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A Sociology of Literature Perspective on the Viral Role of Science During the COVID-19 Pandemic

Throughout the current pandemic, a tension can be observed between science and other social agents that structure the societal approach to the viral threat. Among others, COVID-19 both distorts and reinforces the imperative for the autonomy and social responsibility of science in modern societies. This contribution looks upon the elevated status of scientific research during the pandemic by utilizing a small corpus of pertinent literary fiction that includes Philip Roth's *Nemesis*, Albert Camus' *The Plague*, and Lawrence Wright's *The End of October*. An in-depth reading of these narratives offers a perspective on the absence, necessity, and function of the institution of science and as an epistemic prism to reflect upon its societal role as the primary producer of insight on and solutions to the pandemic.

1. Introduction

As epidemics have been occurring throughout human history, literature and the fine arts, among others, often provide documentation of and reflection on the innumerable suffering, contingencies, and social changes brought and catalysed by the emergence and spillover of infectious diseases. For instance, *The Art of Death*, painted by Pieter Bruegel during the Dutch and Flemish Renaissance, condenses the critical juncture and the, allegedly, inevitable impact of the bubonic plague on Medieval Europe and its feudal systems. In that sense, such cultural artefacts are both products and means of societal self-observation and might therefore also possess the potential to contemplate some aspects relevant to the societal repercussions of the present COVID-19 pandemic. A striking aspect of modern pandemic literature is the depiction of an increasing human capacity to cope with the primary health challenges and various side effects of infectious diseases in contemporary times. This individual and collective agency is in part backed up by the development and growth of science into a distinct social field that produces substantial knowledge within and beyond its internal contexts of application that underpin modern public health systems. Throughout the pandemic, a tension can be observed between science and other social actors, especially within political and economic systems, that impacts the societal response towards COVID-19. Nevertheless, scientific research remains a foundational element in adapting to and mitigating

the direct and indirect consequences of the outbreak. Thus, in terms of Michel Serres' concept of the parasite (1982: 14), it could be argued that the disease both interrupts and consolidates the imperative for the autonomy and social responsibility of science in modern societies.

This contribution seeks to reflect on the viral role of science in society during the global pandemic by combining a sociology of science perspective that is informed by theories of social action and functional differentiation with a particular sociology of literature approach. The literary foundation for these considerations rests upon an in-depth reading of three pertinent novels: Albert Camus' *The Plague* (2013 [*La Peste* 1947]), Philip Roth's *Nemesis* (2010), and Lawrence Wright's *The End of October* (2020). In line with this, the second chapter offers a brief background on the connection between science, modern society, and the structural challenge of infectious diseases, while the third chapter constitutes the main part of the paper that, after a short view on the utility of fiction as a sociological resource, reconsiders how each of the three novels offers a particular actor-centric and thematic perspective on the role and figuration of science in pandemic societies.

2. Infectious Diseases, Science, and Modern Society

Wherever there is physical movement and material exchange within and between human communities, infectious diseases caused by pathogenic microorganisms, such as bacteria, viruses, parasites, or fungi, can potentially and do actually evolve, spread, and cause considerable harm. Moreover, increasing land use, for instance the conversion of vast swathes of natural habitats for agricultural, urban, or economic purposes, increases the emergence, transmission, and spillover risks of infectious diseases for humans (Wolfe / Dunavan / Diamond 2007: 280; Gibb et al. 2020: 398). The continuous formation of modern societies into a global system of "tightly coupled interactions that allow for the continued flow of information, money, goods, services, and people" (Centeno et al. 2015: 66) over the last two centuries has only accelerated this particular feature of the Anthropocene, in which nature and society have become intertwined to such a degree that the fate of one impacts that of the other (Zalasiewicz et al. 2010: 2231).

Connected to and partially responsible for this duality is a structural ambivalence of modern societies that is, at least in part, grounded in a macro-sociological phenomenon of functional differentiation, often coined as one of modernity's principle characteristics: Most if not all contemporary societies deemed modern can be characterized by an advanced and ongoing functional differentiation into a set of largely self-contained social subsystems with distinct functions, institutionalized forms of social production, and cultural value spheres that overlay other forms of social differentiation (Schimank 2015: 415). On the one hand, as an outcome of the processes of functional differentiation, the institution of science has been transformed into a highly productive social entity that has the functional prerequisite for producing and certifying knowledge. On the one hand, this may have substantially increased society's capacity to meet some of the manifold public health challenges that come along with infectious diseases. On the other, related developments of modern society, especially within functionally differentiated economic subsystems that could be characterized as considerably indifferent towards aspects that are not part of their immediate considerations, are the main causes of a variety of ecological and societal risks that include human-induced climate change and, in part as a result of the former, the emergence and spread of infectious diseases (Beck 1992: 175). On a side note and to emphasize the ambivalence of the societal impact of modern science, it manifestly and latently contributes to the co-production of such ecological and social risks as its desiderata, applicable knowledge, technology, and education, provide foundational resources for functional practices in other social subsystems.

