heritage for environmental stewardship. *Worldviews: Global Religions, Culture, and Ecology, 1*(1), 25-36. https://doi.org/10.1163/156853597X00191

Ede, T., Lecorps, B., von Keyserlingk, M. A. G., & Weary, D. M. (2019). Symposium review: Scientific assessment of affective states in dairy cattle. *Journal of Dairy Science, 102*(11), 10677-10694. https://doi.org/10.3168/jds.2019-16325

Eleonora, G. (2017). Why eating animals is not good for us. *Journal of Animal Ethics, 7*(1), 31-62. https://doi.org/10.5406/janimalethics.7.1.0031

Estola, T. (1970). Coronaviruses, a new group of animal RNA viruses. Avian *Diseases, 14*(2), 330-336. https://doi.org/10.2307/1588476

Evans, G. C. (2006). To what extent does wealth maximization benefit farmed animals? A law and economics approach to a ban on gestation crates in pig production. *Animal Law, 13*(1), 167-196. https://www.animallaw.info/sites/default/files/lralvol13_1_p167.pdf

Fantini, J., Devaux, C. A., Yahi, N., & Frutos, R. (2022). The novel hamster-adapted SARS-CoV-2 Delta variant may be selectively advantaged in humans. *Journal of Infection, 84*(5), e53-e54. https://doi.org/10.1016/j.jinf.2022.03.001

FAO. (2023). *Contribution of terrestrial animal source food to healthy diets for improved nutrition and health outcomes: An evidence and policy overview on the state of knowledge and gaps.* Food and Agriculture Organization of the United Nations. https://doi.org/10.4060/cc3912en

FAO, WHO, & OIE. (2004). *Report of the WHO/FAO/OIE joint consultation on emerging zoonotic diseases.* Food and Agriculture Organization of the United Nations, World Health Organization, and World Organisation for Animal Health. https://apps.who.int/iris/bitstream/handle/10665/68899/ WHO_ CDS_CPE_ZFK_2004.9.pdf

Feng, Y., Siu, K., Wang, N., Ng, K.-M., Tsao, S.-W., Nagamatsu, T., & Tong, Y. (2009). Bear bile: Dilemma of traditional medicinal use and animal protection. *Journal of Ethnobiology and Ethnomedicine, 5*(1), 2. https://doi.org/10.1186/1746-4269-5-2

Ferré, V. M., Peiffer-Smadja, N., Visseaux, B., Descamps, D., Ghosn, J., & Charpentier, C. (2022). Omicron SARS-CoV-2 variant: What we know and what we don't. *Anaesthesia, Critical Care & Pain Medicine, 41*(1). https://doi.org/10.1016/j.accpm.2021.100998

Fisher, C. R., Streicker, D. G., & Schnell, M. J. (2018). The spread and evolution of rabies virus: Conquering new frontiers. *Nature Reviews Microbiology, 16*(4), 241-255. https://doi.org/10.1038/nrmicro.2018.11

Fresán, U., & Sabaté, J. (2019). Vegetarian diets: Planetary health and its alignment with human health. *Advances in Nutrition, 10*(Suppl 4), S380-S388. https://doi.org/10.1093/advances/nmz019

Frutos, R., & Devaux, C. A. (2020). Mass culling of minks to protect the COVID-19 vaccines: Is it rational? *New Microbes and New Infections, 38,* 100816. https://doi.org/10.1016/j.nmni.2020.100816

Galindo-González, J. (2022). Live animal markets: Identifying the origins of emerging infectious diseases. *Current Opinion in Environtal Science & Health, 25*, 100310. https://doi.org/10.1016/j.coesh.2021.100310

Gambardella, C., Morgana, S., Bramini, M., Rotini, A., Manfra, L., Migliore, L., Piazza, V., Garaventa, F., & Faimali, M. (2018). Ecotoxicological effects of polystyrene microbeads in a battery of marine organisms belonging to different trophic levels. *Marine Environmental Research, 141,* 313-321. https://doi.org/ 10.1016/j.marenvres.2018.09.023

Gandhi, M. K. (1949). *Diet and diet reform.* Navajivan Publishing House https://www.mkgandhi.org/ ebks/ diet_and_diet_reform.pdf

Gatti, R. C. (2020). Coronavirus outbreak is a symptom of Gaia's sickness. *Ecological Modelling, 426,* 109075-109075. https://doi.org/10.1016/j.ecolmodel.2020.109075

Gibbs, J., & Cappuccio, F. P. (2022). Plant-based dietary patterns for human and planetary health. *Nutrients, 14*(8). https://doi.org/10.3390/nu14081614

Gill, S. D. (1991). *Mother Earth: An American story.* University of Chicago Press.

