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Covid-19 pandemic and medical research

A Global View of Coronavirus, Medical Policy, and Research

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In 2019, a new virus of the coronavirus family emerged in Wuhan, China, and the disease that was caused by this virus was named COVID-19 to indicate both the virus associated with it and the year it began. "Patient Zero," the initial patient, appears officially to have started the epidemic in early December 2019 (though there are some unsubstantiated claims of cases as early as November or even September). For one month, the local Communist Party authorities concealed and later minimized the outbreak and even organized a 4,000-person banquet in Wuhan as the epidemic emerged. This is interesting because it sheds some light on the Chinese state-capitalist bureaucracy as well as the issue of local corruption. This behavior certainly helped the initial spread, while a very active containment strategy, such as was performed in Vietnam, might have strangled the epidemic at its very beginning in China. There is, however, no evidence that the Chinese government intentionally created such a virus. The sequencing of the genome has revealed that the virus originated as a bat virus modified by hybridization in a pangolin. If it were intended for biological warfare, as some have suggested, it would have been much easier to work directly on a nonhybrid strain.

In fact, passage of diseases from animals to humans, be it by microbes or viruses, is as old as humanity. For example, the H1N1 epidemic started from a chicken-breeding plant in La Gloria, Veracruz, Mexico. HIV originated from African monkeys, and Ebola was originally from bats and then most often passed along by monkeys. Similarly with coronaviruses (SARS in 2002-2004 and MERS), not to mention the infamous 1918 "Spanish Flu" and of course the pests, transmitted and carried by rats, that caused the plague that swept Europe in the fourteenth century. Such passages of disease from animals to humans, especially for flu, are not exceptional, but what is new is the frequency of the emergence of such epidemics and their faster and faster dissemination.

This is not an accident and is obviously linked to the over exploitation of natural ecosystems. In Southeast Asia, as elsewhere, bats, for example, are a natural reservoir for a wide array of viruses, including a great number of coronaviruses. Capitalism has the effect of reifying nature and transforming every resource into a merchandised object, which has resulted in the brutal penetration and destruction of ecosystems. Areas that were secluded in jungles, savannahs, and rain forests are now in immediate contact with humans, devoid of any previous "mild" confrontation and thus of any prebuilt immunity. Add to that the construction of roads to rapidly transport goods to cities, and all of the conditions are met for the spread of disease nationwide. Then comes air transportation as well as merchant vessels and the carrying of infection via asymptomatic incubating individuals or on goods especially since the virus or bacteria can stick to and stay alive on surfaces such as paper, plastic, and others for several hours, not to mention the aerosols caused by coughing or sneezing. Remember that an ordinary flight from Europe to the United States takes 6 to 8 hours, and the current Coronavirus can survive in an infectious form for 72 hours on plastic and up to 24 hours on paper or cardboard.

Most of the data on the emergence of COVID-19 indicates it originated in a food market in Wuhan via contact with a live pangolin sold for food, but some epidemiologists suggest that the patient zero might have been infected in November by direct contact with an animal in the adjacent woods of once-wild areas. Whatever the case, the repetition of such epidemic outbreaks is almost unavoidable in the future if the present brutal exploitation of natural habitats persists. At least some of the outbreaks and dissemination could nevertheless be prevented if minimal research cataloging animal viruses in transition areas where agricultural or urban land meets wild territory was correctly supported and if research was also conducted on "pan-vaccines" rather than only on "individual" ones. But this requires long-term support and is not immediately profitable. We will discuss that later.

The conclusion is that a mode of production based on hyperexploitation of ecosystems is bound to induce more and

more frequent epidemics of this kind, just as global warming results in the accumulation of CO₂ from mass burning of fossil fuels and massive deforestation for intense production of programmed-to-be obsolescent goods. A whole system of eco-destruction is in fact at the origin of the epidemics and will cause new ones if unchanged.

Health Impact (as of May 10, 2020)

At present, five months after the start of the pandemic, we have more than 3.75 million cases worldwide and 263,831 deaths. The United States is now officially the worst case in the world, with a toll of 10,259,708 cases, and 74,851 patient deaths [more than 100,000 by June 2020]. These figures are officially released ones, but are considered significant underestimates. One salient example is India, where no one trusts the government's statistics (52,959 cases and 1,789 deaths) but nobody is able to produce a reliable figure. I am reminded of a similar situation during the early AIDS history when I met with Françoise Barré-Sinoussi, director of the Regulation of Retroviral Infections Division, Patrice Debré, now president of the French Association for the Advancement of the Sciences, and then Health Minister Sourav Ganguly, who said of India, "Everything is under control" and then our missions discovered an HIV prevalence well above 10 percent in the slums of Delhi, Mumbai, and Calcutta. In Brazil, figures released by Bolsonaro's government state there are 126,618 cases and 8,588 deaths, while scientists from São Paulo hospitals warn of more than 1.3 million cases and photos of mass graves have been widely released. We will discuss below the differential handling of the epidemic in different continents and countries, but it is worth mentioning from the start that so far the announced catastrophe in Africa has not (yet?) taken place.

