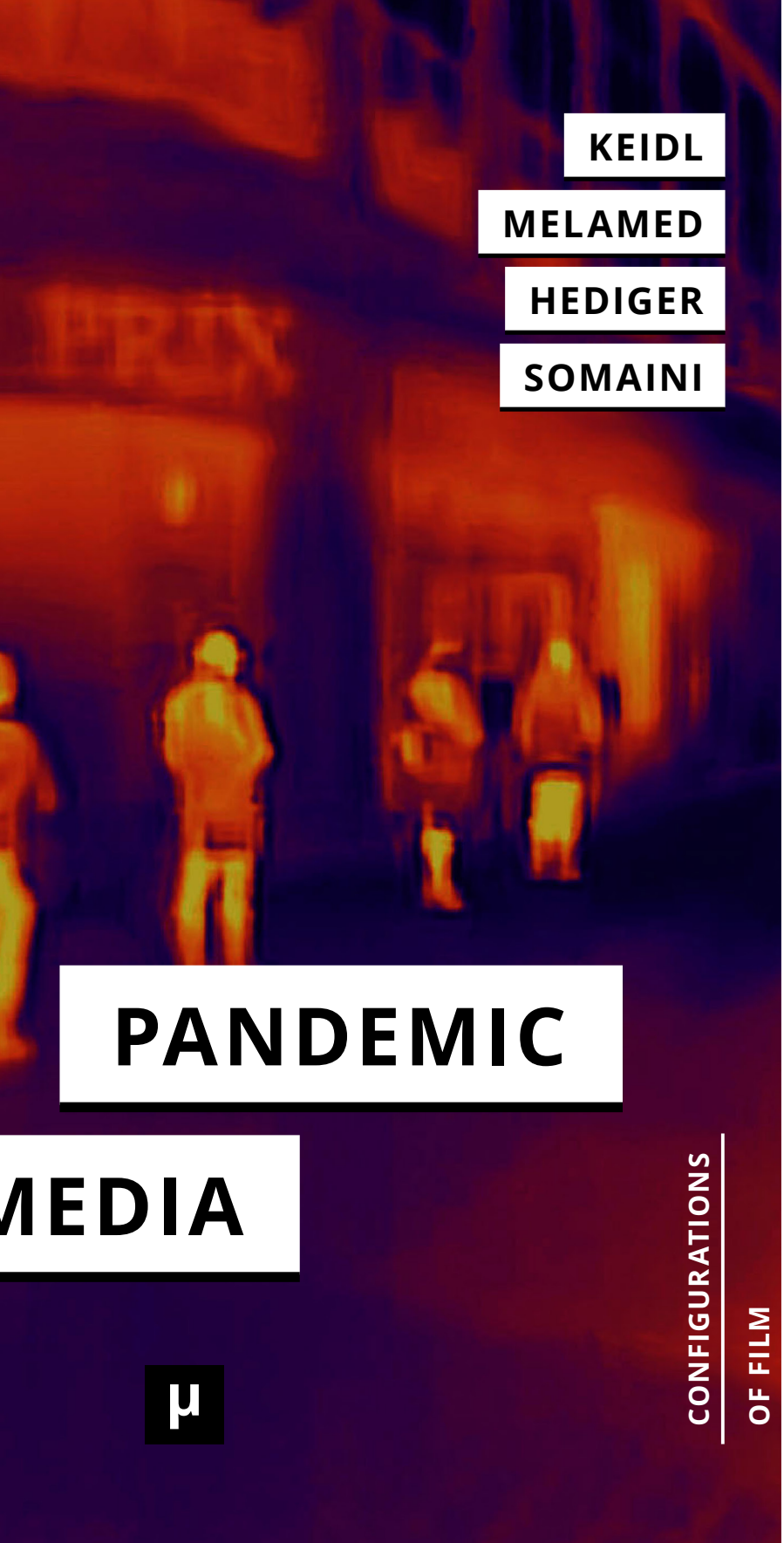

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Configurations of Film Series

Pandemic Media: Preliminary Notes Toward an Inventory

edited by
Philipp Dominik Keidl, Laliv Melamed, Vinzenz Hediger, and Antonio Somaini

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LABORATORY ANIMALS

HUMAN-ANIMAL DIVIDE

HYBRID BODIES

MEDIA THEORY

[2 4]