Goodall, J. (1998). Learning from the chimpanzees: A message humans can understand. *Science, 282*(5397), 2184-2185. https://doi.org/10.1126/science.282.5397.2184

Goodall, J. (2010). *Through a window: My thirty years with the chimpanzees of Gombe.* Houghton Mifflin Harcourt.

Goodman, M. (n.d.). Coronavirus from the perspective of Mother Earth. *Spirituality + Health.* Retrieved 15 December 2022, from https://www.spiritualityhealth.com/articles/2020/03/24/coronavirus-from-the-perspective-of-mother-earth

Goudie, A. S. (2019). *Human impact on the natural environment: Past, present and future* (8 ed.). John Wiley & Sons.

Grauerholz, L. (2007). Cute enough to eat: The transformation of animals into meat for human consumption in commercialized images. *Humanity & Society, 31*(4), 334-354. https://doi.org/10.1177/ 016059760 703 100404

Greenebaum, J. B. (2012). Managing impressions: "Face-saving" strategies of vegetarians and vegans. *Humanity & Society, 36*(4), 309-325. https://doi.org/10.1177/0160597612458898

Greger, M. (2007). The human/animal interface: Emergence and resurgence of zoonotic infectious diseases. *Critical Reviews in Microbiology, 33*(4), 243-299. https://doi.org/10.1080/10408410701647594

Halteman, M. C. (2011). Varieties of harm to animals in industrial farming. *Journal of Animal Ethics, 1*(2), 122-131. https://doi.org/10.5406/janimalethics.1.2.0122

Hammond, P. (2020). Nature is not sending us a message. *Areo.* Retrieved 20 December 2021, from https://areomagazine.com/2020/04/02/nature-is-not-sending-us-a-message/

Haque, A., & Pant, A. B. (2022). Mitigating Covid-19 in the face of emerging virus variants, breakthrough infections and vaccine hesitancy. *Journal of Autoimmunity, 127,* 102792. https://doi.org/10.1016/ j.jaut.2021.102792

Hardin, L. T., & Xiao, N. (2022). miRNAs: The key regulator of COVID-19 disease. *International Journal of Cell Biology, 2022*. https://doi.org/10.1155/2022/1645366

Heidemann, D. (2021). Kant and the forms of realism. *Synthese, 198*(13), 3231-3252. https://doi.org/10.1007/s11229-019-02502-4

Hern, W. M. (1993). Has the human species become a cancer on the planet? A theoretical view of population growth as a sign of pathology. *Current World Leaders, 36*(6), 1089-1124. https://www.drhern.com/wp-content/uploads/2018/05/human-cancer-on-planet.pdf

Hunt, C. F., Lin, W. H., & Voulvoulis, N. (2021). Evaluating alternatives to plastic microbeads in cosmetics. *Nature Sustainability, 4*(4), 366-372. https://doi.org/10.1038/s41893-020-00651-w

Jalasvuori, M. (2012). Revolutionary struggle for existence: Introduction to four intriguing puzzles in virus research. In G. Witzany (Ed.), *Viruses: Essential agents of life* (pp. 1-20). Springer. https://doi.org/10.1007/ 978-94-007-4899-6

Jodalli, P., Basheer, A., Nagarsekar, A., Gaunkar, R., & Ramya, K. (2020). Plant based diet-A therapeutic riposte to emerging zoonotic infections. *Journal of Clinical & Diagnostic Research, 14*(9), ZE01-ZE03. https://doi.org/10.7860/JCDR/2020/45694.13977

Jones, B. A., Grace, D., Kock, R., Alonso, S., Rushton, J., Said, M. Y., McKeever, D., Mutua, F., Young, J., McDermott, J., & Pfeiffer, D. U. (2013). Zoonosis emergence linked to agricultural intensification and environmental change. *Proceedings of the National Academy of Sciences, 110*(21), 8399-8404. https://doi.org/10.1073/pnas.1208059110

Jowell, A., & Barry, M. (2020). COVID-19: A matter of planetary, not only national health. *The American Journal of Tropical Medicine and Hygiene, 103*(1), 31-32. https://doi.org/10.4269/ajtmh.20-0419

Joyce, A., Dixon, S., Comfort, J., & Hallett, J. (2012). Reducing the environmental impact of dietary choice: Perspectives from a behavioural and social change approach. *Journal of Environmental and Public Health, 2012*. https://doi.org/10.1155/2012/978672

Judson, S. D., & Rabinowitz, P. M. (2021). Zoonoses and global epidemics. *Current Opinion in Infectious Diseases, 34*(5), 385-392. https://doi.org/10.1097/QCO.0000000000000749

Kant, I. (1922). *Critique of Pure Reason. (Translated into English by F. Max Müller) (*2 ed.). The Macmillan Company.

