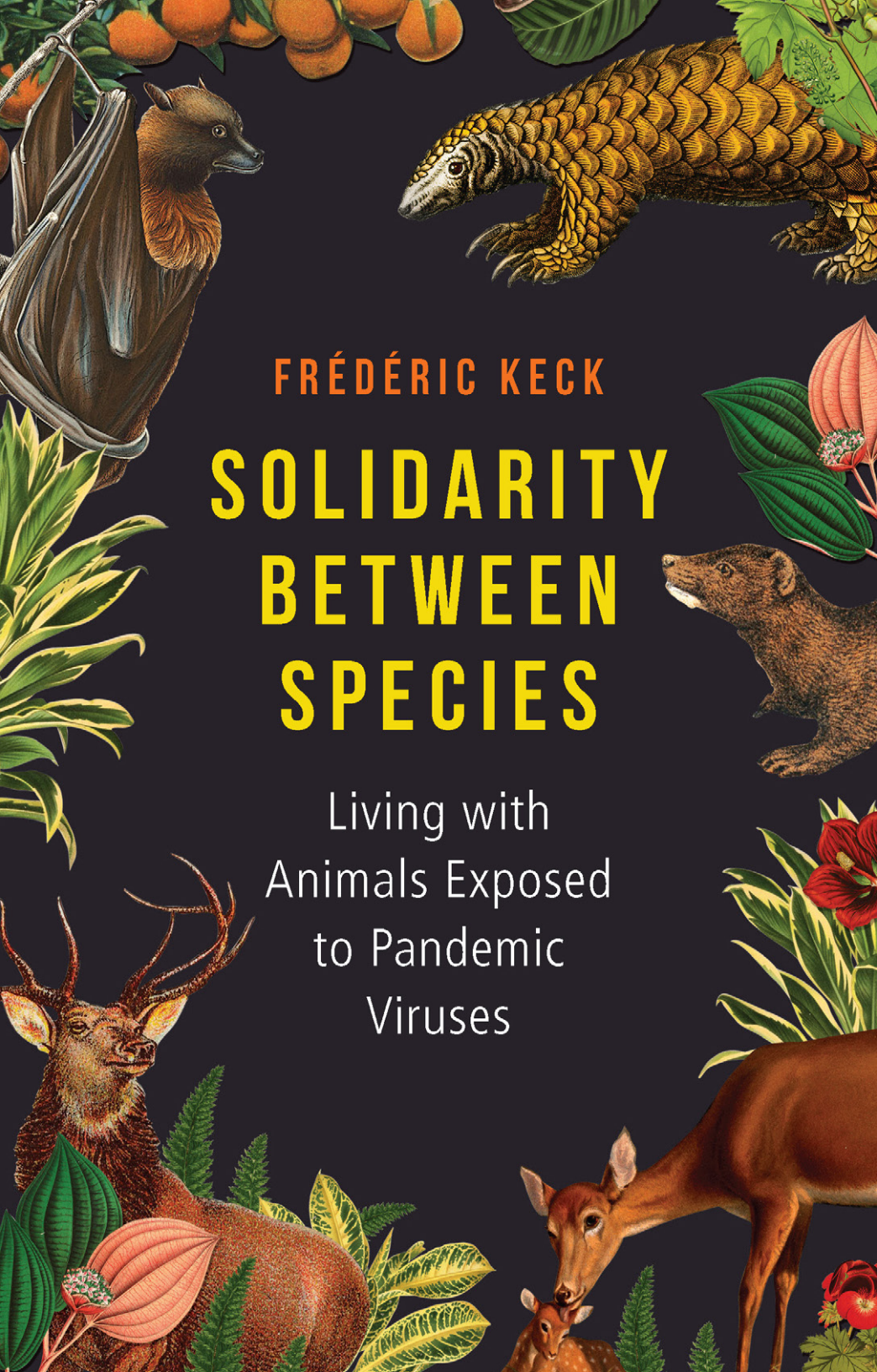

FRÉDÉRIC KECK

SOLIDARITY BETWEEN SPECIES

Living with Animals Exposed to Pandemic Viruses

Solidarity Between Species

For Sylvia,
art historian
and anthropologist of the future

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Living with Animals Exposed to Pandemic Viruses

Frédéric Keck

polity

First published in 2025 by Polity Press

Polity Press
65 Bridge Street
Cambridge CB2 1UR, UK

Polity Press
111 River Street
Hoboken, NJ 07030, USA

ISBN-13: 978-1-5095-6687-7 (hardback)
ISBN-13: 978-1-5095-6688-4 (paperback)

A catalogue record for this book is available from the British Library.

