



Ethics, zoonoses, and human–nonhuman conflict: Covid-19 and beyond

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ABSTRACT: While the causes of human–animal conflict are numerous, many are intertwined with food production systems and the wildlife trade. The emergence and spread of Covid-19 exemplify this. Indeed, the wildlife population in South Asian countries has seen an increase in the risk of both human and nonhuman death in recent months, and as the economy slows, the search for food and extra income will intensify, negatively impacting wildlife. This paper aims to address some of the ethical issues concerning our treatment of nonhuman creatures and the environment in relation to the global food system and wildlife trade following the Covid-19 crisis.

KEY WORDS: Ecological ethics · Meat industry · Poaching · Covid-19 · Animal ethics · Factory farming · Environment

1. INTRODUCTION

After Covid-19, what will people remember about their time in lockdown? Many will certainly remember it as a time of uncertainty, stress, and anxiety and a period of financial difficulty. But many will also remember the lack of traffic, cleaner air, the seemingly louder birdsong, and the gratitude felt by people for the respite provided by walks in the natural environment. However, there are many factors that have drawn attention to our degrading treatment of the nonhuman world and its inhabitants, with certain human–animal conflicts being exacerbated, including wildlife poaching. Furthermore, it is in the meat industry that we see a high prevalence of zoonotic diseases, with people in developing countries being disproportionately affected (National Research Council 2009). *Is the next Pandemic on our Plate?*, an illuminating report written by Compassion in World Farming (CIWF 2020), gives the overcrowded conditions of the intensive farm as a key

driver for the emergence of zoonotic diseases (infectious diseases that are transmitted between domestic or wild animals and humans). This report also highlights the enormous environmental costs borne from the meat industry, costs which are rarely internalised, with the environment and its human and nonhuman inhabitants bearing the brunt of the resulting negative impacts.

2. HUMAN–ANIMAL CONFLICT: POACHING

The sudden grip of Covid-19 around the world forced countries to impose sudden public health measures, most notably lockdown measures that resulted in less traffic on the roads, less plane travel, and less rail travel, as well as fewer people travelling to and from work, with most people having to stay at home (IEA 2020). Consequently, all over the world, countries witnessed different changes in their natural environments, including cleaner air and less pollution generally.

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In India, while the implementation of lockdown measures instigated controversies, it also revealed nature in different forms in comparison to the time before the pandemic. Indeed, people in India were able to view the majestic Himalayas from distant lands because of improved air quality (The Indian Express 2021). On the other hand, new environmental issues were presented with respect to some aspects of nature. For example, many of the people who died during the worst of the pandemic were buried on the banks of the river Ganges, and parts of the river became swollen with dead bodies (Pandey 2021), thus raising health and environmental concerns with regard to what was already one of the world's most polluted rivers yet a key source of drinking water to many. Furthermore, there was a noticeable rise in human–animal conflicts in the form of poaching and other wildlife crimes, drawing attention to the human–animal conflict in India (Ghosal & Casey 2020).

The kinds of human–animal conflicts in regions in India vary with Indian seasons. For example, in the summer season, some villagers who depend on the forest for the collection of mahua flowers and tendu leaves are sometimes attacked by the wild animals that live in those forests (Ali 2017, Prajna 2019). In the rainy season, the conflicts take a different shape when poaching takes a new turn (Rai 2020).

A new study has revealed that incidents of wildlife poaching in India more than doubled during the Covid-19 lockdown, with 88 animals being killed for meat and trade during this time compared to 35 in the pre-lockdown days in February 2020. The study conducted by the Trade Records Analysis of Flora and Fauna in Commerce (TRAFFIC), a wildlife trade monitoring network and nongovernmental organisation working globally on the trade in wild animals, said that between February 10 and March 22, 2020, the number of animal poaching incidents was 35, while during the lockdown between March 23 and May 3, 2020, the number escalated to 88 (Badola 2020).

TRAFFIC, which operates as a programme division of the World Wildlife Fund for Nature-India, found a significant increase in reported poaching of wild animals in India during the lockdown period that is not restricted to any geographical region or state or to any specific wildlife area. The highest increase in poaching was reported to be of ungulates mainly for their meat, and the percentage jumped from 22% (8 of 35 reported cases in the pre-lockdown phase) to 44% (39 of 88 reported cases) during the lockdown period (Badola 2020).