Karesh, W. B., Dobson, A., Lloyd-Smith, J. O., Lubroth, J., Dixon, M. A., Bennett, M., Aldrich, S., Harrington, T., Formenty, P., Loh, E. H., Machalaba, C. C., Thomas, M. J., & Heymann, D. L. (2012). Ecology of zoonoses: Natural and unnatural histories. *The Lancet, 380*(9857), 1936-1945. https://doi.org/10.1016/S0140-6736(12)61678-X

Karpouzou, P., & Zampaki, N. (2022). Editors' Note. *Journal of Ecohumanism, 1*(1), 1-3. https://doi.org/10.33182/joe.v1i1.2113

Kim, J.-S., Yoon, S.-J., Park, Y.-J., Kim, S.-Y., & Ryu, C.-M. (2020). Crossing the kingdom border: Human diseases caused by plant pathogens. *Environmental Microbiology, 22*(7), 2485-2495. https://doi.org/10. 1111/1462-2920.15028

Kirchner, J. W. (1989). The Gaia hypothesis: Can it be tested? *Reviews of Geophysics, 27*(2), 223-235. https://doi.org/10.1029/RG027i002p00223

Kirchner, J. W. (2002). The Gaia hypothesis: Fact, theory, and wishful thinking. *Climatic Change, 52*(4), 391-408. https://doi.org/10.1023/A:1014237331082

Klobučar, T., & Fisher, D. N. (2023). When do we start caring about insect welfare? Neotropical *Entomology, 52*(1), 5-10. https://doi.org/10.1007/s13744-022-01023-z

Knight, A. (2020). Should New Zealand do more to uphold animal welfare? *Animal Studies Journal, 9*(1), 114-149. https://ro.uow.edu.au/asj/vol9/iss1/5

Kret, M. E., Massen, J. J. M., & de Waal, F. B. M. (2022). My fear is not, and never will be, your fear: On emotions and feelings in animals. *Affective Science, 3*(1), 182-189. https://doi.org/10.1007/s42761-021-00099-x

Krishan, Y. (1989). Collective karmas. *East and West, 39*(1/4), 179-194. http://www.jstor.org/ stable/ 29756893

Kroner, R. (1954). What is really real? *The Review of Metaphysics, 7*(3), 351-362. http://www.jstor.org/ stable/ 20123381

Landis-Marinello, K. H. (2008). The environmental effects of cruelty to agricultural animals. *Michigan Law Review First Impressions, 106,* 147-151. https://repository.law.umich.edu/mlr_fi/vol106/iss1/1

Langer, P. (2003). Lactation, weaning period, food quality, and digestive tract differentiations in eutheria. *Evolution, 57*(5), 1196-1215. http://www.jstor.org/stable/3448818

Laroche, P. C. S. J., Schulp, C. J. E., Kastner, T., & Verburg, P. H. (2020). Telecoupled environmental impacts of current and alternative Western diets. *Global Environmental Change, 62,* 102066. https://doi.org/10.1016/j.gloenvcha.2020.102066

Larsson, N., & Levitt, T. (2020, 26 January 2020). 'Floating feedlots': Animals spending weeks at sea on ships not fit for purpose. *The Guardian.* https://www.theguardian.com/environment/2020/jan/26/floating-feedlots-animals-spending-weeks-at-sea-on-ships-not-fit-for-purpose

Lever, C. (1990). The zoo dilemma. *Journal of Natural History, 24*(4), 795-799. https://doi.org/10.1080/00222939000770561

Levine, L. (1993). GAIA: Goddess and idea. *Biosystems, 31*(2), 85-92. https://doi.org/10.1016/0303-2647(93)90035-B

Lie, R. K., & Miller, F. G. (2020). Allocating a COVID-19 vaccine: Balancing national and international responsibilities. *The Milbank Quarterly, 99*(2), 450-466. https://doi.org/10.1111/1468-0009.12494

Lieff, J. (2012). Virus intelligence: Are viruses alive and sentient? *Microbes.* https://jonlieffmd.com/blog/are-viruses-alive-are-viruses-sentient-virus-intelligence

Littleton, J., Karstens, S., Busse, M., & Malone, N. (2022). Human-Animal interactions and infectious disease: A view for bioarchaeology. *Bioarchaeology International, 6*(1-2), 133–148-133–148. https://doi.org/10.5744/bi.2021.0002

Livingstone, E., & Shepherd, C. R. (2016). Bear farms in Lao PDR expand illegally and fail to conserve wild bears. *Oryx, 50*(1), 176-184. https://doi.org/10.1017/S0030605314000477

Loughnan, S., Bastian, B., & Haslam, N. (2014). The psychology of eating animals. *Current Directions in Psychological Science, 23*(2), 104-108. https://doi.org/10.1177/0963721414525781

Loughnan, S., Bratanova, B., & Puvia, E. (2012). The meat paradox: How are we able to love animals and love eating animals. *In-Mind Italia, 1,* 15-18.