Library of Congress Control Number: 2024941809

Typeset in 10.5 on 14pt Fournier Std by
Cheshire Typesetting Ltd, Cuddington, Cheshire
Printed and bound in Great Britain by CPI Group (UK) Ltd, Croydon

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politybooks.com

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Acknowledgments

This book, begun at the start of the Covid-19 pandemic, after a series of media interventions and online conferences that led me to repeat the positions defended in my previous book *Avian Reservoirs*, sometimes at the risk of caricaturing them, has benefited from discussions with long-standing interlocutors and encounters with new ones in very real seminars, which in my view must continue to nourish intellectual life, despite the new possibilities offered by digital work.

I would like to thank Mathias Delori, Katia Genel, Jakob Vogel, Maiween Roudault, and Denis Thouard for hosting me at the Centre Marc Bloch in Berlin in the spring of 2022, as part of the Marc Bloch Chair at EHESS, followed by a summer school in September 2022, at a time when Germany was an excellent vantage point for observing political transformations in Eastern Europe and for rethinking emancipation at the intersection of philosophy and the human sciences.

For the past five years, the Master's degree in Environmental Studies at the École des hautes études en sciences sociales has been a venue for the invention of interdisciplinary teaching practices and knowledge contents, from which this book is partly derived. Thanks to Christophe Bonneuil, Marc Elie, Thomas Leroux, and Geneviève Pruvost for allowing me to take part in this intellectual adventure.

I would like to thank Philippe Descola, Pascal Lamy, and Frédéric Worms for their invitation to teach at the European Anthropology Chair at the École normale supérieure de Paris between 2021 and 2023, as well as my PhD students,

who took part in the seminar on human–animal relations: Keltoum Boumejdane, Rongtai Chen, Philippe Drugeon, Anna Dupuy, Mathilde Gallay-Keller, and Nan Nan. Thanks also to Emmanuel Didier for the seminar we ran together on "One Health" in 2022 as part of the "Humanités médicales" Master's program, and to Marc Fleurbaey for hosting me at the ENS's Centre de formation sur l'environnement et la société.

I was able to present the book's most daring hypotheses at the Cercle Lucien Herr's seminar on socialism. I would like to thank Milo, Sacha, and Ulysse Lévy-Bruhl for their discussion of these proposals, which owe them a lot.

This book has benefited from discussions I was fortunate to have for several years with Andrew Lakoff and Christos Lynteris. I am grateful to them for inviting me to present my research to colleagues at the Universities of Southern California in Los Angeles and St. Andrews in Scotland, as well as to Claire Sagan for inviting me to Vassar College, and to Domenico Perrotta for inviting me to the University of Bergamo and to the Congress of Ethnography and Qualitative Research in Italy.

Laurent Jeanpierre initiated this book on biopolitics and accompanied it with Bruno Auerbach and Stéphanie Chevrier through its wanderings to completion at La Découverte. I thank John Thompson for his early interest in the translation of this book at Polity.

The book benefited from the precise, helpful, and kind comments of Romain Graziani, Violette Pouillard, and Mélanie Roustan.

Joëlle Soler has built a strong link in her quest for "holy places" between the socialism of her homeland Tarn and the ecology of the Seine-et-Marne, where we now live. She knows how much I owe her, and for which I can never thank her enough.

Opening: Covid-19 displayed as pandemic and zoonosis

If an anthropologist of the future were to curate an exhibition displaying how humanity has experienced Covid-19, in the way that anthropologists of the past have presented distant societies to European audiences in museums, she might choose four objects and four animal species, which would represent the "material culture" and "ethno-zoology" of humanity today. These objects and animals have indeed populated the imagination of contemporary societies during this pandemic, in ways that remain to be analyzed and understood. The Covid-19 pandemic led humans to globally disseminate objects that had appeared in different places over the past two centuries, standardizing them according to international norms and hybridizing them with more traditional techniques of epidemic control. But Covid-19 is also a zoonosis, i.e. a disease transmitted between different animal species, which explains why the virus that caused it was so unpredictable. Here, then, are four objects and four animals, accompanied by information that might guide visitors through this exhibition.

