

63. Epidemics and food security: the duties of local and international communities

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Abstract

Over 60% of all epidemics have a zoonotic origin, that is, they result from the transmission of infectious diseases from animals to humans. The spill-over of diseases often happens because humans exploit and use animals. In this article, I outline the four most common interfaces that favour the emergence and spread of zoonotic infectious diseases: wildlife hunting, small-scale farming, industrialised farming practices and live animal markets. I analyse which practices serve human food security – and thus have a non-trivial purpose – and which predominantly have an economic purpose or serve as a symbol of wealth. I conclude that many practices that increase the risk for zoonotic infectious disease outbreaks actually do not contribute to the survival and food security of humans. I make two arguments in turn. First, I argue that in cases where the consumption and use of animal products does not contribute to the food security of a population, then this population has a duty to abstain from them, since they impose a grave and avoidable risk to themselves as well as to innocent third-parties. However, some communities must sometimes rely on practices that increase the risk of emergence and transmission of zoonotic infectious diseases, because they have no healthy alternatives. That is, the food security of the local population depends on the consumption and use of risky animal products. The second argument I advance is that, in such scenarios, the international community has a duty to provide the communities concerned with alternative food options, as well as economic and educational opportunities and technologies, in order to reduce the spill-over risk of infectious diseases. Given that abstention from such practices contributes significantly to the public good and benefits the international community, the latter has a corresponding duty to provide local communities which abandon such practices with alternatives.

Keywords: zoonotic infectious diseases, risk ethics, political duties, ethics of meat consumption

Introduction

Epidemics and pandemics can cause huge economic losses and great suffering – not only in the regions where they originate, but also in distant countries. This has been shown most prominently by the ongoing Covid-19 pandemic, which has caused economic losses of a still-unknown extent to many governments, businesses and individuals. It has also led to the death of over 1.5 million people, as well as causing long-lasting health issues in millions of people. Furthermore, it has caused intangible suffering all over the world in the form of lost family members and friends. Finally, the mental health of many individuals has substantially deteriorated (Cullen *et al.*, 2020; Kwong *et al.*, 2020), due to local lockdowns and reduced social contact, among other factors.

In what follows, I evaluate the key drivers of zoonotic disease transmission from an ethical perspective, taking into account the human interests at stake. Broadly speaking, there are four common modes of transmission of zoonotic disease: (1) the hunting and consumption of wild animals (often referred to as ‘bush meat’); (2) backyard farming, that is, small family farms; (3) the intensive farming of livestock or wild animals; and (4) live-animal markets (sometimes referred to as ‘wet markets’) (Espinosa *et al.*, 2020; Horby *et al.*, 2014; Magouras *et al.*, 2020).

I will begin by showing that practices that commonly increase the transmission risk of zoonotic infectious diseases are often not crucial for the survival and food security of the population concerned. Then, basing myself on an argument made by Jones (2020), I will defend the following claim: moral agents have a duty to avoid imposing unnecessary and serious risks on non-consenting third-parties. If there is no nutritional or economic necessity for a local population X to rely on products that substantially increase the risk of zoonotic infectious disease outbreaks, then such practices are avoidable and unnecessary. This provides population X with a strong reason to avoid such practices – for their own sake, but also for the sake of all those who could be detrimentally affected by a potential epidemic.

However, some uses of animals that substantially increase the risk of epidemics may be necessary for the economic survival, food security and health of a local population. In such cases, according to the second thesis I defend in this article, the international community has a duty to provide this population with alternatives – e.g. economic resources, food, or educational training – allowing them to lead a healthy life and earn a livelihood in an alternative, low-risk way. Finally, I will defend this claim against the objection that this could create harmful dependencies.

The drivers of zoonotic infectious disease transmission

It is estimated that over 60% of all infectious diseases in humans and 75% of all newly emerging infectious diseases have a zoonotic origin, that is, their root cause is a transmission of disease from nonhuman animals (hereafter: animals) to humans (Jones *et al.*, 2013; Vorou *et al.*, 2007). The reservoirs of these diseases mostly lie in wild animals, but domesticated animals frequently serve as a bridge for disease transmission to humans. As the United Nations Environment Programme (2016) notes:

Never before have so many animals been kept by so many people – and never before have so many opportunities existed for pathogens to pass from wild and domestic animals through the biophysical environment to affect people causing zoonotic diseases or zoonoses.