Loughnan, S., Haslam, N., & Bastian, B. (2010). The role of meat consumption in the denial of moral status and mind to meat animals. *Appetite, 55*(1), 156-159. https://doi.org/10.1016/j.appet.2010.05.043

Lovelock, J. E., & Margulis, L. (1974). Atmospheric homeostasis by and for the biosphere: The gaia hypothesis. *Tellus, 26*(1-2), 2-10. https://doi.org/10.3402/tellusa.v26i1-2.9731

Lu, J., Bayne, K., & Wang, J. (2013). Current status of animal welfare and animal rights in China. *Alternatives to Laboratory Animals, 41*(5), 351-357. https://doi.org/10.1177/026119291304100505

Lu, M., Wang, X., Ye, H., Wang, H., Qiu, S., Zhang, H., Liu, Y., Luo, J., & Feng, J. (2021). Does public fear that bats spread COVID-19 jeopardize bat conservation? *Biological Conservation, 254,* 108952. https://doi.org/10.1016/j.biocon.2021.108952

Lymbery, P. (2020). Covid-19: How industrial animal agriculture fuels pandemics. *Derecho Animal (Forum of Animal Law Studies), 11*(4), 141-149. https://doi.org/10.5565/rev/da.514

MacDougall, A. K. (1996). Humans as cancer. *Wild Earth, 6,* 81-88. http://www.brontaylor.com/courses/pdf/MacDougall--HumansCancer.pdf

Maerz, M. (2020). Corporate cruelty: Holding factory farms accountable for animal cruelty crimes to encourage systemic reform. *Animal & Natural Resources Law Review, 16*, 137-170.

Magallanes-Blanco, C. (2015). Talking about our mother: Indigenous videos on nature and the environment. *Communication, Culture & Critique, 8*(2), 199-216. https://doi.org/10.1111/cccr.12084

Maharishi Mahesh Yogi. (1995). *Science of being and art of living: Trancendental meditation.* Penguin Books Ltd.

Mann, S. (2020). Could we stop killing?—Exploring a post-lethal vegan or vegetarian agriculture. *World, 1*(2), 124-134. https://doi.org/10.3390/world1020010

Marchese, A., & Hovorka, A. (2022). Zoonoses transfer, factory farms and unsustainable human–animal relations. *Sustainability, 14*(19). https://doi.org/10.3390/su141912806

Marie, V., & Gordon, M. L. (2023). The (re-)emergence and spread of viral zoonotic disease: A perfect storm of human ingenuity and stupidity. *Viruses, 15*(8). https://doi.org/10.3390/v15081638

Marino, L., & Allen, K. (2017). The psychology of cows. *Animal Behavior and Cognition, 4*(4), 474-498. https://doi.org/10.26451/abc.04.04.06.2017

Marsh, G. P. (1864). *Man and nature; or, physical geography as modified by human action.* Harvard University Press.

McLoughlin, E. (2019). Knowing cows: Transformative mobilizations of human and non-human bodies in an emotionography of the slaughterhouse. *Gender, Work & Organization, 26*(3), 322-342. https://doi.org/10.1111/gwao.12247

Merali, Z. (2015). Quantum physics: What is really real? *Nature, 521*(7552), 278-280. https://doi.org/10.1038/521278a

Mildon, C. (2016). An Indigenous approach to Māori healing with Papatūānuku. *Ata: Journal of Psychotherapy Aotearoa New Zealand, 20*(1), 11-17. https://doi.org/10.9791/ajpanz.2016.02

Miraj, S. S., Parveen, N., & Zedan, H. S. (2021). Plastic microbeads: Small yet mighty concerning. *International Journal of Environmental Health Research, 31*(7), 788-804. https://doi.org/10.1080/09603123.2019.1689233

Modlinska, K., & Pisula, W. (2018). Selected psychological aspects of meat consumption-A short review. *Nutrients, 10*(9). https://doi.org/10.3390/nu10091301

Morris, M. C. (2021). The Voiceless Animal Cruelty Index and its relationship to per capita purchasing power parity and inequality. *Kōtuitui: New Zealand Journal of Social Sciences Online, 16*(2), 384-395. https://doi.org/10.1080/1177083X.2021.1885453

Morse, S. S., Mazet, J. A., Woolhouse, M., Parrish, C. R., Carroll, D., Karesh, W. B., Zambrana-Torrelio, C., Lipkin, W. I., & Daszak, P. (2012). Prediction and prevention of the next pandemic zoonosis. *The Lancet, 380*(9857), 1956-1965. https://doi.org/10.1016/s0140-6736(12)61684-5