A. Objects

– *The respirator.* Covid-19 is a respiratory disease, which first infects the lungs, with secondary symptoms in the nervous system such as loss of taste or fatigue, grouped together under the term "long Covid." Patients with severe respiratory symptoms, such as choking, were treated in intensive care hospital wards, using respirators to ventilate them artificially. These machines, which involve heavy interventions

on the bodies of patients who must be regularly turned over and may be placed in an artificial coma, require the constant presence of nursing staff at their side. In times of emergency, hospital space must be reorganized to accommodate these priority patients. These techniques take over from the "iron lungs" invented in Boston in 1928 to combat poliomyelitis, benefiting from advances in artificial respiration in aviation during the twentieth century. The production of artificial respirators, whether rudimentary or high-tech, was greatly accelerated by the Covid-19 pandemic.[1]

– *The mask.* Initially a protective tool for hospital staff, the "surgical mask" spread to the entire population to protect against the transmission of Covid-19 by capturing droplets from the mouth and nose. Mainly worn in public transport and enclosed public places, where it was sometimes imposed by governments through sanctions, it was also worn in intimate spaces, with some people reluctant to remove their mask in front of others for reasons of precaution or modesty. It has thus profoundly redefined what it means to be a person (the term *persona* designates the mask in Latin Antiquity) confronted with the threat of respiratory disease circulating in the atmosphere shared by humans. Manufactured industrially from plastic or more traditionally from textile, it has become one of the waste products of contemporary societies, raising new issues of recycling. An archaeologist of the future may find that the only trace of this pandemic is an increase in the layer of plastic produced by humans since the middle of the twentieth century. Indeed, thanks to the invention of the plastic surgical mask in the 1950s, this piece of cloth, introduced into hospitals in Europe at the end of the nineteenth century, and imposed in the public arena after the work of Chinese physician Wu Liande on pneumonic plague in 1910 and on the occasion of the Spanish flu of 1918, was transformed into an industrial product, in such a way that the stockpiling of masks for hospitals became a criterion for evaluating a modern state.[2]

– *The vaccine.* Covid-19 is an infectious disease caused by a virus called SARS-Cov2. In the absence of antiviral treatment for those who were already infected, and despite the hopes raised by advocates of hydroxychloroquine or artemisinin, vaccinating the uninfected population was the best public health strategy for curbing the pandemic, since it put an end to "stop-and-go" policies alternating lockdown and release of the population. The speed of vaccine production by pharmaceutical laboratories in Europe and North America, using the latest messenger RNA technology, surprised all observers and revived mistrust of vaccination, which has been a major trend on both continents over the last thirty years. The development of an inactivated vaccine by the pharmaceutical industries in Russia and China, less effective than messenger RNA vaccines but easier to distribute, and the World Health Organization's calls for international solidarity under the Covax initiative, making vaccines a "common good of humanity," have raised hopes on the possibility of sharing them with the countries of the South. The global distribution of a Covid vaccine offers a glimpse of a world in which SARS-Cov2 would be eradicated, but doses of vaccine would have to be manufactured regularly to respond to mutations in the virus. Two hundred and twenty years after its invention by Edward Jenner, and one hundred and forty years after its extension by Louis Pasteur, the vaccine, a pharmaceutical product supervised by the state and distributed to citizens as part of mass campaigns, has thus become an essential component of public health policies to combat pandemics.[3]
– *The cell phone.* This is a new public health tool linked to the digitization of contemporary societies, whereas the other three objects have been used to control epidemics for at least a century. Through applications containing barcodes, it can summarize data on individuals (their infection by the virus, their different doses of vaccine) and inform them about potential virus carriers in their environment. During

the Covid-19 pandemic, this application enabled individuals to make more informed decisions about their travels, and it allowed public authorities to monitor these travels. As a dematerialized version of the tracing policy chosen by certain countries to limit the pandemic as an alternative to confinement and vaccines, it is indissociable from the more rudimentary materiality of the test, a cotton swab that individuals have to insert into their orifices to find out if they are carriers of the virus. These applications and tests found a particularly well-developed form in China's "zero-Covid policy," reinforcing measures to control the population movements and to measure "social credit" that were already in place before the Covid-19 pandemic.[4]