Roughly speaking, we can distinguish four main interfaces that drive the emergence and spread of zoonotic disease (Cutler *et al.*, 2010; Espinosa *et al.*, 2020; Magouras *et al.*, 2020):

1. **Wildlife hunting:** In some South Asian and African countries, local populations hunt, transport, butcher and consume wild animals on a large scale, which creates a substantial risk for the cross-species transmission of infectious diseases (Magouras *et al.*, 2020; Wolfe *et al.*, 2005). It is estimated that over 5 million tons of wild mammal meat feed millions of people in Neotropical and Afrotropical forests every year (Fa *et al.*, 2002). In addition to being a source of meat, bushmeat hunting generates income (Kümpel *et al.*, 2010; Wright and Priston, 2010), animal trophies (Lindsey *et al.*, 2007) and animal-based medicines (Alves and Alves, 2011).
2. **Backyard farming:** Small-scale backyard or family farming is a key pillar of food security in countries that lack easy access to plant-based protein (Espinosa *et al.*, 2020). Due to the often close proximity between farmed animals and wild animals, backyard farming carries a substantial risk for epidemic outbreaks (Henning *et al.*, 2011; Wang *et al.*, 2013).
3. **Intensive farming:** Over the last seventy years, small-scale farming has given way to massive facilities which can contain thousands of animals (both wild and domesticated) in crowded spaces (Graham *et al.*, 2008). The expansion and intensification of human agricultural practices (amongst other things due to increasing demand for meat) promotes encroachment into the habitats of wild animals, which in turn leads to ecosystem changes, bringing humans, wild animals and livestock into closer proximity. Dense living conditions and lack of genetic diversity, in turn, facilitate the rapid dissemination of diseases amongst farmed animals (Jones *et al.*, 2013; Horby *et al.*, 2014; Espinosa *et al.*, 2020).

4. Live animal markets: Some markets, particularly in certain Asian countries, sell live animals, both domesticated and wild (Magouras *et al.*, 2020). These markets often operate under poor hygienic conditions, which increases cross-contamination risks (Lo *et al.*, 2019; Sekoai *et al.*, 2020). In many cases, the consumption of wild animals sold on such markets does not seem to reflect nutritional or economic necessity, but rather amounts to 'a fashionable lifestyle and symbol of elite status' (Li Zhang and Yin, 2014), which is correlated to higher income and higher educational attainment.

There are other factors that increase the risk of the emergence and spread of zoonotic infectious diseases, such as living with domesticated animals. However, those listed here are among the most prominent ones. These uses of animals could be considered as morally problematic with regard to the welfare of the animals concerned: for example, dense living conditions on farms, without any opportunity to engage in species-typical behaviour, could be seen as detrimental to animal welfare. However, I will leave such considerations aside in this article. In what follows, my arguments are entirely based on the risks posed to human health by such practices.

The duty to avoid the non-necessary use of animals

The four practices outlined above carry a substantial risk for the emergence and spread of zoonotic infectious diseases and may result in epidemics. Their spread may, in turn, affect not only the local population, but also individuals in other parts of the world (as it is the case of the current Covid-19 pandemic). That is, these activities may cause substantial harm to the health, well-being and economic welfare of millions of people.

The fact of exposing others to unwanted and unsolicited risks that are detrimental to their health, well-being and economic welfare is morally relevant. Jones (2020) illustrates this point with an analogy: drink driving is morally wrong for three reasons. First, it poses an 'exceptionally high risk' of harm to others. Second, this risk is 'unnecessary', as there are alternatives to drink driving (driving sober, letting someone else drive or taking public transit). Third, the risk it carries is 'grave': drink driving can result in severe injuries and death, both to the driver and to others.