One must mention that people of every age are affected. While the disease is more severe in older people, especially those above 70, young children are also affected. And in the very young, aside from the well-known respiratory syndrome there are now reported cases with diarrhea and cardiac failure, akin to what is known as the "Kawasaki syndrome."

Factors like pre-existing disease, obesity, poor nutrition, and so on are proven to worsen the outcome. And, of course, we will come to factors that also affect the possibility of accessing care. It comes as no surprise, therefore, that in the United States, black communities are much more at risk than whites. For example, in April in Illinois, 40 percent of COVID-19 deaths were African American, but they represent only 15 percent of the state population, while in Louisiana, 60 percent of the first 900 deaths were African American.

Strategies

The responses to the outbreak vary greatly, from strategies aiming at confining the disease with various restrictions, as in most of Europe, to countries with almost no restrictions, as in Sweden.

Sweden and initially the United Kingdom based their strategy on the goal of reaching herd immunity, which is a way to stop the plague from spreading when there is no vaccine available. Using this approach Sweden recommended telework, regular hand washing, no meetings of more than 50 persons, no access to retirement homes, and closing of schools and universities. However restaurants and bars have remained open there. With this approach the hope was that the death toll would remain "moderate" and the population would become immunized within a few months, blocking the epidemic. Thus by May 7, in Sweden, which has 10 million inhabitants, there were 2,769 deaths (1,463 in the capital of Stockholm). This can be compared to adjacent northern countries, which used greater restrictions to confine their populations, with death tolls of 493 in Denmark, 240 in Finland, 214 in Norway, the three of which have a combined population of 16.7 million.

Vietnam has used the opposite approach. There, military-style rule was enforced: the closing of the borders, isolation in camps or hospitals for foreigners, up to 40 days quarantine of infected individuals and their neighbors, imprisonment for reluctant individuals or violators of the rules, denunciation of trespassers, and almost on the other hand no large-scale polymerase chain reaction (PCR) virus screening. A mobile-phone tracking of infected individuals and of nearby individuals indicated 75,000 persons or more had been quarantined this way. All that started in very early February, and confinement was enforced until April 1, though loosened in mid-April. The result, as confirmed by the World Health Organization (WHO) and by Johns Hopkins University, is eloquent: 94 million inhabitants, 268 cases, 0 deaths.

Similar results are seen in the examples of Taiwan (420 cases, 6 deaths) and South Korea, but with no large-scale confinement. Both opted for mass PCR testing, contact tracing, isolation of infected individuals, and monitoring of their movements. Taiwan had very early screened passengers at airport entries and proceeded to a mass distribution of masks. South Korea had chosen, after the experience of SARS 1 and MERS, to be ready for the next plague alert. Large-scale PCR screening was prepared, with up to 40 "mobile PCR clinics" and the necessary reagents stored. A large stock of masks was prepositioned, and quarantine was enforced by a mobile phone application and followed up by immediate tracking of credit card use. The fines for trespassing have few equivalents. Breaking confinement in France will cost you \$150, while in Seoul the penalty is \$2,500!

One can easily see that a) a capitalist country can eventually invest preemptively in pandemic readiness in order to protect the population as much as possible, and b) there is a cost to that as far as individual rights are concerned.

Let us now turn to Europe. With variations, European Union countries should have been ready to fight off the epidemic, having national health care systems implemented since the end of World War II and given adequate warning. Hospital care is totally covered most of the time, whatever the cost of the treatment. And the costs are paid directly by the state. The National Health System (NHS) in the UK is funded by general taxation, while *Sécurité Sociale* (SS) in France is financed by deductions from workers' wages and taxes on employers. The SS does not fund hospitals, which are paid for out of the general budget. Still, the infrastructure of the health system has been subjected to a search for cost effectiveness and profitability rather than development of investments. The same is true for the NHS in Britain and the health systems in Italy, Spain, and more especially Germany, have kept its system at a higher state of readiness.