B. Animals

– *The bat.* Coronaviruses very similar to those causing Covid in 2019 have been found among rhinolophids in southern China and Southeast Asia. While it had been known since the 1950s that bats could transmit rabies through their bite – which remains exceptional for certain so-called "vampire" species in South America – it was discovered in the 1990s that they were also transmitting new viruses called Hendra and Nipah to humans in Australia and Southeast Asia, through horses, pigs, or fruit they had infected. The emergence of SARS-Cov1 in China in 2002, causing the epidemic of Severe Acute Respiratory Syndrome (SARS), was explained with certainty by the transmission of a coronavirus – whose mild forms had until then been studied by veterinarians in pigs – from bats in southwest China to civets consumed in major cities such as Guangzhou. Two recent phenomena are mentioned to explain that new viruses are emerging in bats: deforestation, forcing bats to move to trees closer to human habitats, and new breeding practices for horses and pigs, bringing them closer to the forests and caves where bats breed, thus multiplying the number of intermediate species between bats and humans, and therefore the opportunities

for their viruses to be transmitted to new species. Over the last forty years, it has been discovered that bats harbor a large number of viruses that are potentially dangerous to humans, due to their unique characteristics: they make up a quarter of all mammalian species, they live in dense multi-species colonies where they exchange large numbers of viruses that constantly cross species barriers, and they have developed immune defenses that enable them to withstand the metabolic cost of flight, notably a microbiota of restricted size and mechanisms for repairing the chromosomes carrying their genetic information.[5]

– *The pangolin.* The identification of bats as reservoirs of coronaviruses left aside the question of the intermediate animal that transmitted SARS-Cov2 to humans. In April 2020, Chinese authorities suggested that the pangolin might be the intermediate animal between bats and humans, after viruses close to SARS-Cov2 were found by Chinese researchers in Malaysian pangolins.[6] This discovery turned the attention of health authorities and the media to the international traffic of pangolins, whose scales are consumed in traditional Chinese medicine as a remedy for fevers. The International Union for Conservation of Nature banned the sale of Asian pangolins in 2000, which redirected international pangolin trafficking to Africa. The pangolin is thus an indicator of the transformation of a traditional hunting practice into a prestige consumption practice organized by an international market, which can go as far as new breeding practices of wild animals to supply new forms of traditional medicine. But the pangolin was an emblematic species for conservation in China for the last twenty years, which may explain that it was brought on the public scene at the start of the Covid pandemic.[7]
– *The mink.* Mink farms tested positive for the SARS-Cov2 virus in Holland in June 2020 and in Denmark in November 2020, presumably due to infection by humans working on the farms. Health authorities were less concerned about

mink mortality in these farms, slightly increased by the presence of SARS-Cov2, than about the appearance of a viral mutation that could be transmitted to humans and compromise the undergoing vaccination campaign. Denmark, the world's leading producer of farmed mink for fur (with 28% of global production, followed by Poland and China), ordered the slaughter of twelve million mink using gas. As the decomposing corpses rose from the ground, farmers were forced to dig them up and incinerate them, sparking media images that travelled around the world. The European public discovered that mink had been farmed industrially since the 1850s in North America to compensate for the decline in beaver fur production by trappers, then introduced at the end of the nineteenth century in Northern Europe, where their fish-based diet was replaced by protein compounds. The mink was domesticated more recently than the ferret, which also belongs to the mustelid family and was prized in medieval Europe for its sociability, scent (musk) and ability to detect game, making it a companion species at court and for the hunt. More recently, ferret breeding has developed to provide laboratories with animal models for the study of respiratory diseases such as influenza, since ferrets sneeze like humans. An animal species that has long been involved in human social practices linked to hunting has thus been transformed into a commodity for a century, but the health crisis has once again made it a bearer of warning signals for humans.[8]