Mediating Disease: Scientific Transcriptions of COVID-19 into Animal Models

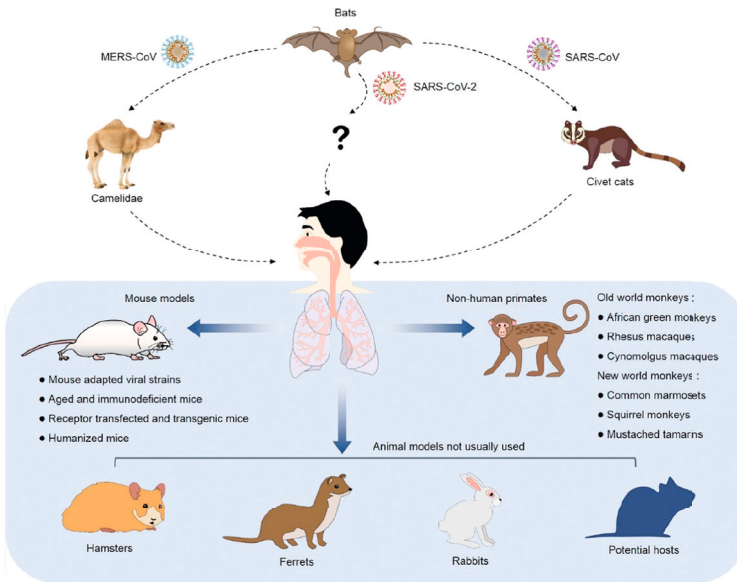
Benjamín Schultz-Figueroa and Sophia Gräfe

When the COVID-19 outbreak burst fully into the public's eye in early 2020, it brought with it a menagerie of animal affects and images. The spreading virus seemed to activate preexistent threads of human/animal relationships with a new urgency, as many struggled to reimagine their place in relation to a newly alien "natural" world and sought certainty and stability in the midst of turbulent change. In this essay, we examine a specialized sub-section of this discourse focusing on the bodies of non-human laboratory animals, arguing that in the current public and scientific debate they are not only metaphorically becoming the scene of various mediations, but corporeally as well. We conclude that such animal models have an ambivalent relationship to human/animal distinctions in an era of increasing pandemics, working as they do to shore up porous borders, while also creating new overlapping spaces between each category.

When the COVID-19 outbreak burst fully into the public's eye in early 2020, it brought with it a menagerie of animal affects and images. Non-human animals filled our screens and conversations, from speculations over the bat and pangolin progenitors of the virus, to worrying that domestic pets and farm animals were possible vectors, to debates surrounding the ethics of testing zoo animals before humans, to a renewed obsession with animal memes while sheltering-in-place (Wrage 2020). The spreading virus seemed to activate preexistent threads of human/animal relationships with a new urgency, as many struggled to reimagine their place in relation to a newly alien "natural" world and sought certainty and stability in the midst of turbulent change. In this essay, we examine a specialized subsection of this discourse focusing on the bodies of non-human laboratory animals, which in the current public and scientific debate are not only metaphorically becoming the scene of various mediations, but corporeally as well. As has been shown in studies of the history of science and the scientific use of media, the life science laboratory is a site where bodies are not only altered but powerful signs and images are created. In the course of the pandemic's disruption of an essentialized nature/culture divide, these laboratory bodies act as pandemic mediums that are both uncomfortably close to humans and yet also too far in a material sense.

Along with the images of hospitals or sick patients, a myriad of other discursive threads surrounded COVID-19's introduction to western audiences. Shortly before the colorful icon of the novel virus became the emblem of the infectious disease, statements from western commentators—whether epidemiologists, journalists, politicians, or environmentalists—had an essential early influence on the image of the pathogen. Many expressed concern, horror or disgust at so-called "wet markets" in China, street markets where "wild animals" are being traded and consumed. Some were frightened by the consumption of 'bat soups,' some warned of the too close and too dense settlement of human and non-human habitats and thus invoked racist prejudices and fears to blame the disease on impure relations with nonhuman animals (Taylor 2020). The majority of European and American audiences became aware of COVID-19 not as a purely medical problem, but as a cultural-civilizational shock. It appeared above all as a problem of unacceptable mixture: of decent and indecent diets, of "cultural" and "wild animals," of reasonable encounters with nature and foolish excursions into the epidemiologically dangerous wilderness. Human bodies now did not seem to be safe, clean, and distinct. Bats, pangolins, humans, tigers, dogs, primates, llamas were all imbricated with each other for a brief moment as simple biomass—both infected and infectious. The ways of infection were unclear (via surfaces, body fluids, or the air? through the hands, nose, or mouth?) and therefore everywhere. The symptomatology, pathogenesis, and spread of the disease stood against efforts at localization, tracking, and containment.

