

Preface: Amidst a Global Pandemic

“Who can use the term ‘gone viral’ now without shuddering a little? Who can look at anything any more — a door handle, a cardboard carton, a bag of vegetables — without imagining it swarming with those unseeable, undead, unliving blobs dotted with suction pads waiting to fasten themselves on to our lungs?”

Who can think of kissing a stranger, jumping on to a bus or sending their child to school without feeling real fear? Who can think of ordinary pleasure and not assess its risk? Who among us is not a quack epidemiologist, virologist, statistician and prophet??”

Arundhati Roy, “*The Pandemic is A Portal*,”
03.04.2020

The following book is a revised version of my PhD thesis, which I handed in for review in February 2020. While finalizing it, I included a footnote on this ‘new’ virus in China and the biology-based discrimination that soon followed it around the world. #iamnotavirus was trending around that time and I felt it would only be fitting to include this entanglement of biology and culture at least as a side remark. When rereading my thesis prior to defending it in November 2020, I had to laugh out loud and shake my head. Little did we know that life would change dramatically – that we would all become biological risks to each other. That life as we knew it would indeed stand still.

A global pandemic, endless quarantining, biologists and epidemiologists becoming new superstars, discourses of risks around the clock, national health measures, increasing skepticism of science, medical headlines each and every day. Who knew that our life could be so...biological? As a lot of scholarship in the medical humanities, in science and technology studies, in biocultures has already demonstrated: *Our lives have always been*

biological. This pandemic has only brought it to the forefront, to the headlines, once more and with a vengeance. SARS-CoV-2 has highlighted our „biological citizenship” (Rose and Novas) with an intensity we did not expect. It forced us to confront our biological risks and to try to understand them. It has shown us that globalization truly knows no borders and limits, that we are deeply intertwined with all that surrounds us, no matter how small or seemingly insignificant.

While preparing my thesis for publication, ‘the pandemic’ has had its first anniversary: vaccinations programs have started (mainly in rich countries), mutations have occurred that seem to make ‘the virus’ more dangerous and more effective (based on our current knowledge), and countries still try to grapple with how to best address this challenge and contain new waves of infections (with differing success). Many of us have been ‘at home’ for a prolonged amount of time now, have not seen friends and loved ones, have not been able to say goodbye or hello; jobs have been lost, livelihoods threatened or destroyed, new burdens shouldered. This preface wants to set some of the biocultural discussions in my dissertation into this new context, this new situation. And it wants to highlight how ‘do-it-yourself’ (DIY) biology and medicine is present also amidst a global pandemic, as first responses, creative solutions and political activism.

SARS-CoV-2 has demonstrated how much force the biological has over culture, society, politics, and the economy, on a global scale. As the introductory quote by Indian novelist Arundhati Roy illustrates, for most of us biology has become deeply ingrained into our everyday life – biology has come to the forefront of our daily actions and interactions during the last year. But the pandemic, as Andy Horowitz writes, is not just biological but also cultural: “The history that scholars will come to name ‘the Covid-19 pandemic’ ultimately will have as much to do with the social world the virus encountered as it does with the virus itself.” (n.p.) This pandemic makes the inherent connection between the world of biology and the world of culture blatantly obvious – a deep entanglement that Chapter 2 of this book discusses in more detail. This is not just true on a more philosophical or abstract level but also on a very concrete one: During the course of the Covid-19 pandemic the role of pop-cultural media for science communication and the dissemination of facts and knowledge has become even more prominent. Not just the virus, its biological properties, daily infections or biopolitical measures are constantly reported on, but also epidemiologists and other experts have become new media personalities. In “Epidemic Entertainments” Nancy Tomes claims that diseases and epidemics have gained a new cultural visibility due to modern communication media and the new globalized threat they pose (626). Ever since the early 20th century – with its parallel rise of mass media and germ theories of disease – accounts of viruses, germs and epidemics have fascinated, scared and educated people. This pandemic is no exception. One of the first examples of ‘pandemic productions,’ as we could call them, is the 17th season of the medical drama *Greys Anatomy*, which was among the first shows to directly address the pandemic and its reality in hospitals. Instead of the usual dramatic surgeries and exceptional cases, the fictional doctors now primarily care for Covid patients and their work is dominated by safety protocols and personal protective equipment (PPE). These imaginary, fictive engagements give faces and voices to an ominous mass of healthcare workers struggling at the frontlines of the pandemic – applauded and neglected at the same time. Similar, ‘real-life’ attempts can be found on social me-

dia with images of healthcare workers in PPE or after intensive PPE use, physically and mentally collapsing under the sheer burden placed on them.