The second group which showed a marked increase was the poaching of small mammals including hares, porcupines, pangolins, giant squirrels, civets, monkeys, and smaller wild cats. Although some have always been in high demand in international markets, most hunting during the lockdown period is presumably for meat or for local trade. Such cases of hunting for meat or local trade of illegal wildlife trading rose from 17 to 25% between the pre-lockdown and lockdown periods, the report said. However, there was less reporting of poaching and illegal trade in tortoises and freshwater turtles, with almost no seizures of these species during the lockdown period. TRAFFIC's estimates show that poaching doubled during the lockdown, even though more people were supposed to be staying at home (Badola 2020). Demand was, in part, driven by the fact that some people were either free or jobless and therefore took up trading in wildlife as an additional source of income.

TRAFFIC also said a total of 222 people were arrested in poaching-related cases by various law enforcement agencies during the lockdown period across the country, significantly higher than the 85 suspects reported as arrested during the pre-lockdown phase (Badola 2020). The 3 F's driving the illegal wildlife trade are food, fun, and fashion, together with traditional medicine. Common leopards were either poached or their skins seized in Assam, as well as in Jammu and Kashmir. Ivory and elephant tail hair are the most commonly bought elephant products. For consumers, they are a symbol of wealth and power. In addition, given their high value, the buyers are also people with significantly higher than average incomes, according to TRAFFIC (Badola 2020).

Recent urban myths also have had a significant impact on wildlife. Myths surrounding the medicinal properties of rhinoceros horns are no exception here. These myths claim, among other things, that rhino horns cure cancer, relieve hangovers, and enhance male virility. In addition, according to TRAFFIC, this is driving up demand from the average consumer (Badola 2020). Exotic species, like parakeets, doves, turtles, and snakes, especially those in India, are targeted to be kept as pets. Shatoosh shawls are made from the wool of a Tibetan antelope, fur coats or caps are made from the skins of tigers and pandas, and bags are made from the scales of pangolins and monitor lizards. According to TRAFFIC, more than 1 lakh of freshwater turtles and tortoises were poached illegally between 2009 and 2019 (Badola et al. 2019) (in the Indian numbering system, 1 lakh is equal to more than 100 000; in this case, then, that is more than 100 000 individual animals). Andhra Pradesh, Kar-

nataka, and Tamil Nadu are the major regions of turtle poaching. Over 11 000 tortoises and freshwater turtles have entered the illegal wildlife trade in India every year since 2009. Furthermore, the Indian star tortoise is one of the most demanded species on the international pet market. Despite enhanced surveillance by enforcement agencies, the trade of the Indian star tortoise continues to thrive along the foothills of the Himalayas and among the Gangetic flood plains (Badola et al. 2019).

3. HUMAN–NONHUMAN CONFLICT: ZONOTIC DISEASE

So, however much we (and other creatures) have appreciated the environmental respite borne of the Covid-19 crisis, it is also the case that the crisis has drawn attention to ethical issues regarding our relations with the nonhuman world and its creatures and how we cause animals to suffer through our own practices. This is most obviously true in relation to the zoonotic nature of the virus, thought to have spread from the Huanan Seafood Wholesale Market in China, a market that sells not only fish but other animals too, many of which are wild and are kept alive in cages until they are slaughtered just before they are bought.

Although the Huanan market is a wet market and wet markets do not usually keep live animals, this one did. The wildlife markets (rather than wet markets) of Asia are well known for selling live animals, some of which are illegally sold species. The animals are kept in cages, often alongside each other, in cramped, abysmal conditions that take no account of their welfare and that show a complete disregard for their species-specific needs. The animals are treated as mere commodities. Importantly, the conditions in which these animals are kept have provided fertile ground for the emergence of Covid-19, with humans' disregard for animals' interests indirectly causing its emergence.

It barely needs to be pointed out that these animals are sentient creatures, whose most basic interests, including interests in being free from pain, suffering, and discomfort, are completely ignored, with the animals being kept in conditions completely unnatural to their own kind. They are not treated as creatures with their own good, or as beings that matter morally, but merely as other objects on the market stall among nonsentient things. The fact that they can and do indeed suffer means that, at the very least, they have an interest in not suffering and that, therefore,

there are moral grounds for treating them with due consideration and respect. Indeed, there are sentientist (and biocentrist) grounds—and strong ones at that—for considering their treatment to exemplify some of the worst forms of speciesism that we see in the world today, notwithstanding the treatment of animals for the food and clothing industries, as well as the use of animals in the weapons, toxicity, and pharmaceutical industries (in which they are used in animal experiments). In addition, objection to such treatment does not require that all sentientists agree that these animals are creatures to whom the principle of equal consideration of interests applies. In fact, although many consider that animals and humans do have like interests in not suffering (see, for example, Singer 1995, Atfield & Humphreys 2016, 2017), some do not grant humans and nonhumans equal moral status, even though they recognise sentience as the basis for moral standing (see, for example, Wisenbourg 1993, DeGrazia 1996). Giving these animals even the bare minimum of consideration (in relation to their ability to suffer, for example, and with respect to their basic needs, which includes exercising their species-specific tendencies), let alone serious or equal consideration, would consequently mean that their treatment in these markets is not only morally impermissible but unjust (see Atfield & Humphreys 2016, 2017). For further details on sentientism, biocentrism, and the principle of equal consideration of interests, as well as their application in practice to our treatment of nonhumans, wild and domesticated, see Humphreys (2016, 2020a,b).

