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Preparing for future pandemics

Interview with Frédéric Keck

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Pandemic is one of those catastrophic events that trigger global mobilization. The rise of a new coronavirus in China in December 2019 confirmed the cyclical nature of the epidemics, after "the Spanish" (1918), the "Asian" (1957) and the "Hong Kong" flu (1968), as well as the Ebola Hemorrhagic Fever (1976), the HIV (1981) and the SARS (2003). These events force the authorities to deal with health, moral, geopolitical and economic consequences of pandemic crises, in a world where processes of urbanization, industrial agriculture, deforestation and climate change provoke dramatic transformations.

In this interview Irene Falconieri and Lorenzo D'Orsi talk to Frédéric Keck, one of the guests of "Listen to the pandemic" - the online speakers' corner organized on the occasion of the first lockdown by the Italian Society of Applied Anthropology (SIAA) – with the intent to emphasize the anthropological contribution to the understanding of the health and ecological crises characterizing our times.

Frédéric Keck is Director of Research at the Laboratory of Social Anthropology (CNRS-Collège de France-EHESS). After studying philosophy at the Ecole Normale Supérieure in Paris and Anthropology at the University of California at Berkeley, he has been researching the history of social anthropology and contemporary biopolitical questions raised by avian influenza. He has been the director of the research department of the Musée du Quai Branly between 2014 and 2018.

Lorenzo D'Orsi Should the pandemic make us rethink some of the supposedly sharp dichotomies at the foundations of Western thought? Indeed, the idea of clear dichotomies between nature and culture, human and non-human, have been challenged by spillover events that have demonstrated the strict relationship between species.

Frédéric Keck My work attempts to describe how the concept of zoonosis – diseases transmitted across different animal species – has changed the role of microbiology in shaping mod-

ern societies. Microbiology was founded in the 19th century on the possibility to observe and manipulate microbes to reduce their causality in human diseases. The tools of antibiotics and vaccines led microbiologists to ally themselves with public health administrations in the hope of controlling infectious diseases such as cholera, plague or tuberculosis. But when new infectious diseases emerged for which no vaccine or antibiotic was available, such as Ebola in 1976, microbiologists realized that nature was not an order of regularities that could be controlled by humans but a set of random mutations that should be observed with a constant vigilance. René Dubos, a French microbiologist working on bacteria in the United States, said in the 1970's that "nature strikes back ; it takes all the running we can do to remain in the same place". For Dubos, humans are not above nature but they constitute a force which disrupts the balance between other natural forces. With the reduction of the bacterial diversity in the soil, the destruction of ecosystems where different animal species coexist and the increase of industrial forms of animal breeding, new pathogens find niches to develop and reach the human species. This process known as "spillover" means that "animal reservoirs" have been transformed so radically that they are like viral bombs ready to explode. In the years 2000, when new pathogens circulated globally such as the H5N1 influenza virus or the SARS coronavirus, microbiologists said that "nature is the greatest bioterrorist threat", which meant that they needed to anticipate the emergence of new pathogens by following the silent mutations of microbes. When microbiologists describe themselves as "virus hunters", it doesn't mean that they "go into the wild" to track a distant nature but rather that they are able to take the perspective of microbes, in a way that can be compared to what anthropologist have described among hunting societies. Microbiology thus challenges the dichotomies between nature and culture because it allows humans to live in a world full of invisible entities whose behaviours are unpredictable but can be traced by techniques of visualization.

Irene Falconieri If pandemics are to become more common, as many from different perspectives and disciplines claim, do you think that the social sciences, particularly anthropology, can play a greater public role? If so, which one?

Frédéric Keck The role of social anthropology, in my view, is epistemological. It should not say if pandemics will become more frequent based on anthropogenic changes, but how we know about the future, and how different knowledges could be used to make the future imaginable. Social anthropologists should work with microbiologists to understand how the mutations of microbes are indicators of future changes of our environment, for instance how some viruses are viewed as potentially pandemic in contexts that are environmental but also political. But social anthropologists should also work with other groups of actors who perceive the future differently, to translate their views of the environment in a language that is accessible to experts and policy-makers. For instance, I have worked with poultry farmers and birdwatchers who have different perceptions of the future than microbiologists, based on the uncertainties of financial investment for the first and on the fight against species extinction for the second, but who could relate their practices to the horizon of a coming pandemic in a context such as Hong Kong. Other groups would have different views, for instance entomologists who relate the change of mosquito populations to climate change see pandemics as a way to alert the public on a threat that is often perceived as invisible. All these groups play the role of sentinels for pandemics, because they are on the frontline where viruses indicate threatening changes, and my role as a social anthropologist is to make these warning signals commensurable.

Irene Falconieri You oversee a project, funded by AXA, which is undertaking the first comparative study of the impact of social factors on the transmission of diseases from animals to humans in different societies. What can a health crisis teach us about the relationship between humans and environment and humans and animals? In this respect, can we consider the recent pandemic an ecological issue? In what terms?