Stories of disease, Tomes claims, are not just entertaining but also educational: In news media accounts and journalism, stories of disease serve to perpetuate scientific facts out of the laboratory and clinic into the households of the masses (643). They become media of mass education as well as mass responsabilization. As such, popular media have the potential to increase the scientific literacy of their consumers: scientific and biological facts are presented, explained and discussed – from the biology of the virus to scientific estimates and projections about the course of the pandemic, to different types of vaccines and their working mechanism (cf. Ch. 2). However, especially in the public and political climate of a deeply divided American Presidential Election Year, Covid-19 has made the rifts in American society even more apparent: A considerable number of people do not seem to believe in science and disregard political guidelines; skepticism and conspiracy theories about the origin of the virus, political measures or vaccines abound – and this trend of Covid Deniers is not limited to the US. In an overflow of information also misinformation flourishes. Between all the facts, data and opinions presented on (social) media, it becomes hard to distinguish claims, to determine what is right and wrong, contextualize, evaluate sources, especially if people are not “scientifically literate” (cf. Ch. 2.1). Like a magnifying lens, Covid has amplified tendencies such as alternative facts or conspiracy theories and at the same time given them a higher urgency, when sticking to rules and trust in scientific knowledge and guidelines can help contain the virus and save lives.

The ‘viral spread’ – in the positive and negative sense – also in culture demonstrates that this pandemic is as much cultural, social, political as it is biological. “Just as people’s so-called ‘pre-existing conditions’ shape their individual vulnerability to Covid-19,” Horowitz writes, “social pre-existing conditions shape the course of the pandemic broadly.” (n.p.) Reminiscing on the nature of the virus, Soraya de Chadarevian and Roberta Raffaeta argue that this pandemic is another instance that demonstrates how the social and biological world are inextricably connected (5). I would suggest that also this contingency, the inability to disconnect the virus from our social activities and daily life, our culture and economy, heightens our perceived vulnerability to this new danger. What the pandemic has demonstrated is that we are all biological, as mundane as that might sound. Each person we meet has become a biological risk factor, leaving us vulnerable even where we previously have felt safe – at home, in our communities, with families and friends. During the course of all this, we have been faced with new choices to navigate, which might directly impact our own health and that of our loved ones but more indirectly also impact our healthcare systems and our society’s ability to cope with such a crisis. Covid-19 intensified our perceived and experienced biological vulnerability.

The result of this vulnerability is also anger, hate, discrimination, and racism, which leaves some bodies in even greater states of vulnerability. Anti-Asian hate crimes and discrimination have led to a social media outcry under the hashtag *#iamnotavirus* already during the first few weeks of the pandemic and they have continued even as the hashtag lost its allure and moved out of the news cycle. Especially in the US, against the backdrop of Black Lives Matter protests against police violence, Covid-19 has also

become a matter of race. Covid is not “a great equalizer” as it has been proclaimed by some. Instead, intersectional approaches show how some people are at greater risks. As Clyde W. Yancy writes, increased risk is attributable not only to (individual) biological risk factors, but also to socio-economic realities and “pre-existing” health care disparities. Collected data have shown that especially ethnoracial minority groups face a higher disease burden, which could be attributed to different causes: they tend to be employed under precarious conditions, belong to low-income communities, reside in higher density living arrangements, lack access to health care or health insurance, or suffer from more pre-existing medical conditions and comorbidities, also as a result of their social and economic conditions (Berkhout and Richardson 51).

In scholarly responses to the pandemic, references to Foucault and his notion of biopolitics abound. And it is certainly true: Lockdowns, wearing face masks, practicing social distancing, reducing contacts, staying at home, washing hands in the name of *#flattenthecurve*. These containment measures are all biopolitical strategies aimed to facilitate life, in which citizens are called upon to act responsibly towards the self and the whole population. As Malcom Brady argues rules have power when they either make sense to us individually and collectively (then they become institutionalized and normalized) or when they are enforced through fear or force (3-4). Both have been at play in this pandemic: Governments and states have increased surveillance measurements and managed their population to a greater degree (Sylvia 3). Especially surveillance technologies such as contact tracing apps and the lack of data security they provide have been at the center of attention and debate in this context.¹ At the same time, people are tasked with taking more and more responsibility for their own health and their own decisions – a trend that the pandemic has made more visible and concrete for many people (Sylvia 3).

In general, biopolitical strategies, as they were used also in response to the pandemic, often are debated controversially. Their connotations also in scholarly discussions are mostly negative: They are argued to be disciplinary, state-controlled, coercive, peer-controlled measures of surveillance, ‘biopolitics of control’ and top-down regulations of everyday life and personal freedoms. And while all these perceptions are certainly true and should not be neglected, I also want to reverse the idea of control and instead think of *biopolitics of care* that were visible in the first months of the pandemic. Such caring biopolitics are motivated by an ethics of empathy, care, and solidarity. They were located not solely in government restrictions, but in community acceptance, an “affective atmosphere” (B. Anderson) of cohesion and belonging: “We are all in this together, let’s see how we can help and get through this!” Paroles to close ranks and hold on were invoked to protect more vulnerable populations against this new and unknown ‘enemy.’ In Germany and other European countries, this spirit was visible in the beginning, motivated people to endure new restrictions to their individual freedom – and it worked.