From that standpoint, COVID-19, caused by a newly occurred coronavirus strain denominated as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) (Wu et al. 2020: 265), can simply be considered as a new entry into what might be called the long pandemic century of emerging infectious diseases that started with the Spanish flu in 1918 (Honigbaum 2019). As we are still amid the pandemic, several of its clinical, virological, and epidemiological aspects remain unclear. Nevertheless, COVID-19 has few equivalents in modern times due to its substantial clinical severity, high transmissibility, and, above all, rapid spread around the globe. While the social and economic

impact of the pandemic is manifold, including a global recession with almost no precedent, it has also provoked a comprehensive global response, especially in the societies of North America, Europe, and East Asia (Worobey et al. 2020), in which science, as an essential element of an ensemble of societal institutions that seeks to govern all aspects of COVID-19 as a biopolitical project (Foucault 1991: 100), takes the vital role to produce solutions to the viral threat of SARS-CoV-2 in form of clinical treatments, vaccines, and strategies for disease containment. It is therefore of interest to ask how science copes with this increasing social responsibility, while maintaining its autonomy in which strict intellectual criteria (shall) trump any other when judging the validity of scientific assertions (Merton 1973: 134; Gläser et al. 2020: 5–9), an allegedly essential prerequisite for its functionality.

3. Novel Perspectives on Viral Realities

Even though a lot of interim analysis has already been done over the course of the ongoing pandemic, clear-cut answers to the question of how the system of science copes with the various challenges of COVID-19 are stuck to remain of fragmentary, anecdotal, and, at least to a certain degree, speculative character. In that regard, literary narratives that imagine and explore the interconnectedness of pandemic-affected social realities represent a perhaps unapparent, but apt point of departure to think about a sociological perspective that focuses on the subjective, actor-centric experience of the changing conditions and contingencies in a viral society. While modern literature and sociology have always competed for (and sometimes collaborated on) the prerogative interpretation of society, literary narratives may help to make sense of the social reality and are therefore of considerable utility for sociological considerations (Lepenies 1992: 14; Farzin 2019: 139). From such a point of view, fictional texts can be tools "with which to probe into reality, testing certain features of the world as described in the text" (Longo 2015: 140) as they present themes, events, and actors that can be considered as a-referential representations of the social. In the following, I try to utilize thematic applicable aspects of three rather semi-dystopian pieces of pandemic fiction as a guiding prism on how the emergence and outbreak of infectious diseases shape the relationship between modern science and society.

3.1 An Everyman versus Polio

Polio is a highly contagious, crippling, and potentially deadly infectious disease caused by the eponymous poliovirus whose transmission has been considerably contained and subsequently reduced through the application of active immunization strategies since the development of the first successful vaccine treatments in the 1950s and 1960s (Wolfe 2013: 151). Before these epidemiological and virological breakthroughs, widespread polio epidemics frequently appeared in the first half of the 20th century, for instance in warm urban areas throughout the United States. This outlines the fictional background of Philip Roth's *Nemesis* fictional, but nevertheless plausible story of a polio outbreak in Newark, a city in the state of New Jersey, in the summer of 1944. Already the first sentences of the novel present the disease as a mysterious, hardly discernible, and yet growing threat to the health of Newark's inhabitants:

The first case of polio that summer came early in June, right after Memorial Day, in a poor Italian neighborhood crosstown from where we lived. Over in the city's southwestern corner, in the Jewish Weequahic section, we heard nothing about it, nor did we hear anything about the next dozen cases scattered singly throughout Newark in nearly every neighborhood but ours. Only by the Fourth of July, when there were already forty cases reported in the city, did an article appear on the front page of the evening paper, titled "Health Chief Puts Parents on Polio Alert," in which Dr. William Kittel, superintendent of the Board of Health was quoted as cautioning parents to monitor their children closely and to contact a physician if child exhibited symptoms such as headache, nausea, stiff neck, joint pain. (Roth 2010: 1–2)

In contrast to the active social response to the current pandemic, the characters of the story do not expect or get any precise information on the transmission dynamics of and, above all, guidelines to avoid infection with the poliovirus. In that sense, the novel depicts, among others, how a modern, urbanized society copes with an infectious disease without the simultaneous expertise of comprehensive public health bodies as these admit that they "'don't know who or what carries polio, and there's still some debate about how it enters the body.'" (104)