– *The deer.* While tests on dogs, pigs, poultry, and cattle have all been negative for SARS-Cov2, cats have been shown to replicate the virus, but not in sufficient quantity to cause transmission to humans.[9] In January 2022, an outbreak of Covid-19 was discovered in Hong Kong among humans who frequented a pet shop where Syrian hamsters had been imported from Holland: the slaughter of 2,000 hamsters in Hong Kong put an end to this route of disease transmission.[10] On the other hand, significant circulation of

SARS-Cov 2 has been discovered in white-tailed deer in the USA, with rates ranging from 30 to 40 percent depending on the states in which the deer population was tested. The origin of this transmission remains mysterious, whether it be infected carcasses or contaminated water, but such prevalence in wildlife precludes the use of eradication methods such as culling techniques applied to mink and hamster. Instead, the US wildlife authorities have launched an extensive program of regular deer sampling and a prevention campaign aimed at hunters to limit direct contact between humans and deer.[11] The discovery of cases of SARS-Cov2 in mink and deer thus qualifies Covid-19 not only as an emerging disease, in the sense that the virus would have crossed species barriers by passing from bats to humans via an intermediate species such as the pangolin, but also as a zoonosis, in the sense that the virus has the capacity to return to other animal species after passing through humans, in a permanent mutation mechanism that makes its definitive eradication impossible.[12]

Introduction: Wild thought about biopolitics

Using the argumentation and documentation methods of social anthropology, this book aims to answer the following question: how do we think about the forms of critique and emancipation in the age of pandemic viruses? It opened with a project for an exhibition on the Covid-19 pandemic because exhibitions pose the same problem as argumentations, but with different documents. An exhibition involves a "curatorial" approach that aims to heal (*cure*) humans through attention (*care*) to the things between which it is necessary to sort (*krinein*) in order to make them visible in public space.[1] Since we have all suffered the Covid-19 pandemic as subjects of contemporary societies, we can respond to the concerns and questions it has raised by displaying the material traces this event has left in our memories, as museums have done for societies of the past. But it is also possible to make a retrospective diagnosis of this pandemic by reflecting on the categories through which we think more generally about zoonoses and, through them, relations connecting us to all living beings.

The Covid-19 pandemic threatened the ideals on which modern societies are founded because it gave rise to archaic fears associated with contagion. States adopted authoritarian measures of quarantine, lock-down and vaccination, undermining individual freedom. The extraordinary spread of the SARS-Cov2 virus among human populations revealed inequalities between human populations in their exposure to diseases and in their access to healthcare technologies. But this pandemic has also highlighted new forms of solidarity

between humans, bats, pangolins, mink, and deer, since we have all been affected by the same zoonosis. While humans have reflected during the Covid-19 pandemic how they could emancipate themselves from constraining forms of power, they also realized they were exposed to the same diseases as other animals, who suffer from more violent forms of surveillance, vaccination, lock-down, and killing.

Therefore, the Covid-19 pandemic has questioned the relationship between life and power, in a way that forces us to ask what modern societies understand by "life" and "power," and to reset the modern project of emancipation on new foundations. What does it mean to "make live," "make die," "let live," and "let die," when human populations are locked-down in their homes for months to avoid contagion, sometimes dying alone for lack of access to healthcare, when citizens are encouraged to vaccinate themselves to contain an unknown virus, and can no longer access public places if they don't, when minks or hamsters are slaughtered to avoid viral mutations in their bodies, when bats are caught and bled to extract virus samples, when deer are kept away from domestic animals to prevent them from transmitting a virus that has already spread widely within their species?