O'Callaghan-Gordo, C., & Antó, J. M. (2020). COVID-19: The disease of the anthropocene. *Environmental Research*. https://doi.org/10.1016/j.envres.2020.109683

O'Sullivan, V. (2020). Non-human animal trauma during the pandemic. *Postdigital Science and Education, 2*(3), 588-596. https://doi.org/10.1007/s42438-020-00143-2

Paital, B. (2020). Nurture to nature via COVID-19, a self-regenerating environmental strategy of environment in global context. *Science of The Total Environment, 729*. https://doi.org/10.1016/j.scitotenv.2020.139088

Panksepp, J. (2005). Affective consciousness: Core emotional feelings in animals and humans. *Consciousness and Cognition, 14*(1), 30-80. https://doi.org/10.1016/j.concog.2004.10.004

Patterson, J. (1994). Māori environmental virtues. *Environmental Ethics, 16*(4), 397-409. https://doi.org/ 10.5840/enviroethics19941645

Pekar, J. E., Magee, A., Parker, E., Moshiri, N., Izhikevich, K., Havens, J. L., Gangavarapu, K., Malpica Serrano, L. M., Crits-Christoph, A., Matteson, N. L., Zeller, M., Levy, J. I., Wang, J. C., Hughes, S., Lee, J., Park, H., Park, M.-S., Ching Zi Yan, K., Lin, R. T. P., Mat Isa, M. N., Noor, Y. M., Vasylyeva, T. I., Garry, R. F., Holmes, E. C., Rambaut, A., Suchard, M. A., Andersen, K. G., Worobey, M., & Wertheim, J. O. (2022). The molecular epidemiology of multiple zoonotic origins of SARS-CoV-2. *Science, 377*(6609), 960-966. https://doi.org/10.1126/science.abp8337

Peros, C. S., Dasgupta, R., Kumar, P., & Johnson, B. A. (2021). Bushmeat, wet markets, and the risks of pandemics: Exploring the nexus through systematic review of scientific disclosures. *Environmental Science & Policy, 124,* 1-11. https://doi.org/10.1016/j.envsci.2021.05.025

Perry, N. (2022, 5 May 2022). New Zealand on verge of wiping out painful cattle disease. *The Associated Press*. https://phys.org/news/2022-05-zealand-verge-painful-cattle-disease.html

Perry, N., & Brandt, P. (2007). A case study on cruelty to farm animals: Lessons learned from the Hallmark Meat Packing case. *Michigan Law Review First Impressions, 106,* 117-122. http://repository.law.umich.edu/mlr_fi/vol106/iss1/7

PETA. (2023). *10 Shocking PETA Videos*. People for the Ethical Treatment of Animals. Retrieved 3 April 2023 from https://www.peta.org/features/10-shocking-peta-videos/

Piazza, J. (2019). Why people love animals yet continue to eat them. In G. Hodson & K. Dhont (Eds.), *Why We Love and Exploit Animals* (1 ed., pp. 121-136). Routledge.

Piazza, J., Ruby, M. B., Loughnan, S., Luong, M., Kulik, J., Watkins, H. M., & Seigerman, M. (2015). Rationalizing meat consumption. The 4Ns. *Appetite, 91*, 114-128. https://doi.org/10.1016/ j.appet. 2015.04.011

Piret, J., & Boivin, G. (2021). Pandemics throughout history. *Frontiers in Microbiology, 11*. https://doi.org/10.3389/fmicb.2020.631736

Poore, J., & Nemecek, T. (2018). Reducing food's environmental impacts through producers and consumers. *Science, 360*(6392), 987-992. https://doi.org/10.1126/science.aaq0216

Prabhu, R. K., & Rao, U. R. (1960). *The mind of Mahatma Gandhi (Encyclopedia of Gandhi's thoughts)*. Navajivan Trust https://www.mkgandhi.org/ebks/mindofmahatmagandhi.pdf

Randall, J. H. (1920). The really real. *The Journal of Philosophy, Psychology and Scientific Methods, 17*(13), 337-345.