If polio is the non-human perpetrator, none of the present social agents, including the institution of science, is able to take the role of the detective that seeks and accomplishes to solve the mystery, at least to such a degree that it impacts the events, actions, and interrelationships of the ordinary everyman personified by Eugene *Bucky* Cantor, the novel's main protagonist. A playground director who becomes infected with and

paralyzed by the poliovirus over the course of the plot, he blames himself for being the alleged polio carrier that caused the contagion, impairment, and death of several children he was responsible for at a community playground in Newark and at a summer camp in the Appalachians: "I was the Typhoid Mary of the Chancellor playground. I was the playground polio carrier. I was the Indian Hill polio carrier." (248)

But Cantor's epidemiological mystery remains unresolved, so that he is unable to find closure to the question of his involvement in passing on the disease. This fundamentally impedes his mental and physical health as well as his social bonds so that he, i.a., forces his fiancée to leave him. His life course is therefore as much altered by the polio infection as by the present and non-present social structures that enable the disease to flourish in modern environments. From a contemporary point of view, these events and structures are, at least in part, the result of the unavailability of biopolitical responsiveness in society at that time, especially in form of reflexive public health and governmental systems whose capacity to reduce the societal vulnerability to such events is founded in and underpinned by modern science, as demonstrated by the institutionalization of microbiology and epidemiology over the last 70 years (Collier / Lakoff 2015: 43).

3.2 A Medical Practitioner versus the Bubonic Plague

Similar to Bucky Cantor's apparently inescapable fate of an everyman, Albert Camus' *The Plague* – a narrative account of a fictional epidemic, primarily read as an allegory of the Nazi occupation of France and France's own colonial legacy, in which the bubonic plague decimates the French Algerian city of Oran somewhere in the 1940s – illustrates how medical practitioners, frontline workers, and other actors that possess situational expertise and responsibility can experience non-closures and limits to the range and impact of their actions in the face of a contagious disease. Responsible for some of the most lethal pandemics in human history, the bubonic plague is a bacterial infection that has a mortality considerably higher than polio or SARS-CoV-2. Faced with such a disease, Bernard Rieux, a medical practitioner central to the story, performs flawlessly according to his personal expectations and general professional norms. He treats the first victim of the disease, is the one to realize that this infection must be some

sort of plague, advises the local government to take action in order to contain the spread of the infection throughout the city and beyond, and heads a specialized auxiliary hospital at the front of the outbreak in which he saves hundreds of infected patients.

Yet, his role taking and professional conduct in mitigating the disease is "not about heroism. It's about decency. It may seem a ridiculous idea, but the only way to fight the plague is with decency." (Camus 2013: 125) Even when there are signs that the outbreak might recede, Rieux pleads for caution as "we still know nothing about this matter." (Camus 2013: 100) He recognizes that a variety of contingencies between disease, society, and ecological environment, and not only a lack of knowledge about the cause, prevention, treatments, and epidemiology of the bubonic plague, constraints any societal response and warrants a modest forecast. Even though the bubonic plague is a relatively good known disease and Oran possesses a tangible medical and political infrastructure within the confines of the story, its rapid spread in the city displays the practical limits of public health and governance institutions that are unable to source available past and present as well as nascent scientific insight that is currently in the making.

In that sense and just as much as the characters and institutions in Roth's novel, Rieux's personal story and Oran's handling the plague demonstrate an individual and collective inability to remove so-called negative unavailabilities that come along with infectious diseases. This awkward sounding sociological term simply refers to all those natural and social phenomena that elude any form of societal control (Rosa 2018). Accordingly, modern societies can be considered as social systems who are institutionally and culturally primed to minimize or even eliminate any aspects that cannot be brought under control in order to structure social processes and reduce any contingencies (Reckwitz 2019: 230). Both Rieux and the character of Cottard, the only citizen in Oran who welcomes the epidemic, anticipate and experience how such trials of disease control have considerable limits that, in case of the former, have to be acknowledged in order to manage social expectations or, in case of the latter who becomes a criminal by selling illegal substances during the city's lockdown, can be utilized for seeking personal gains, for "[t]his uncertainty, which everyone found disturbing, had visibly been a relief to Cottard." (Camus 2013: 214)

3.3 An Epidemiologist versus the Kongoli Fever

Even though the novels discussed in the previous chapters allude to the epidemiological and biological mysteries of infectious diseases, Lawrence Wright's *The End of October* is akin to an actual detective story in which the search for the origin and evolution of an unknown virus is at the core of the plot. Science takes the role of the investigative institution and is personified by the main character Henry Parsons, a high-ranking microbiologist and epidemiologist at the Centers for Disease Control and Prevention in the United States who tries to contain a contagious and lethal new pathogen. This fictional unknown unknown, named Kongoli virus, causes a lethal hemorrhagic fever. It comes to a global pandemic whose public health and societal consequences surpass those of COVID-19 by a considerable margin, at least for the moment. Parsons' investigative role illustrates the cultural core of scientific practice as the principal attempt to understand and explain objects, phenomena, and processes that are primarily of epistemic, and, if applicable and socially desirable, of practical interests (Boltanski 2014: 32).

