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# Tackling the COVID-19 crisis to create a new era for chimpanzee research and conservation

The first year of the COVID-19 pandemic, which has engulfed the people of the world, is coming to an end. For researchers of the two *Pan* species, it has been a year of emergencies and turmoil. The pandemic began in Wuhan, China in December 2019, spread to Europe in February, and gained momentum in March. In late March, African countries began to lock down because there were fears of an influx of patients, and research and conservation activities in each study site suffered significant negative impacts in a variety of ways.

The long-term project at Mahale is no exception. A graduate student who had three months left in her stay in the field had to return to Japan urgently before the airlines ceased operations, and the researchers who were due to stay this year had to postpone their plans. Since then, some postdocs in Kyoto have vigorously engaged in remote communication with local staff to maintain minimal functions at the Kansyana Research Station that allows for health monitoring to ensure that chimpanzees are not exposed to the new virus, together with collection of basic data, such as demography of the M-group chimpanzees. However, the Mahale project has traditionally emphasised direct observation. Continuous direct observation is particularly important for the study of social relationships. In fact, for the first time in eight years, we were watching a political drama in the forest where the alpha male might be overthrown. Six months before, during my fieldwork from August–September 2019, I noticed a change in the behaviour of the alpha male. Although this was the season when chimpanzees aggregated in large parties with many adult males, the alpha male repeated short stays in the core parties, while spending most of his time absent, presumably forming consortship with a cycling female. During this time, the beta male behaved as if he were the alpha male. For several months thereafter, graduate students and postdocs continued to observe the changing situation, and by the end of 2019, we received word that the alpha male had been replaced. I was excited and looking forward to hearing how things progressed, but then there was a break in the news.

When SARS-CoV-2 started to spread in Europe, researchers were quick to suggest that the virus would be more likely to infect great apes and that immediate measures such as suspension of ecotourism and reduction of field research should be taken from a conservation perspective (IUCN 2020; Gillespie & Leendertz 2020). Behind this quick action was the ordeal caused by several outbreaks of human respiratory diseases in chimpanzee study groups at several long-term study sites (Leendertz *et al*. 2006; Hanamura *et al*. 2015; Scully *et al*. 2018; Negrey *et al*. 2019). There is widespread recognition that all great apes must be protected from the risk of infection to viruses of human origin (Woodford *et al*. 2002; Carne *et al*. 2014).

In this context, it would be very helpful to know how researchers at other sites are protecting the health of their staff and the chimpanzees from the threat of COVID-19, while continuing to collect research data. Primatologist Prof. Sabrina Krief, who is a veterinarian and Director of the Sebitoli Chimpanzee Project in Kibale National Park, Uganda, presented a report about her project just after the lockdown at a UNESCO webinar on 11 June, "COVID-19 and Biodiversity Loss: Another Threat to Great Apes?" I asked her to contribute similar and updated information to Pan Africa News (PAN). She readily agreed and reported on the situation at Sebitoli in the first four months of the COVID-19 lockdown in Uganda (Krief, this issue). Her interest was not only focused on how to adapt our research activities to a pandemic, but also to how the social changes caused by a pandemic might affect the conservation status of chimpanzees and their habitat. The results challenge the optimistic expectation that restricted human access will have a positive effect.

How should we tackle the pandemic in the second year? I believe that there are four possible directions. First, we need to build "new styles of research" and provide the structures to support them. It is important to make *sustainable* and *proactive* changes that are not ad hoc, but will be positive for activities in the post-pandemic era. The time has already come for researchers to be connected to their research sites to varying degrees via the Internet. New styles of research could be devised, with local assistants trained remotely to minimise the number and duration of human visits to apes and to carry out high-priority research and conservation activities in a minimal, but productive manner. However, there are many tasks that researchers have had to perform in the field, such as direct communication with local counterparts and authorities, and negotiations regarding the livelihood, employment, and education of local staff. There is also a need to remotely replenish the research and conservation equipment and supplies that have previously been transported by researchers to the field. It is difficult to carry out these tasks while balancing the responsibilities that have doubled in Japan because of the adaptation to remote working. Therefore, it is necessary to secure stable agents and financial resources. Likewise, the conservation activities of the Mahale Wildlife Conservation Society, which until now relied on the volunteer services of researchers in the field, must all be carried out remotely from Japan.

Second, we should accelerate our efforts to disseminate our accumulated knowledge and experience, realising that this information may now be of some use in saving human lives around the world. Researchers of African great apes have witnessed the tragic deaths of chimpanzees to lethal outbreaks of viral infections (see above). In particular, chimpanzee researchers have painfully learned that their subjects are highly susceptible to human res-

piratory viruses, and that virulence can sometimes be as lethal as the Spanish flu in chimpanzees, while humans usually only show common cold symptoms. Most of the infection prevention measures recommended as effective in preventing COVID-19, including keeping a safe distance and wearing a mask to prevent droplet infection, are familiar to great ape researchers and ecotourism workers, who have been practicing them for more than a decade (Macfie *et al.* 2010; Gilardi *et al.* 2015). In a world where some people deny the threat of the virus and others refuse to wear masks and follow social distancing practices, we have the experience and responsibility to speak for the effectiveness of such prevention measures.

Third, for some researchers who have studied wild animals at the human–wildlife interface, it is natural to see that most pandemics are the result of environmental problems (Kretchmer 2020). If this is true, then it is human responsibility to solve it. Some have likened the COVID-19 pandemic to a natural calamity, like an earthquake or typhoon. While this is true in terms of precautionary stockpiling of food and water and people helping each other in times of trouble, it is not appropriate to see a pandemic as a natural phenomenon unrelated to human activities. The recognition that modern humans' excessive proximity to wildlife has led to outbreaks of new viruses is a reality very close to our nightmares in the field. It has been estimated that about 75% of emerging viruses are zoonotic pathogens (Taylor *et al.* 2001), and like HIV, Ebola, and other notorious emerging viruses, the origin of SARS-CoV-2 is likely to be linked to the trafficked wild animals (Andersen *et al.* 2020; Tang *et al.* 2020). Dr. Jane Goodall, an associate editor of PAN, called for people to take earnest action to reduce the consumption of meat, from both farmed and wild animals. She even suggested that if we do not take this opportunity to rethink our relations with nonhuman animals, there will be no future for humanity (Kretchmer 2020).

Lastly, it is important that we *Pan* Africanists stand in solidarity and promote the exchange of information and ideas between our study sites. While researchers are rivals for scientific achievements, they are also linked by a responsibility to cooperate on common interests. In the wake of the recent pandemic, it is easy to imagine that national and international societies and journals will have similar concerns, and PAN would also like to provide a hub. In the next issue, I would like to put together an article in which *Pan* researchers can share their experiences of the COVID-19 crisis and their outlook for the future. I would be very grateful for any suggestions regarding my ideas.

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