This book approaches these questions through the concept of biopolitics, coined in 1976 by the philosopher Michel Foucault to describe the formation over the last two centuries of a power to "make live and let die." Many commentators have used this term to describe the techniques of quarantine, containment, vaccination, surveillance, and anticipation that enabled public authorities to limit the spread of Covid-19.[2] Reflection on the "power" involved in these biopolitical measures could lead either to the denunciation of a globalized state manipulating populations into buying masks and vaccines, according to an updated version of conspiracy theory, or to the more subtle but also more discouraging questioning of a power that infiltrates social interactions through individuals' suspicions about the infectious potential of their neighbors,

framed as a "capillary" view on power.[3] Conspiracy theory thus confuses two political registers, which Foucault aimed to distinguish: the sovereign register of the state, which acts through laws in the service of a people, and the biopolitical register of government, which acts through norms to protect a population. Noting the "capillary" extension of medical power into the beliefs and practices of modern individuals, conspiracy theory attributes to it a "deep state" that is more extensive than the forms of sovereignty. It is founded on the will to fight this invisible enemy, while it has not analyzed the conjunctural and reversible alliances between the state and government.[4] This book, by contrast, seeks to show that there is not a uniform biopolitics from which modern subjects should emancipate themselves, but several forms of the relationship between knowledge and power in modern and nonmodern societies, which redefine the project of emancipation according to the ways in which humans domesticate animals. It thus seeks to include animals in the modern project of emancipation according to the techniques of knowledge and power in which they are caught up.

When the term "biopolitics" was introduced into the social sciences by Michel Foucault in 1976, it essentially concerned human populations in the face of diseases such as plague, which has been controlled in the modern age by a policy of quarantine imposed on persons and commodities, as well as smallpox, which can be controlled by vaccination because it is not regularly transmitted from animals to humans. It did not seem to apply to animal populations, even though the emergence of the Ebola virus in 1976 demonstrated the role of primates in the circulation of new pathogens. Discussions of biopolitics therefore lack any consideration of what animals do when they introduce new pathogens into the human population. The control and monitoring of pandemics concerns not only cities where humans live in close proximity to each other, but markets, farms, forests, caves, where humans live with animals. How is biopolitics transformed when it operates

not in territories where populations are exposed to risks, but in infrastructures where disasters occur at the borders between species?

The notion of biopolitics appeared in public debate at the same time as the notion of zoonosis in the 1970s but, until then, they had rarely been brought together. The joint appearance of these two notions indicates that a transformation was underway in relations between the human species and its environment. On the one hand, health issues have played an increasingly important role in political organization, notably through risk insurance, to the extent that Michel Foucault defined man as "an animal whose politics place his existence as a living being in question."[5] On the other hand, the distribution of animal species has changed dramatically, with the mass extinction of a large number of wild species and the increase in domesticated species for human consumption, transforming the ecosystems in which microbes mutate.

Yet these two trends are conceived within quite different frameworks, which explains why they don't meet. The notion of biopolitics is conceived within the statistical framework of risk management, while the notion of zoonoses is conceived within the ecological framework of disaster anticipation. The conjunction between these two phenomena bears witness to a historical fact that becomes increasingly clearer today: while warning signals have multiplied over the last four decades about ecological disasters resulting from the extension of the industrial way of life, liberal societies thought of them as risks for individuals.

The founder of social anthropology in France, Claude Lévi-Strauss, posed the problem of disease control quite differently from Michel Foucault, using the term *pensée sauvage*, recently translated as "wild thought." By this term, Lévi-Strauss meant not "the thought of savages," but thought "in a sylvatic environment" (*à l'état sauvage*). When it finds itself in a forest rather than in a planned countryside, human thinking is not finalized by a performance objective, but elaborates a set of

classifications from animals and plants to solve all kinds of problems. According to Lévi-Strauss, Indian societies in the southeastern United States identify animals and plants in their environment to diagnose and treat disease: they "treat pathological phenomena as the consequence of a conflict among men, animals, and plants. Irritated by humans, animals send them diseases; plants, the allies of humans, counterattack by providing remedies."[6] This formulation of the biopolitical problem resonates strangely with some of the statements we have heard about the Covid-19 pandemic. Indeed, bats or pangolins have been said to "revenge," [7] and mink corpses emerging from Danish soil after slaughter as well as deer carrying SARS-Cov2 across American forests have appeared as "ghosts" haunting humans to potentially transmit the pandemic virus.[8] The idea of animal vengeance is a very strange one for modern societies, who posit a separation between humans and nonhumans in their intellectual capacities; it is closer to hunter societies, who attribute intentionalities to animals and plants to better mark the differences between specific materialities.[9]