Because of the zoonotic nature of some diseases, it should be said that there are also anthropocentric reasons to consider the treatment of animals in these markets as problematic; indeed, it is in the interests of humans to see that they are not kept in overcrowded, filthy, or unnatural housing conditions and that their basic interests are provided for in a way that allows them to live naturally to their own kind and with minimum interference from humans.

Admittedly, the causes of zoonotic disease are incredibly complex (and beyond the scope of this paper). Suffice it to say here, that 'the drivers for the most part are ecological, political, economic, and social forces operating at local, national, regional, and global levels' (National Research Council 2009, Ch. 3, p. 77) and that incidences of such diseases are commonly linked to our food production systems. This is clearly apparent with regard to the emergence and transmission of Covid-19.

We are right to feel outraged at the treatment of animals in these markets and to be astonished by the

fact that the markets themselves are legal, despite sometimes selling illegal species. China and South Asia more generally have an extremely poor track history of animal welfare law and policy, and in a recent survey of approximately 5000 people across Hong Kong, Japan, Myanmar, Thailand, and Vietnam, 93% wanted governments to ban unregulated markets (Maron 2020).

4. FOOD PRODUCTION, INTENSIVE FARMING, AND THE RISING DEMAND FOR MEAT

The source of the virus has certainly highlighted our harmful and often violent treatment of nonhuman creatures for our own purposes, as well as the negative consequences for human health that can result from our disregard for the interests of nonhuman creatures. However, we do not have to delve too deeply into the animal ethics issues to realise that the reasons for our outrage in relation to the live animal markets of China provide reasons for being similarly outraged about our treatment of animals closer to home and all over the globe.

The global system of intensive food production in relation to animal-derived meat products is a system in which the primary goal is an economic one that aims for the highest production at the lowest cost. With a food system based on an economic model focused on gross national product (GNP)—which considers some but not all costs and certainly not the costs that are borne by the billions of farm animals used in the meat business every year (CIWF 2017)—factory-farmed animals live in appalling conditions, enduring atrocious suffering.

Although many countries in the Western world supposedly have strict animal welfare laws regarding the treatment of farm animals (the UK, for instance, has some of the highest standards of welfare in the world), we have to ask the following question: Strict in relation to what? Across the UK and Europe, and especially in the USA, the majority of farm animals are reared in factory farms and suffer enormously through intensive methods, including housing, transport, and slaughter methods. The suffering of factory-farmed animals is well documented, but for specific reading material on factory farming methods, see Singer (1995) Harrison (1964), and Johnson (1991).

Despite the unjustified nature of the practice (Humphreys 2010, Attfield & Humphreys 2016, 2017, Watson & Humphreys 2019), the number of animals intensively reared has been increasing (National

Research Council 2009), partly due to the rising demand for meat in developing countries, a demand which was predicted to double by 2030 (FAO 2003). Sadly, the plight of these animals tends to go unheeded, as do the environmental costs borne from the global meat industry.

Indeed, large amounts of land are given over to producing food, with a large proportion of that land being used to grow crops to feed and rear farm animals from birth to death. This conversion of a huge amount of plant protein into a small amount of meat protein is incredibly wasteful and arguably withholds vast amounts of grain that could be used to feed many hungry people, distribution problems notwithstanding. Livestock farming needs enormous amounts of soil space to grow crops to feed the massive numbers of animals reared (billions in our factory farms). It also requires an unimaginable amount of water (not least to feed the animals throughout their lives), and it is a major contributor to greenhouse gas emissions.