In these countries, since the 2008 SARS and the H1N1 epidemics, for example, the number of beds has been reduced, whole hospitals closed, and as with many industrial products, the production of drugs and chemical reagents has been moved to China or India, while the PCR reagent production plants in Europe were closed. Moreover, "unnecessary stocks" too costly to maintain and replenish were destroyed. This was typical of the "just in time, just in sequence" policy linked to the world production model. In France, this went to absurd lengths when some stocks of masks were destroyed in February 2020.

It is thus obvious that, with variations from one country to another, national health systems, where they existed, have been under mounting pressure for "cost reduction" and in some places, such as Italy, were brought to the verge of collapse.

Production Becomes the Goal

This social liberal policy is evidenced by the way that the end of the lockdown is treated. In France, as in other social liberal countries, resuming production for profit as fast as possible is the motto. The reopening of the subways on a large scale with the slogan "you MUST be spaced one yard from each other," while every video shows people

crowding and as packed "as before," shows how ridiculous this approach is. Governments have deliberately taken the risk of a "second wave" of cases, particularly with the reopening of the schools, despite trade union and other protests. We will see what happens ...

This policy has been carried to the extreme in Brazil, where Bolsonaro a) grossly underestimates the magnitude of the epidemic (see figures above), and b) says 5,000 deaths "are nothing" when compared with the risks of paralyzing the economy by imposing a lockdown and stay-at-home orders. Moreover, his minister of commerce warns of the risk of food shortages, which in fact have already taken place in the urban slums.

And of course in countries where there is no global health coverage, the poor and, generally speaking, the working class are left disarmed, facing an epidemic for which they can neither afford the costs of treatments nor the social costs of massive layoffs. This is particularly obvious in several Latin American countries, but it is becoming more and more evident in the United States if one compares the situation of even Obamacare and, of course, Bernie Sanders' proposals, with the present situation under the Trump administration.

Thus we come back to the post-World War II objective of NHS and SS: full health care protection for any individual. This is still largely met in Western Europe but absent in the United States.

Big Pharma

One must add to this discussion the search for profits made by the Big Pharma companies and also smaller start-ups. (I use this shortcut terminology of "Big Pharma" even though the conspiracy theory crowd also sometimes uses it.) The price of anti-viral drugs, monoclonal antibodies, is totally exaggerated. The example of SOVALDI is typical. It is a good remedy for hepatitis C, but Gilead was widely criticized for the drug's list price of \$1,000 per pill when it was launched a total of \$84,000 per course of treatment! As far as COVID-19 is concerned, Gilead sought orphan drug status for remdesivir, an experimental drug that is being tested as a possible treatment. "Orphan drug" is a special designation giving drug companies a seven-year monopoly on sales, tax credits, and expedited approval. Bernie Sanders rightly termed such a request "truly outrageous," noting that Gilead had received "tens of millions" of dollars from the federal government to develop the drug. The consumer group Public Citizen and other health groups said in a letter, "This is an unconscionable abuse of a program designed to incentivize research and development of treatments for rare diseases." They stated that "Calling COVID-19 a rare disease mocks people's suffering and exploits a loophole in the law to profiteer off a deadly pandemic."

In fact, what is at stake is the status of research and of the industry. Medical research should be a nonprofit, nationalized sector, and research on drugs should be conducted for their immediate and prospective interest, not for the possibility of large-scale, and if possible fast, profits. This is an approach that leads to, and has led in the past to, the neglect of various fields of investigation, notably for several parasitic and microbial diseases, because the "market" offered by the local populations affected was judged to be too small to produce enough profits.

Social Protection

A financial crisis was looming before the pandemic since after the 2008 crisis, nothing was really done to cure the problem, except impose more austerity on the working class. At present, we are faced with a typical overproduction crisis in several sectors, coupled, in the case of oil, with a commercial crisis (classical petrol fossil fuels from Saudi Arabia and Russia, versus shale gas and petroleum), hence negative prices for the barrel. But several key sectors

are severely hit (aviation, tourism, restaurants, theaters, museums, festivals, and others), hence a massive rise in unemployment. Once again, as in 1929, the working class and middle class are to pay the price because unemployment benefits are too low, as in Europe or some states in the United States, or even nonexistent, as in India.

Another important issue is protection from layoffs. In that respect, the law passed by the Spanish Communist minister of labor banning job termination during the pandemic is an excellent example of what should be done everywhere.

At the very extreme, we have the state of Uttar Pradesh in India, where the Bharatiya Janata Party of Narendra Modi has voted to extend the workweek from 48 to 72 hours.¹ This is emblematic of the policies of many developing countries that are, with tacit or direct approbation of political leaders, implementing policies that are the opposite of the widespread social solidarity that is needed.

Research Again

Could the pandemic have been avoided? The response is yes, or at least reduced.