When one says that "nature revenges itself," one explains the emergence of SARS-Cov2 by the intention of bats to send viruses to humans to punish them for deforestation, but this explanation makes little sense in the eyes of modern science, which emphasizes the random nature of biological mutations.[10] It is, however, the exact symmetry of the opposite thesis, according to which the emergence of SARS-Cov2 is caused by the intention of humans to manufacture biological weapons in order to frighten populations, and thus sell them vaccines protecting them against an evil manufactured by humans. This rather simplistic form of conspiracy theory attributes evil intent to humans, ignoring all the complications and uncertainties of manipulating biological material, just as the idea of bat revenge ignores the instabilities and complexities of the animal chain that led a coronavirus to travel from a forest in southern China to airports around the world. For ecologists who study the correlations between viral emergence

and biodiversity loss, the problem is rather to understand how the random mutation of a virus is selected and amplified by a change in the ecosystem, be it deforestation, climate change, urbanization, or industrial livestock farming.[11]

Organizing the encounter between Foucault's "biopolitics" and Lévi-Strauss's "wild thought" around Covid-19 means tying together two threads that were woven without intersecting between the 1960s and 1970s to think about this event: the random emergence of a new virus that crosses species barriers in a way that brings the global economy of human activities to a halt. When Foucault introduced the notion of biopolitics into the human sciences in 1976, it was the year of the publication of Gary Becker's book, *The Economic Approach to Human Behavior*,[12] which marked the extension of neo-liberal logic to all living beings; but it was also the year of the eradication of smallpox and the emergence of Ebola, which led international health authorities to anticipate emerging infectious diseases by monitoring pathogens that crossed species boundaries in animal reservoirs.[13] When Lévi-Strauss published *La pensée sauvage* in 1962, it was the end of the Algerian war, which put an end to France's colonial history, forcing anthropologists to invent new forms of collaboration with indigenous knowledges; but it was also the year of the publication of Rachel Carson's *Silent Spring* in the United States and the second edition of Frank Macfarlane Burnet's *Natural History of Infectious Diseases* in Great Britain, which warned of the effect of pesticides on the trophic chain of ecosystems in which humans live, and of influenza viruses circulating in wild birds and amplifying in domestic animals.[14] The neo-liberal revolution analyzed by Michel Foucault in the United States, which accelerated the global extension of capitalism by empowering individuals capable of taking risks, is inextricably linked to the failed reception of warning signals about the health consequences of ecological transformations, whether through the production of new toxins or the emergence of new viruses.[15] The Ebola virus emerging in 1976,

followed by HIV/AIDS, Nipa, Hendra, avian and swine flu viruses, up to SARS coronaviruses, was the first of a series of such warning signals.

If we think about it through this double genealogy, the biopolitical problem posed by the Covid-19 pandemic can be clarified. What is at stake is certainly how we can construct a free, non-authoritarian relationship with these technical objects – respirators, masks, vaccines, and cell phones – and thus appropriate them subjectively in everyday use. But it is also how we can interact with viruses coming from the wild, for which we have no immunity, in ways other than treating them as enemies to be eradicated. Foucault poses the biopolitical problem as that of the liberation of the living, but leaves aside the problem of the domestication of the wild, which is much more central in the thought of Lévi-Strauss.[16] Foucault affirms the subjective power of truth against normative forms of power, but pays little attention to the ways in which living beings are conserved against exploitation by a standardizing power, which Lévi-Strauss analyzed in indigenous knowledges. How is the ideal of truth and justice that lies at the heart of the modern project of emancipation reformulated, when it no longer concerns only relations between patients, doctors, pharmacists, and police officers, but also relations between humans and bats, pangolins, minks, and deer mediated by virologists, epidemiologists, veterinarians, and ecologists? If statements about pandemic viruses constitute a form of globalized truth, for example about the number of deaths they have caused, or their various mutations after their emergence, how can relations between humans and the other animal species they unequally infect be oriented toward environmental justice to take care of the diversity of lives exposed to them?

Zoonoses have led to collaborations between microbiologists, immunologists, epidemiologists, physicians, veterinarians, and ecologists around microbes that become pathogenic when transmitted between species. In the same way, this book is part of a collective effort to pose this problem with