Frédéric Keck A health crisis caused by a zoonosis, such as avian or swine flu or mad cow disease, is perceived by the media as an occasion to contrast two opposing views of animals in modern societies: the animal as a food commodity, whose safety is guaranteed by labels and inscriptions, and the animal as a living being, whose behaviour is managed by techniques of control. Hence the images of animals ready to take a revenge against their bad conditions of life by sending humans viruses, if we think of the representations of "cannibal cows" or "terrorist chickens". But this opposition comes from the distance modern societies have instituted between animals they live with and animals they eat. In other societies where this distance is not so long, zoonotic pathogens are not perceived in the same way. Often, as we have showed in the case of tuberculosis in Laos, the idea that animals can transmit pathogens is simply denied, because those who live with animals perceive different signs of disease than what is revealed by microbiology. When modern veterinary medicine is mixed with traditional modes of healing animals, as in Mongolia, some techniques of health management are considered inauspicious, such as the culling of cattle against brucellosis, because it spills blood in the soil where spirits live. As for Covid-19, because it has spread globally, it is more difficult to relate the experience of this respiratory disease for humans and its emergence among bats in south China. The images of Chinese wetmarkets, where no bat is sold, or of Chinese restaurant serving bat soups are used by the media to cristallize and exoticize the fear caused by zoonoses. But we have showed, working with Aboriginal communities who have lived with bats for centuries, that treating bats as therapeutic food is compatible with prescriptions and prohibitions on how to properly handle them. A pandemic of zoonotic origin can be considered as an ecological issue in that it questions the distances between humans and non-human animals in globalized societies, thus opening a stage for different perceptions of the ambivalences of living with other species.

Lorenzo D'Orsi In your work, you introduce the notion of 'preparedness' as a set of techniques for imagining pandemic events, where simulations, game-playing, sentinel species and scenario exercises contribute to prefiguring response actions, shaping the perception of risks and making an unknown future knowable. Do you think that preparedness to post-avian viruses like those you studied in Hong Kong, Taiwan and Singapore make possible the "domestication" of the recent pandemic? To what extent has preparedness influenced the political, cultural and moral perception of SARS-COV2?

Frédéric Keck Indeed, after the health crises caused by SARS, Asian societies have adopted techniques of preparedness for pandemic viruses which had been recommended a decade before against avian influenza viruses. They monitored farms with sentinel devices, such as unvaccinated chickens, they took samples from live animals sold in markets, they organized simulations of epidemic outbreaks in hospitals, they stockpiled drugs and vaccines against influenza. These measures were particularly developed in small territories with a high level of information, who were aware of the threats caused by the increased consumption of animals as food in Eastern Asia. Simulating a pandemic coming from China and transmitted to the rest of

the world was also a way to stage their differences with the booming economy of China on which they depended as hubs of import-export. So you are right to say that they "domesticated" the "wild" idea that "nature is the greatest bioterrorist threat", a view that had been formulated by Australian and American experts in the context of the "global war on terror" but which took a different meaning in a continent where China is perceived as a growing threat. In the Asian context, China is compared to a dragon whose silent mutations are observed by the "Tiger states" who are ready to attack it if it becomes dangerous. This is a metaphorical view that was often described in the media in Hong Kong and Taiwan. But more concretely, the idea that birds and bats coming from China can send viruses to the rest of the world by these sentinel territories resonates with Asian conceptions of divination, in which the future is read on the bodies of birds. The attention to birds and bats as ambivalent carriers of signs has a long tradition in Asian societies, which made more acceptable the necessity to prepare for a pandemic of influenza or SARS.

Irene Falconieri Initially, your interest in the relationship between human and non-human was triggered by food safety issues, rather than viruses and epidemics. These two fields raise similar questions and share many elements. Indeed, during the pandemic we have observed growing criticism of current models of economic development as well as the intensive farming system and its negative consequences in terms of pollution, loss of genetic diversity and health problems caused by the weakening of our immune system. Do you think the COVID-19 pandemic, as a destabilizing event, has fostered the emergence of long-lasting critical attitudes towards the human – not-human relationship, or is the spread of such critical attitude a limited phenomenon, related to the feeling of precariousness we experienced during the worst moments of the pandemic?

Frédéric Keck This is a major question: will the health crisis be remembered for its most painful aspects, such as the hospitals overwhelmed with patients, the long-term effects of the respiratory disease for those who suffer from other symptoms and the impact of lockdown on social life, or will it be a turning point in fostering an ecological awareness, connecting zoonotic viruses with other effects of the anthropogenic changes such as global warming or environmental pollution? The crisis was first a moment of suspension when people had the time to receive information on its causes and think about the acceleration of their way of life. But then techniques of control and surveillance were applied through digital technologies which produced troubles in this ecological reasoning. The work I have done with microbiologists convinces me that the use of digital technologies is not incompatible with an ecological engagement, that the surveillance of animal populations can go with forms of care and even identification with animals. For instance, following bats or birds through the viruses they share with humans can produce forms of solidarity between humans and animals at the global level. This is the main driver of the "One Health" policy which recommends that experts in human health, animal health and environmental health work together to anticipate future health crises and promote forms of sustainable coexistence between humans and non-human animals. As a social anthropologist, I think that we should bring more environmental knowledges in this framework which is often bottom-up from international organizations, but the emergence of this policy is certainly one of the positive outcomes of the recent health crises.