1 cf. Kampmark on the rise of surveillance technologies, contact tracing apps and so forth to monitor the spread of the virus, with different regard to data privacy.

'Hacking' Covid-19

The 'biopolitics of care,' the vague urge to act and help, turned into something very concrete, material, in grassroots responses aiming to 'hack' the pandemic and our responses to it. During the first months of the pandemic, Cindy Khotala writes, the global maker communities' response was fast, "a surge of enthusiasm and a rush to printers" (n.p.). When many countries reported a lack of PPE for health care staff – and even less for 'ordinary' citizens – people sprang into action and organized DIY alternatives. Annika Richterich looks at how UK hacker and maker communities responded to these shortages of healthcare equipment during the first wave of the pandemic using open-source design, laser cutters, 3D printers, and sewing machines. The lack of PPE brought maker communities into conversation with health professionals with the aim of developing and producing urgently needed supplies, such as face shields/visors and scrubs, masks and mask strap holders, or even "aerosol boxes" for intubation of Covid patients (161). Their work, as in many countries, was coordinated directly with affected healthcare professionals, responding to their individual needs.² From my experience, this surge of collaboration and community work did not stop with those people who would consider themselves as part of a (somewhat formalized) maker community: Sewing patterns for DIY masks were distributed widely on the internet and in mainstream media, supplies such as elastic straps were in high demand (at least in Germany). Before commercial production could start, self-made masks were produced for personal use or donated to health care facilities. As the *New York Times* reported, "makers" around the world organized online to discuss, collect, evaluate and distribute all sorts of instructions: from masks and face shields to hand sanitizer and ventilator (parts) (Petri). For Richterich such practices are also a form of "critical making," a political response to a politics of austerity in the UK health care system, in which making as a type of activism tries to make up for systemic problems and political mismanagement in healthcare sectors (160). Such practices, she also contends, are not new to this crisis but have been part of DIY health and wellbeing movement in different guises (162). Indeed, some of the practices I discuss throughout this book are exactly such types of activist responses to ethical dilemmas, problematic distributions of access and power.

The „citizen-biotech-economies" (Meyer, "Build") that feed into and are the result of the rise of DIY biology and maker spaces have also provided tools and spaces for different types of DIY practices in responses to the recent pandemic: For example, in May 2020 the *MIT Technology Review* reported on Ian Hilgert-Martiszus, a former lab technician and programmer, who had done a DIY trial on Covid-19 antibodies among 40 of his friends and acquaintances. He and his test subjects wanted to know whether the colds, fevers, and runny noses they had experienced in the past few months were Covid-19 symptoms. In March, Hilgert-Martiszus bought kits to test human blood serum from a Chinese supplier and began testing. As a lab technician he knew what he had to do and was able to borrow some of the equipment from a nearby university. However, he says „I

2 Of course, these practices of making were also faced with practical and ethical problems, such as existing regulations for health products. Are DIY solutions as effective as tested products? cf. Richterich 163.

am just doing it at home. This is total citizen science.” (Regalado, “This man assembled”) In April he posted his results and set-up online – before any of the big medical centers did so: putting his DIY effort, for a short while at least, into the “forefront of the search for antibodies” (Regalado, “This man assembled”).

But also states and governments made use of maker approaches and the willingness of citizens and societies to participate. Hackathons were organized to deal with the after-effects of the pandemic, to address pressing issues from the perspectives of citizens or to design technologies that help to counter new, rising waves of infection. One example of state-led interventions with DIY methods are reports on a government study in the US: As the *LA Times* and *US News* reported, during the summer of 2020 6,000 families were taking part in a large study to find out how kids and teens are affected by the virus and answer the pressing concern of transmissions between kids and adults – with possible consequences for the opening of schools, daycare and so forth. The participants, however, were not examined by doctors but performed DIY nasal swaps twice a week in their own home. They received testing supplies via mail, answered surveys and collected their own specimen: from nasal swaps to blood and stool samples. Their homes became medical test centers. In the articles, one participant in this government-funded study explained: “We were excited to be able to feel like we could contribute somehow [...] This virus is so unknown. Any little bit we can do felt like we were doing something to help.” (L. Tanner) Through their participation in this study, I would argue, they also performed their biological citizenship: They voluntarily and eagerly self-educate themselves and integrate biological knowledge and testing into their everyday life. They donated their biological material for the community at large, for the greater good. It was their responsibility, as good biological citizens, to do what they can to help.