Since the first SARS epidemic, it was obvious that bats and other creatures of the jungles, forests, and grottos were reservoirs for the creation of viruses that would sooner or later infect humans. Incidentally, that is one of the reasons for the creation of the Wuhan P4 laboratory, which does indeed study bat viruses, in part in cooperation with France, in part in cooperation with the United States. U.S. cooperation is via an Obama-era project launched by American scientists through the Eco Health Alliance, which does not provide direct funding to China, and especially not for the highest-level laboratories for P4 pathogen protection. The Trump administration, amongst rumors and claims of the virus originating in the Wuhan P4 laboratory, has cancelled the remaining \$400,000 allocated to the joint program.

France is a typical example of short-term views induced by the search for immediate benefits. The Pasteur Institute in Laos houses a lab dedicated to the study of bat viruses. The renewal of the single virologist there who goes trudging through grottoes to capture bats, sample and sequence their viruses, and culture them, had been delayed throughout 2019, despite protests by no less than Professor François Bricaire, former president of the National Ethics Committee ... Surprise! In March 2020 the position was immediately reopened.

In 2002, French virologist Bruno Canard started working on the crystal structure of SARS-1 coronaviruses, and determined sites that were potential immunogens on the structure and common to the whole corona family and thus potential candidates to produce components of "pan-vaccines." The program was reviewed and accepted, but the funds were cut as soon as the SARS-1 epidemic fell into oblivion, [\[1\]](#) and even at the European level, despite a very favorable review, funds for SARS research were cut and the programs to develop a pan-vaccine were halted.

The development of such vaccines needs long-term research (a vaccine can take five to ten years to develop) starting from what in France we call "recherche sur projets" (calls for proposals for research grants). The calls for funding proposals are increasingly devoid of projects without "immediate or short-term benefits." The establishment has become totally opposed to fundamental research with the mixture of high risks but high rewards it encompasses. As a scientists' motto says, "Electric lamps were not invented as a consequence of projects allocated to expanding the life or brightness of wax candles."

Pan-vaccines are not necessarily a utopia. After the 2009-2010 H1N1 epidemics, work has been conducted on a "pan-flu vaccine." Indeed, the vaccine is now this year in a phase-1 trial.

Surprise: French scientists were asked in March to develop "crash programs" on COVID-19 for quick review in mid-May. And, surprise: Bruno Canard, whose earlier work had been stopped, was allocated an emergency allocation of 45,000 euros.

These episodes demonstrate again the need to move away from short-term, quick-profit strategies in medical research.

Short- and Long-term Strategies

The politics of health science is not necessarily totally blind. A comparison between France and Korea is worthwhile. After SARS [2], a mild epidemic of a new coronavirus emerged in Saudi Arabia and hit Korea. The alert was "mild" (937 cases, 341 deaths worldwide). But even the low toll in South Korea (186 cases, 35 deaths) was perceived as a warning, and hence the ample provision of PCR reagents and other supplies, together with the creation of 40 or more "mobile diagnostic clinics" in addition to the existing hospital network, for a quick and immediate diagnosis, immediate isolation, and contact tracing, without large-scale confinement of newly appearing clusters. Thus the country that had 7,869 cases at the end of March but only 60 deaths appeared to be a model. Unfortunately, to this day (May 11), with the abrupt appearance of 116 new cases, South Korea might be on the front line of a second wave.

The WHO is not totally exempt from criticism, except from those critiques by the Trump administration that are misplaced. The most severe criticism to be made is the one-week delay in declaring a pandemic because China would not vote for it and was severely opposing it for reasons of its "prestige." Viewed from France, where Health Minister Agnès Buzyn said in January that the risks of pandemic in France were "low" and in March that "we are ready" for a lockdown, but then permitted the "municipals," that is the mayoral elections, one day before confinement, the WHO delay appears small by comparison. What remains sure is that many countries delayed, despite the imposition of border and especially airport controls.

Conclusion

Throughout this paper we have seen the confrontation of two logics. One is a short-term, predatory and destructive production system, destroying the environment and threatening more similar catastrophes, with only one way out: more exploitation, and more destruction.

The alternative is very simple: Power to the people, not to capital. As a French motto says, "Plus rien ne doit être comme avant" ("Nothing should ever be the same again"). This is the crude lesson of the pandemic.

[New Politics](#)

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[1] See "Face aux coronavirus, l'investissement de temps a été perdu pour trouver des médicaments," Le Monde, Feb. 29, 2020.

[2] Guillaume Delacrois, "Coronavirus: 'L'esclavage fait son retour en Inde,' qui sape son droit du travail," Le Monde, May 12, 2020.