Reddy, B. L., & Saier, M. H., Jr. (2020). The causal relationship between eating animals and viral epidemics. *Microbial Physiology, 30*(6), 2-8. https://doi.org/10.1159/000511192

Reichenbach, B. R. (1988). The law of karma and the principle of causation. *Philosophy East & West, 38*(4), 399-410. https://doi.org/10.2307/1399118

Ritchie, H. (2019). *Half of the world's habitable land is used for agriculture*. Our World in Data. Retrieved 4 April 2023 from https://ourworldindata.org/global-land-for-agriculture#note-4

Rohr, J. R., Barrett, C. B., Civitello, D. J., Craft, M. E., Delius, B., DeLeo, G. A., Hudson, P. J., Jouanard, N., Nguyen, K. H., & Ostfeld, R. S. (2019). Emerging human infectious diseases and the links to global food production. *Nature Sustainability, 2*(6), 445-456. https://doi.org/10.1038/s41893-019-0293-3

Rosen, S. J. (2020). Vaishnava vegetarianism: Scriptural and theological perspectives on the diet of devotion. In V. Narayanan (Ed.), *The Wiley Blackwell companion to religion and materiality* (pp. 395-413). John Wiley & Sons, Ltd. https://doi.org/10.1002/9781118660072.ch21

Rothgerber, H. (2013). Real men don't eat (vegetable) quiche: Masculinity and the justification of meat consumption. *Psychology of Men & Masculinity, 14*(4), 363-375. https://doi.org/10.1037/a0030379

Sachdeva, S., Mor, S., & Singh, A. (2018). Factors affecting the degree of aggression among students of Indian University. *Indian Journal of Youth and Adolescent Health, 5*(3), 17-22. https://doi.org/10. 24321/ 2349.2880.201815

Sandhu, H. S., Arora, A., Sarker, S. I., Shah, B., Sivendra, A., Winsor, E. S., & Luthra, A. (2021). Pandemic prevention and unsustainable animal-based consumption. *Bulletin of the World Health Organization, 99*(8), 603-605. https://doi.org/10.2471/BLT.20.276238

Schneider, S. H. (1986). A goddess of the earth?: The debate on the Gaia hypothesis – An editorial. *Climatic Change, 8*(1), 1-4. https://doi.org/10.1007/BF00158966

Schwedhelm, P., Kusnick, J., Heinl, C., Schönfelder, G., & Bert, B. (2021). How many animals are used for SARS-CoV-2 research? *EMBO Reports, 22*(10). https://doi.org/10.15252/embr.202153751

Shelley, B. P. (2021). Sustainable humanity beyond the COVID-19 Crisis: 'Vasudhaiva Kutumbakam' for 'One Planet, One Health, One Future'. *Archives of Medicine and Health Sciences, 9*(1), 1-11. https://doi.org/10.4103/amhs.amhs_118_21

Singer, P. (1975). *Animal liberation: A new ethichs for our treatment of animals*. Avon Books.

Singh, R. P. (2007). Gaia and ecological a wakening: Message of Hinduism for deeper understanding. *The Oriental Anthropologist, 7*(2), 213-233. https://doi.org/10.1177/0976343020070202

Slingenbergh, J., Gilbert, M., Balogh, K. d., & Wint, W. (2004). Ecological sources of zoonotic diseases. *Revue scientifique et technique-Office international des épizooties, 23*(2), 467-484. https://doi.org/10.20506/ rst.23.2.1492

Sólon, P. (2018). The rights of Mother Earth. In V. Satgar (Ed.), *The climate crisis* (pp. 107-130). Wits University Press. https://doi.org/10.18772/22018020541.10

Souther, C. E. (2016). The cruel culture of conservation country: Non-native animals and the consequences of predator-free New Zealand. *Transnational Law and Contemporary Problems, 26*(1), 63-120.

Swami Chidananda. (1991a). *Bliss is within*. The Divine Life Society Yoga-Vedanta Forest Academy Press. https://www.dlshq.org/download2/blisswithin.pdf

Swami Chidananda. (1991b). *The path beyond sorrow*. The Divine Life Society. https://www.dlshq.org/download2/beyond.pdf

Swami Chidananda. (1999). *Lectures on Raja Yoga*. The Divine Life Society. https://www.dlshq.org/download2/rajayogalectures.pdf

Swami Krishnananda. (1980). *The philosophy of the Bhagavadgita*. The Divine Life Society Yoga-Vedanta Forest Academy Press. https://www.swami-krishnananda.org/gita/Philosophy_of_the_Bhagavadgita.pdf

Swami Sivananda. (1995). *Practice of Karma Yoga* (6 ed.). The Divine Life Society. https://www.dlshq.org/download2/practicekarma.pdf

Swami Sivananda. (1997). *What becomes of the soul after death* (13 ed.). The Divine Life Society Yoga-Vedanta Forest Academy Press. https://www.dlshq.org/download2/afterdeath.pdf

Swami Sivananda. (1999). *Raja Yoga: Text, word-to-word meaning, translation and commentary of yoga sutras of Patanjali Maharshi*. The Divine Life Society Yoga-Vedanta Forest Academy Press.

Swami Vivekananda. (2011). *Jnana Yoga: The Yoga of knowledge (Originally published 1902)*. Advaita Ashrama (Publication Department).