Meanwhile, as the world human population is rising, incidences of zoonotic diseases are increasing, impacts of climate change continue to be felt the hardest by the world's poorest communities, and approximately 820 million people across the globe continue to suffer from hunger (FAO 2020a). As stated by the FAO, 'Livestock production is the world's largest user of land, either directly through grazing or indirectly through consumption of fodder and feed-grains' (FAO 2003, Ch. 5, p. 158). However, global meat production is predicted to fall due to the current corona crisis (FAO 2020b). If ever there was a time to reflect on our current food systems and our treatment of animals within those systems, perhaps now is the time, while the market is contracting. The current crisis has certainly drawn attention to inequalities in the food system across the globe (FAO 2020a). The system is not only unjust for humans, it is unjust for nonhuman creatures too, particularly sentient ones whose significant interests in not suffering are not given due consideration; however, both sentient and nonsentient creatures continue to be adversely affected by the environmental impacts of intensive rearing, not least by rapidly declining habitats and thus the loss of climate refugia (Humphreys 2020b).

Of course, a sustainable system would not necessarily mean an ethical one. Moreover, world trade rules play a part in preventing ethical solutions, as does the current economic model as one that focuses on GNP. But there are systems that are not only sustainable but which can give serious (although not necessarily equal) consideration to a range of inter-

ests and which can consider the costs borne by living things and the environment. One such system is agroecology, a regenerative form of agriculture that uses an integrated crop–livestock rotation system, restoring a sustainable link between animals and the land. With conditions for disease rife in the overcrowded, stress-inducing housing of intensively reared animals, a system that promotes good animal health, a health-oriented system, is also needed (CIWF 2020). Agroecology combined with an alternate economic model, such as doughnut economics (Raworth 2017; see also CIWF 2020), could enable such a system by, for example, avoiding overcrowding and allowing farm animals to exercise their instinctive tendencies, whilst also providing housing which allows access to the outdoors and to fresh air. Such a health-centred system would enable farmers to avoid overusing antibiotics, an overuse which has a trickle-down effect on human beings. These are practical solutions that could be supported by bio-centric ethics or sentientist ethics (Humphreys 2020b).

5. CONCLUSIONS

Even though the human–wildlife conflict has been around for a long time, it has become more intense and widespread, with the number of incidents increasing. And in this time of public health emergency, humans and nonhumans are at odds and at risk. During the Covid-19 pandemic, humans amply demonstrated what James Serpell writes in his book *In the Company of Animals*: ‘[t]he human becomes the overlord and master, the animals his servants and slaves’ (Serpell 1996, p. 5). Humans were forced to stay indoors during the pandemic, and the economic costs imposed by the lockdowns led some people to resort to poaching to survive. It should be noted that the same situation has also contributed to an increase in the illegal wildlife trade in India and other South Asian countries. Simultaneously, many wildlife species are trafficked because of the myth that they have medicinal properties, despite the lack of scientific evidence to support this claim. However, such myths and superstitions about wildlife fuel illegal trafficking and can drive them towards extinction.

Furthermore, humans have long been plagued by epidemics caused primarily by infectious diseases spread by nonhumans, particularly wildlife. The current pandemic demonstrates that, so far, humanity has shown itself to be incapable of preventing the spread of new zoonotic diseases originating in ani-

mals. The various zoonotic diseases that are transmitted from animals to humans, such as Ebola virus disease, Nipah virus, and SARS-CoV-2 infections, originate in markets and from the exploitation of wild animals. Covid-19 falls into this category of zoonotic disease (WHO 2020). According to recent research, zoonoses account for more than 60% of all emerging infectious disease events, with the vast majority occurring in wildlife and increasing significantly over time.

The final focus of this paper was on the role of animal farming and meat consumption in the emergence and spread of infectious diseases. Animal farming is likely to contribute indirectly to the spread of pathogens from wild animals due to deforestation and biodiversity loss associated with the expansion of agricultural land use (Civitello et al. 2015). Consumption of wild animals also known as bushmeat is a major source of new zoonoses. Similarly, animal farming plays a significant role in the emergence and spread of zoonotic pathogens, as many common infectious diseases are transmitted to humans through domestic animals.

In summary, the paper emphasises that new types of risk posed by unprecedented global connectivity and rapid social and environmental change necessitate new approaches and models of practice in relation to our treatment of nonhumans. These approaches should take into account their interests as sentient creatures or, at the very least, their interests in not suffering, their interests in exercising their specific-specific tendencies, and their interests in freedom, functioning, and well-being. New—or at least newly implemented—economic models should also be considered, including doughnut economics (see Section 4), a model that can at least consider the interrelationship between nonhuman, human, and environmental interests.

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*Editorial responsibility: Darryl Macer,
Scottsdale, Arizona, USA*

*Reviewed by: S. Parahakaran, D. G. Lockwood
and 1 anonymous referee*

Submitted: March 4, 2022

Accepted: August 15, 2022

Proofs received from author(s): October 11, 2022