Perhaps nowhere was this truer than in the use of non-human animals as models of the disease. Faced with a ballooning number of cases and the high mortality rate of COVID-19 infections, state-led prevention and containment measures henceforth aimed at halting the intermingling of human and non-human bodies; working to stop the flow of people and goods in cities and around the world, and to establish barriers between bodies and their environments. At the same time, animal bodies were being invasively transformed in virology laboratories across the world to resemble human physiology and microbiology as much as possible. Here, enduring questions about the efficacy, best-practices, and applicability of animal experiments were reinvigorated under the intense pressure generated by the search for a treatment and vaccine. The scientific community underwent a moment of hectic material scrambling as it worked to produce an animal model of COVID-19 (Eisenstein, 2020).



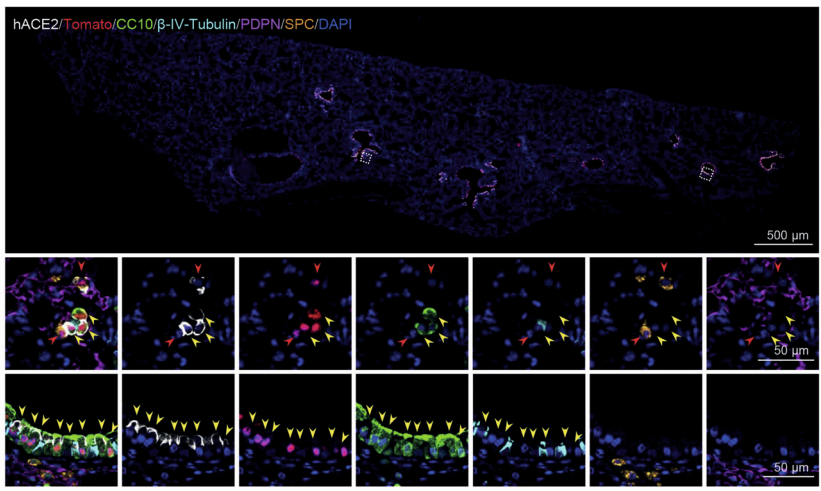
[Figure 1] Illustration of diverse animal test subjects (Source: Yuan et al. 2020)

Animal models have long been essential for developing new treatments, and each new virus requires an elaborate evaluation process in which the manifestation of the disease in a particular animal must be compared to how it manifests in humans. COVID-19, with its long list of possible symptoms and uncertain effects on the body, created an especially difficult challenge for investigators. In some ways, it is similar to previous coronaviruses, like severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS), which have previously been modeled with civet cats, camelidaes,

monkeys, mice, hamsters, ferrets, rabbits, among other species (fig. 1, Yuan et al. 2020, 950) MERS-CoV in 2012 and SARS-CoV-2 in 2019. Yet, each of these models had to be hurriedly reconsidered if they were to be used to fight COVID-19. As the science writer Michael Eisenstein outlines in the June 2020 issue of *Nature,* the genetic makeups of most lab animals differ meaningfully from humans, causing COVID-19 to express itself in incomparable ways. Through gene therapy or transgenic modeling, animal cells have been made more similar to human cells—mice can be "humanized" as one virologist describes (Sun et al. 2020, 6)—but these procedures often result in complicating factors that will skew an experiment's results and quickly kill the animals involved. Primates, whose anatomy and physiology more closely resembles that of humans, have also been infected with the disease in an attempt to generate better models, but with little success (Rockx et al. 2020). Alternately, COVID-19 has been adapted to the cells of particular lab animals, but this effectively created a new strain of the virus that differs significantly from the one in humans. Finally, and most successfully, microbiologists are now literally rewriting the genomes of mice and other lab animals through the relatively new gene editing technology CRISPR/Cas9, causing their cells to behave more like humans when contracting the disease (Sun et al. 2020). Eisenstein ends by citing Dr. Chein-Te Tseng, a microbiologist at the University of Texas Medical Branch, who concludes that "for COVID-19, there is no single animal model that will fully reflect the human disease… but if we combine all these animal studies together…we can probably get a good picture of the pathogenesis" (Eisenstein 2020, 168). Here, the animal body as a pandemic media—not unlike the insect media described by Jussi Parikka (2010)—does not simply serve as a moral vehicle for a metaphorical hybridization of the "human body," but rather provides the material, organic, and molecular components for a biotechnological simulation of human life.