Swami Vivekananda. (2012). *Raja Yoga or Conquering the internal nature (Originally published 1896)*. Advaita Ashrama (Publication Department).

Taft, C. T., Hamilton, E. G., Leviyah, X., Gnall, K. E., & Park, C. L. (2023). Animal consumption associated with higher intimate partner aggression. *Journal of Family Violence*. https://doi.org/10.1007/s10896-023-00556-0

Termannsen, A.-D., Clemmensen, K. K. B., Thomsen, J. M., Nørgaard, O., Díaz, L. J., Torekov, S. S., Quist, J. S., & Færch, K. (2022). Effects of vegan diets on cardiometabolic health: A systematic review and meta-analysis of randomized controlled trials. *Obesity Reviews, 23*(9), e13462. https://doi.org/10.1111/obr.13462

Tobias, M. C., & Morrison, J. G. (2021). Human cruelty and SARS-CoV-2. In M. C. Tobias & J. G. Morrison (Eds.), *On the nature of ecological paradox* (pp. 569-581). Springer International Publishing. https://doi.org/10.1007/978-3-030-64526-7_60

UNEP & ILRI. (2020). *Preventing the next pandemic: Zoonotic diseases and how to break the chain of transmission*. United Nations Environment Programme and International Livestock Research Institute. https://unsdg.un.org/sites/default/files/2020-07/UNEP-Preventing-the-next-pandemic.pdf

van der Riet, F. D. S. J. (1997). Diseases of plants transmissible between plants and man (phytonoses) exist. *Medical Hypotheses, 49*(4), 359-361. https://doi.org/10.1016/s0306-9877(97)90202-4

van Overbeek, L. S., van Doorn, J., Wichers, J. H., van Amerongen, A., van Roermund, H. J., & Willemsen, P. T. (2014). The arable ecosystem as battleground for emergence of new human pathogens. *Frontiers in Microbiology, 5*, 104. https://doi.org/10.3389/fmicb.2014.00104

Van Zeebroeck, S. (2021). Karma and corona: A philosophical perspective on COVID-19 as an outcome of cruelty towards animals by humanity. *Global Bioethics Enquiry, 9*(1), 5-10. https://doi.org/10. 38020/GBE.9.1.2021.5-10

Vidaver, A. K., Tolin, S. A., & Lambrecht, P. (2016). Biological safety considerations for plant pathogens and plant-associated microorganisms of significance to human health. In D. P. Wooley & B. K. B. (Eds.), *Biological safety: Principles and practices* (pp. 39-58). https://doi.org/10.1128/9781555819637.ch3

Vining, J. (2007). Animal cruelty laws and factory farming. *Michigan Law Review First Impressions, 106*, 123. http://repository.law.umich.edu/mlr_fi/vol106/iss1/6

Watts, J. (2004). China culls wild animals to prevent new SARS threat. *The Lancet, 363*(9403), 134. https://doi.org/10.1016/s0140-6736(03)15313-5

We Animals Media. (2023). *Telling their stories: Bringing visibility to hidden animals worldwide through compelling photo and videojournalism.* Retrieved 1 May 2023 from https://weanimalsmedia.org/

Weber, M., & Kollmayer, M. (2022). Psychological processes underlying an omnivorous, vegetarian, or vegan diet: Gender role self-concept, human supremacy beliefs, and moral disengagement from meat. *Sustainability, 14*(14), 8276. https://doi.org/10.3390/su14148276

Webster, R. G. (2004). Wet markets – a continuing source of severe acute respiratory syndrome and influenza? *The Lancet, 363*(9404), 234-236. https://doi.org/10.1016/S0140-6736(03)15329-9

Weckert, J. (2020). Is COVID-19 a message from nature? *NanoEthics, 14*(2), 129-133. https://doi.org/10.1007/s11569-020-00370-8

Wegner, G. I., Murray, K. A., Springmann, M., Muller, A., Sokolow, S. H., Saylors, K., & Morens, D. M. (2022). Averting wildlife-borne infectious disease epidemics requires a focus on socio-ecological drivers and a redesign of the global food system. *eClinicalMedicine, 47*. https://doi.org/10.1016/ j.eclinm. 2022.101386

Weiss, R. A., & Sankaran, N. (2022). Emergence of epidemic diseases: Zoonoses and other origins. *Faculty Reviews, 11*(2). https://doi.org/10.12703/r/11-2

Westhoek, H., Lesschen, J. P., Rood, T., Wagner, S., De Marco, A., Murphy-Bokern, D., Leip, A., van Grinsven, H., Sutton, M. A., & Oenema, O. (2014). Food choices, health and environment: Effects of cutting Europe's meat and dairy intake. *Global Environmental Change, 26*, 196-205. https://doi.org/10. 1016/j.gloenvcha.2014.02.004