In Kuhnian terms, paradigmatic science is the finding or construction of a puzzle and normal science is the solving of puzzles (Kuhn 2012: 35). It embodies modern society's general inclination to seek control of all aspects of the natural and social world.

According to Parsons, Kongoli is "[a] considerable puzzle" (Wright 2020: 39). Jane Bartlett, a science policy advisor and the novel's second major character, emphasizes that it is "not something we've ever seen in nature." (Wright 2020:151) In a task force meeting with the Vice President of the United States, she furthermore elaborates on the insufficient pandemic preparedness of the national and global public health system due to a lack of institutional funding and collaboration between science, politics, and other social fields:

'Now, if you had been doing your job and providing us with the resources we asked for, maybe we wouldn't be sitting here sucking our thumbs while people are suffering and the economy is going to hell and the graveyards are filling up and all because people like you didn't care enough about public health to pay attention to our needs.' (Wright 2020: 148)

'Even if we had a vaccine, the question is, who gets the shot? It takes months to ramp up production, and it won't even start unless the drug companies are protected against liability. [...] Even then, you may need two or three doses to be safe.' (Wright 2020: 148)

In that sense, *The End of October* is an apt mirror for the institutional and epistemic constraints of science in the current pandemic. The lack of institutional funding has impeded the productive autonomy of science to do substantial foresight research that monitors, documents, and assesses the detection, mapping, emergence, transmission, treatment, and preventive measures of a large amount of known and unknown infectious diseases (Brooks / Hoberg / Boeger 2020: 248). For the time being, science still struggles to understand, explain, and, subsequently, control all epistemically relevant aspects of COVID-19 (Block 2020: 156). With that in mind, reconsider that SARS-CoV-2 belongs to the family of coronaviruses which includes more lethal varieties such as SARS-CoV-1 or the Middle East Respiratory Syndrome, both of which have caused deadly outbreaks in Asia and the Middle East since 2003. The lack of vaccines or treatments for these rather well-known viruses is in part grounded in the epistemic uncertainty of scientific research, but it is furthermore a result of the collective failure of the involved scientific communities, private enterprises, and state institutions to pool research resources. While science attracts substantial funding to find and develop treatments for and vaccines against COVID-19, it has trouble with processing an excess of ongoing research that lacks to some extent methodologically sound research practice and sufficient quality control (London / Kimmelman 2020: 476).

Furthermore, the novel's curious case of Parsons' breakthrough in his search for a possible vaccination approach against the Kongoli virus that takes place within narrow confines of a military submarine might be an indirect allusion to the utility of multiparadigmatic scientific disciplines and the innovative importance of so-called protective spaces within the various institutions in which researchers can pursue particular intuitive approaches before having to produce presentable results (Whitley 2014: 370):

Cut off from the array of sophisticated laboratory devices available to twenty-first-century medicine, Henry had to take himself back in time, hundreds of years, to a period before the great vaccines of the twentieth century countered by the scourges of the past – typhoid, chicken pox, tetanus, rubella, diphtheria, measles, polio – an era when doctors had to work instinctually, with few resources and none of the science that later untangled the secrets of so many pathogens. They learned how to turn the disease against itself. (Wright 2020: 284)

4. Ecological Outlook

The above deliberations have offered a literary perspective on the absence, necessity, and function of contemporary science as the primary producer of insight on and solutions to the pandemic. Several aspects of these narratives add to the sociological discussion of the figuration of science in a pandemic world. Societal constraints on the institutional and epistemic autonomy of science can impede its capacity to direct and produce applicable research. In turn, this can limit its capacity to meet the societal obligations of scientific research. To conclude, the novels, especially *The End of October*, illustrate how COVID-19 both distorts and reinforces the imperative for the autonomy and social responsibility of science in modern societies.

Furthermore, Wright's novel ends with an environmental punchline that connects the emergence of infectious diseases with human-induced climate change. The original animal source of the Kongoli virus is a mammoth corpse that emerged from the melting ice of the arctic. Regarding the possible origin of COVID-19, human activities might be likewise responsible for the spillover of SARS-CoV-2 from animals to humans. This frames the pandemic as a partial consequence of the social-ecological disintegration of modern society, given that its environmental exploitations are major drivers of detrimental environmental change (Schimank 2016: 64). As science-based technologies have contributed to this collective habitus, COVID-19 can also be considered as a socially induced natural disaster in which science takes the role to clean up an outcome it has in part co-produced.

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