According to Jones, the same principle applies to the consumption of meat: in many cases, the consumption of meat imposes an exceptionally high, grave and unnecessary risk on others (as there are, in many cases, alternatives to meat). He gives three justifications for this claim: first, we have a duty to prevent individual harm to others if we can – we should not impose grave risks on others without their consent; second, we have a duty to avoid being complicit in collective harm – that is, we should refrain from consuming meat products that come from an interface with an increased risk for zoonotic disease emergence and spread; and third, there are considerations of fairness: not consuming meat deriving from risky sources for infectious diseases represent a huge contribution to the public good, insofar as the emergence and spread of such diseases is prevented.

Not all uses of animals that are correlated with an increased risk of EID transmission enhance the food security of the local population. As shown above, wildlife hunting, for example, is often an income-generating activity, and thus only indirectly linked to food security (Kümpel *et al.*, 2010; Wright and Priston, 2010). The consumption of wild animals from so-called wet markets is frequently a symbol of wealth, and unrelated to nutritional or economic necessity (Li Zhang and Yin, 2014). Additionally, many people currently consume more meat than they should from a health perspective, especially in industrialised countries (Battaglia Richi *et al.*, 2015; González *et al.*, 2020; Walker *et al.*, 2005). If we can refrain from activities and behaviours that impose risks on others, because there are lower-risk or no-risk alternatives, then we have a duty to do so.

Admittedly, some of the practices outlined above have a long tradition and significant cultural value. However, this value is not absolute, especially when it puts the health and welfare of others at risk and alternatives exist. That is, there is a duty to abstain from such activities when they do not contribute to food security and thus to the direct survival of the local population. The reason for this is that the maintenance of cultural traditions is less important from an ethical perspective than reducing potentially fatal risks for others.

The duties of the international community in no-alternative scenarios

There may be populations that rely on meat products to meet their nutritional needs. Imagine a scenario in which there is no alternative for a population or community X to products that increase the risk of infectious zoonotic disease outbreaks. What should be done in such cases?

The international community 'benefits' if community X reduces its consumption of products that increase the risk of emergence and spread of infectious diseases. Abstaining from such products thus contributes substantially to the public good, insofar as it reduces risk for everyone – not only for the local population, but also the international community. However, it would be disproportionate to require from community X that it sacrifice its personal well-being and health 'just' in order to reduce risk for the community and for others: that is, the welfare of such populations is more important than diminishing a 'mere' risk. However, given that they have no alternative food options, and given that, all things considered, it is preferable for all those who are potentially affected that EID events not take place, the international community (such as the governments of wealthier countries) should step in: they should provide community X with the means for risk-reduction which would otherwise not be feasible. In practice, this means that the international community should provide population X with no-risk or lower risk, affordable and healthy food alternatives (such as plant-based proteins or staple foods), but also with training opportunities and economic resources that would allow population X to turn to food and income options that do not present a risk for both themselves and others. For example, non-meat proteins could be promoted and support for more sustainable agricultural practices could be offered (Wright and Priston, 2010).

One might object here that this would lead to dependency on the part of local communities and states, which is morally problematic. If a population becomes dependent on the international community for basic goods, such as food, then the population loses its independence and becomes more vulnerable to exploitation, because the relationship is asymmetric.

Two points are worth noting here. First, as outlined above, I do not necessarily advocate a transfer of food alternatives alone. Rather, local populations can also benefit from educational training and offers of financial and other resources allowing them to turn to practices that do not carry a high risk for the emergence and spread of zoonotic infectious diseases. This would reduce their dependency on the international community for their food security. Second, the relationship between community X and the international community need not be asymmetric. Those providing a population X with alternatives to risky meat products 'benefit' from the sacrifices of the local population who use other food sources – and so does the local population, which faces a lower risk for disease outbreaks. That is, their relationship is not a one-way street, since both sides benefit from each other.

Conclusion

In this article, I made two arguments. First, I argued in favour of a duty to avoid products that carry a high risk for zoonotic infectious disease outbreaks, whenever the consumption of such products is unnecessary. Second, I argued that, in cases where the avoidance of such products is not possible (for

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example, due to a lack of alternatives), there is a duty on the part of the international community to provide local populations with alternatives – with respect not only to food, but also to economic opportunities and training. By adopting such an approach, the risk of zoonotic infectious disease outbreaks may be lowered substantially – which is beneficial not only to the community in which the outbreak was likely to happen, but also to people living far away who might have been negatively affected by a potential epidemic.

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