Whitfort, A. (2009). Advancing animal welfare laws in Hong Kong. *Australian Animal Protection Law Journal, 2*, 65-78. https://www.animallaw.info/sites/default/files/australia_journal_vol2.pdf

Wiebers, D. O., & Feigin, V. L. (2020). What the COVID-19 crisis is telling humanity. *Neuroepidemiology*, 1. https://doi.org/10.1159/000508654

Witzany, G. (2012). Preface. In G. Witzany (Ed.), *Viruses: Essential agents of life* (pp. v-xi). Springer. https://doi.org/10.1007/978-94-007-4899-6

Wolfe, N. D., Daszak, P., Kilpatrick, A. M., & Burke, D. S. (2005). Bushmeat hunting, deforestation, and prediction of zoonotic disease. *Emerging infectious diseases, 11*(12), 1822-1827. https://doi.org/10. 3201/eid1112.040789

Woo, P. C., Lau, S. K., & Yuen, K. Y. (2006). Infectious diseases emerging from Chinese wet-markets: zoonotic origins of severe respiratory viral infections. *Current Opinion in Infectious Diseases, 19*(5), 401-407. https://doi.org/10.1097/01.qco.0000244043.08264.fc

Woods, A. (2012). From cruelty to welfare: The emergence of farm animal welfare in Britain, 1964–71. *Endeavour, 36*(1), 14-22. https://doi.org/10.1016/j.endeavour.2011.10.003

Worobey, M., Levy, J. I., Malpica Serrano, L., Crits-Christoph, A., Pekar, J. E., Goldstein, S. A., Rasmussen, A. L., Kraemer, M. U. G., Newman, C., Koopmans, M. P. G., Suchard, M. A., Wertheim, J. O., Lemey, P., Robertson, D. L., Garry, R. F., Holmes, E. C., Rambaut, A., & Andersen, K. G. (2022). The Huanan seafood wholesale market in Wuhan was the early epicenter of the COVID-19 pandemic. *Science, 377*(6609), 951-959. https://doi.org/10.1126/science.abp8715

Xiao, X., Newman, C., Buesching, C. D., Macdonald, D. W., & Zhou, Z.-M. (2021). Animal sales from Wuhan wet markets immediately prior to the COVID-19 pandemic. *Scientific Reports, 11*(1), 11898. https://doi.org/10.1038/s41598-021-91470-2

Xu, X., Sharma, P., Shu, S., Lin, T.-S., Ciais, P., Tubiello, F. N., Smith, P., Campbell, N., & Jain, A. K. (2021). Global greenhouse gas emissions from animal-based foods are twice those of plant-based foods. *Nature Food, 2*(9), 724-732. https://doi.org/10.1038/s43016-021-00358-x

Yamey, G., Garcia, P., Hassan, F., Mao, W., McDade, K. K., Pai, M., Saha, S., Schellekens, P., Taylor, A., & Udayakumar, K. (2022). It is not too late to achieve global covid-19 vaccine equity. *The BMJ, 376*, e070650. https://doi.org/10.1136/bmj-2022-070650

Zapatero Gaviria, A., & Barba Martin, R. (2023). What do we know about the origin of COVID-19 three years later? *Revista Clínica Española*. https://doi.org/10.1016/j.rceng.2023.02.010

Zapf, H. (2022). Posthumanism or ecohumanism? Environmental studies in the Anthropocene. *Journal of Ecohumanism, 1*(1), 5-17. https://doi.org/10.33182/joe.v1i1.1743

Zavattaro, S. M. (2020). "We've cared for the dead since we started caring": COVID-19 and our relationship to public and private deathcare. *Public Administration Review, 80*(4), 701-705. https://doi.org/10. 1111/ puar.13221

Zhao, S., Wang, L., Hu, W., & Zheng, Y. (2023). Meet the meatless: Demand for new generation plant-based meat alternatives. *Applied Economic Perspectives and Policy, 45*(1), 4-21. https://doi.org/10.1002/aepp.13232

Zukav, G. (1979). *The dancing Wu Li masters: An overview of the new physics*. William Morrow & Company, Inc.

Zumla, A., Dar, O., Kock, R., Muturi, M., Ntoumi, F., Kaleebu, P., Eusebio, M., Mfinanga, S., Bates, M., & Mwaba, P. (2016). Taking forward a 'One Health'approach for turning the tide against the Middle East respiratory syndrome coronavirus and other zoonotic pathogens with epidemic potential. *International Journal of Infectious Diseases, 47*, 5-9. https://doi.org/10.1016/j.ijid.2016.06.012