How to evaluate this complex and evolving use of animal media? It seems clear that we are witnessing a scientific apparatus being majorly tested and torqued under extraordinary circumstances. On the one hand, the crushing urgency of COVID-19 has led to further intensifying the objectifying servitude of animal bodies in an attempt to overcome the epidemiological crisis. This intensification has the potential to further exacerbate the longstanding political problems of "species projection," which historians of science have demonstrated are often premised on racist and sexist definitions of "the human" that end up compounding social and cultural hierarchies even as they aspire to universal relevance (Bolman 2018, Neel 2016, Glick 2018). No matter that animals and humans are deeply entwined in these experiments, the time of the Chthulucene, Donna Haraway's speculatively longed-for period of interspecies solidarity (Haraway 2016; Haraway, Lipperini, and Durastanti 2020), has not yet come. There is no shared pandemic reality here between human experimenters and non-human animal subjects, who are increasingly

atomized, hybridized, and abstracted (fig. 2). These animals are made to function as tools and service providers for a biotechnological encounter with unclear boundaries and protective devices. Their noses serve as *indicators* for the pathogen, their bodies as a *simulating diagram* of its course, their organs and cells as *models* for medical solution scenarios.



[Figure 2] An example of abstraction and atomization in a staining analysis of mice test subjects. Taken from a collection of images depicting the test subjects through a variety of lenses. (Source: Sun et al. 2020)

But at the same time, the final consequences of this moment for scientific research and animal modeling have yet to be fully realized. Microbiologists and virologists working to develop "humanized" animal models in a time of extreme and unique crisis may point to the manufacturing of a new reality, which could have uncertain effects in the future. The "shared suffering" of the lab—which Haraway (2008) so eloquently argues must be kept in mind to comprehend both the need for important medical experiments and the devastating pain felt by animal experimental subjects—may yet broaden out into a wider social dynamic, as humans/animal distinctions generally are reconsidered in an era of increasing pandemics. If, as experts predict (Bett 2020), climate change, extinction, and habitat destruction lead to increasingly frequent and devastating zoonotic diseases, the stakes of these types of experiments will be amplified to global proportions.

How a disease is rendered within the corporeal media of laboratory animals will have ramifications well beyond the walls of the lab, and the meaning of this scientific media will be politically and culturally contested at an unprecedented scale. Already, the association of COVID-19 with animal bodies and scientific discourse has been activated by political actors seeking to define the disease's impact on government policy and public opinion. We can see

this in the xenophobic obsessions with Chinese "wet markets" (Walzer and Kang 2020) and the rightwing weaponization of epidemiological concepts like "herd immunity" towards neo-Darwinian ends (Hanson 2020). As ecofascists promote ideas of the Earth cleansing itself of human inhabitants (Sherronda J. Brown, 2020), the rightwing embrace of their own post-anthropocentric ethics highlights the dangers of this moment, as well as the possibilities. No longer solely the subject of a specialized or elite discourse, animal models, like other animal images and symbols, will be increasingly central to how society positions itself in relation to a rapidly mutating and evermore perilous concept of "nature" in the Anthropocene.

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Philipp Dominik Keidl, Laliv Melamed, Vinzenz Hediger, and Antonio Somaini (eds.)
Pandemic Media: Preliminary Notes Toward an Inventory

With its unprecedented scale and consequences the COVID-19 pandemic has generated a variety of new configurations of media. Responding to demands for information, synchronization, regulation, and containment, these "pandemic media" reorder social interactions, spaces, and temporalities, thus contributing to a reconfiguration of media technologies and the cultures and polities with which they are entangled. Highlighting media's adaptability, malleability, and scalability under the conditions of a pandemic, the contributions to this volume track and analyze how media emerge, operate, and change in response to the global crisis and provide elements toward an understanding of the post-pandemic world to come.

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