Many people in the maker movement knew and hoped that their solutions would be used as a last resort, an alternative in case of need and not a replacement of tried and tested materials. Still, the flurry of action and fast development of DIY solutions have tangibly demonstrated the strength of open-source principles and community-based work. The fact that so many people responded to this biological crisis with hands-on action, the striking wave of (more mundane) DIY activities during the first months of stay-at-home orders and quarantining have made ‘making’ and DIY visible as a trend once more. In times of crisis, making has drawn people together to create community and show solidarity, against this invisible new danger to everyone.

Appreciation

On a personal note, faced with the unknown and uncontrollable in hindsight I am very grateful for these first few months of collective action and solidarity that the pandemic has brought us. Before there was time to politicize, it was time to act, make and make do. I want to use this space to also thank some of the people involved in the ‘making’ of this book. Where to begin and where to end? I could go back in time and thank my parents, who bought me endless shelves of books as a child, fueling my love of words and stories; or even *Grey’s Anatomy* for sparking a brief desire to become a doctor as a youth, fueling my interest in the culture and representation of medicine. This book,

however, would not have been possible without the encouragement of my dissertation advisor, Rüdiger Kunow, who not only inspired me to take on this project, but patiently read through the hundreds and hundreds of pages I gave him and provided valuable feedback and notes. His hints to shorten drafts were mainly executed unsuccessfully on my part. Sorry, dear reader! Thanks is also due to Marc Priewe, the second advisor, who provided important insights where I could be a bit more critical and less enthusiastic. The organizers and participants of a postgraduate conference in Mannheim *Life Writing in the Digital Age: Quantification, Optimization and the Self* (Sept. 2017) have provided valuable feedback on my thoughts about personal genomics and optimization, and the organizers and participants of the 15th Annual Spring Academy at the Heidelberg Center for American Studies (March 2018) have critiqued a first draft of Chapter 4, providing new input on ideas and ideals of individualism in American society. Thank you to Juliane Straetz for our feedback and discussion session on the overall outline of the thesis! My dear proofreaders should also not go unrecognized, especially Jochen Salfeld, who commented from the standpoint of a molecular biologist and researcher as well. The members of the examination committee, Nicole Waller (Universität Potsdam), Rüdiger Kunow (Universität Potsdam), Marc Priewe (Universität Stuttgart), Marie-Luise Raters (Universität Potsdam), and Monika Pietrzak-Franger (Universität Wien), deserve thanks for their insightful questions and comments on the finalized version – and the latter also for sparking my interest in the Medical Humanities in the first place. During my bachelor studies she told me that she would also read my PhD thesis (if it ever came to that), I remembered and so she did! Without the unwavering support of my family and friends this whole project would not have been possible. Thank you to my partner, who at times has been a bigger champion for this book than I have, and our daughter, who has taught me a new outlook on life and how it should be lived! And last but not least, back to my parents, who urged me to at least do *something* during a time of uncertainty and confusion – this *something* led to this!

There has been a rush to respond to the Covid crisis also in many academic fields – and I am certainly no exception to that rush: “The need to both understand and to contribute is pressing, even while we too experience exhaustion, fear, loneliness and grief. There is a tension between the sense of exigency, to step up and act, and the need to withdraw and protect our own.” (Khotala). Many of these responses, I am sure, are also personal projects of ‘making sense,’ of contributing somehow to public sense-making processes. In this sense, attentive readers will find some references to the Covid-19 pandemic spread throughout the pages and footnotes of this book. Almost every topic of interest that I will discuss can be related to this acute biological crisis, directly or indirectly. That tells me they are here to stay. What leaves me wondering is what our world post-Covid will look like? Will it differ from the past, and if so, how? How soon will our memories of this very embodied, very biological time start to fade? What can we take and learn from this experience? As Arundhati Roy writes, the Covid pandemic has managed to bring the engines of capitalism to a halt, possibly buying us time to determine whether or not we want to fix it or “look for a better engine.”

“Our minds are still racing back and forth, longing for a return to ‘normality’, trying to stitch our future to our past and refusing to acknowledge the rupture. But the rup-

ture exists. And in the midst of this terrible despair, it offers us a chance to rethink the doomsday machine we have built for ourselves. [...] Historically, pandemics have forced humans to break with the past and imagine their world anew. This one is no different. It is a portal, a gateway between one world and the next. We can choose to walk through it, dragging the carcasses of our prejudice and hatred, our avarice, our data banks and dead ideas, our dead rivers and smoky skies behind us. Or we can walk through lightly, with little luggage, ready to imagine another world. And ready to fight for it." -- Arundhati Roy, "The Pandemic is a Portal", 30.04.2020

One year in, I am not certain if I share her optimism about the possibilities opened up by this pandemic – but I sure hope she is right.

Potsdam, 30.04.2021