



# Ecology and Pandemics. What Can We Learn from COVID-19?

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Dear Listeners,

Today we want to ask ourselves what we can learn from witnessing the COVID-19 pandemic. Talking about this is not easy, initially. I am speaking here, in Switzerland, at the Goetheanum, as a doctor.

The general public, as well as authorities and leading newspapers in Switzerland, are currently still assuming that we are dealing with a controllable situation which, despite the current sharp rise in new infections, has only resulted in isolated deaths and a manageable number of serious cases (provided that older and chronically ill people in particular protect themselves and are protected against infection). Cultural events and conferences with hundreds of participants are happening again (with appropriate protection measures).

Already in Germany this is gradually changing. Travel, cultural life, concerts, theater and other events are much more restricted, although the number of seriously ill people (those in need of intensive care and those who die from COVID-19) is relatively as low as it is in Switzerland, while the population of Germany is ten times larger. With massively expanded testing and an increasingly cooler season, a significant increase in the number of new infections is also currently being detected, now mainly in younger people, some of whom do not get sick at all. Only recently, leading media in Germany have begun to report that the number of dead and seriously ill is

much lower than at the beginning of the pandemic. Discussions about how to correctly handle this novel infectious disease COVID-19 tend to become quickly emotional.

Last week I spoke with a school doctor friend of mine who had herself been ill with COVID-19. She did not have to go to hospital, she was treated carefully, but her illness and recovery lasted not one week, not two weeks, but several months, as happened with many cases which – statistically speaking – are not considered serious because they can be treated at home. Her lungs as well as her cardiovascular system had been affected and weakened – she reported a deeply impressive experience of weakness – and only very gradually could she resume her everyday activities.

She experienced that the course of her illness was perhaps also influenced by how exhausted her life forces were beforehand, as in her case, an infected person coughed on her and infected her at close range. On the other hand, she clearly experienced the effectiveness of external applications and nature-based, anthroposophic medicines, while in her case there were hardly any meaningful effective treatments available from a conventional medical perspective. She said, “Discussions with parents and teachers at school are no longer a problem now, after I tell them about the course of my illness.”

This morning I spoke with leaders of major institutions for people with special needs in Germany

and Holland. My Dutch colleague reported among other things about a 39-year-old educator for special needs who died of COVID-19 in September. My German colleague works at an institution with 140 people in need of assistance, some of whom also require intensive physical care, and a roughly equally large number of staff. They are now completely quarantined with several cases. It is not so easy in the long run to achieve the much-cited protection of risk groups, especially in places where young coworkers have to be there for people with disabilities, or for older people.

My experience of this pandemic was influenced early on by contact with the family of a colleague and friend from Milan who – like more than 150 other doctors in Northern Italy – died of COVID-19 in the early days of the pandemic. I emphasize the number of deceased Italian colleagues because we do not experience this in any flu epidemic. My colleague was treated for four weeks in intensive care with great dedication and died of a second infection, without ever having been able to have contact his wife and children during that time. In Catholic-influenced Italy, and not only there, both the living and the dying were isolated to a degree that seemed unimaginable only a short time ago. My colleague experienced his last weeks of life and his death without visitors, without saying goodbye. A funeral service was not possible in Milan in early April. The urn was delivered to the family a few weeks later.

If we look to Argentina, now at the end of its southern winter, we see that approximately seventy times more people are dying of COVID-19 than in Germany, several hundred people each day. The conditions in the clinics in Colombia and Peru are difficult to describe. Every day, about 800 people die from COVID-19 in the USA, relatively speaking twenty times more than in Germany and also twenty times more than currently die per day in the USA from firearms. The US President himself was probably successfully treated with a newly developed, very expensive antibody therapy, for whose effectiveness there are indications, but which – in the USA as well as worldwide – will probably only be available to a few privileged patients until further notice. So, the chances of receiving treatment are unequal, and life expectancy in a Brazilian favela, even without

COVID-19, is already 18 years lower than the life expectancy of people born in one of those Brazilian residential neighborhoods where each house is surrounded by a wall and access is guarded around the clock.

Even before COVID-19 there was a strange, even inhuman, coexistence of maximum control and loss of control, since the poor in these countries are exposed to unprecedented levels of violence and organized crime. Access to the healthcare system is minimal for the poor of South America, except for vaccination programs. The same applies to the lack of healthy food, clean water, and to the problem of heavily polluted air, which has proven to be a risk factor for severe courses of COVID-19 worldwide. It is a disease that affects the respiratory and cardiovascular system, the middle of the human organism, in a special way. But it also attacks the middle of society and threatens to divide us.

So, when we speak here today, from Switzerland, about a global pandemic, about its origin, its character and what we can learn from it, the first thing to note is that we are dealing with a reality that first and foremost requires our respect and compassion for all those affected. And perhaps this is the first thing we can learn from this pandemic: that it and its consequences can affect people in very different ways, and that this has to do not only with the virus, but with us, with how we deal with each other socially and economically, with the educational opportunities that we grant to every human being and with the attitude that we bring to encountering the creatures that are living on this planet together with us.

I would now like to address the following topics connected with COVID-19:

How did this pandemic come about, and what can we learn from it?

How does this disease progress, what does it depend on (and here I will mainly look at the different age groups and the social consequences that result from them) and what can be said at the moment about the perspective of a vaccine?

Finally, I would like to ask the question about the future: what can and must we change if we do not want to experience further and more dangerous pandemics?

### How did this pandemic come about?

Significantly, we can find an early, very accurate prediction of the corona pandemic in the January 2013 risk analysis for civil protection of the German Bundestag.<sup>1</sup> It deals with ecological issues, first with extreme meltwater and then, from page 55, with a pandemic of the “Modi-SARS virus”:

“The present scenario describes an exceptional epidemic event based on the spread of a novel pathogen. The scenario is based on the [...] hypothetical pathogen ‘Modi-SARS’, [...] which is very closely related to the SARS [corona] virus. The incubation period, i.e., the time from the transmission of the virus to the first symptoms of the disease, is usually three to five days, but can range from two to 14 days. [...]. The symptoms are fever and dry cough, most patients have difficulty breathing, there may be lung changes visible in X-rays, chills, nausea and muscle pain [...]. The lethality rate is different in different age groups. Children and adolescents generally have milder disease courses with a lethality rate of around 1%, while the lethality rate for those over 65 years of age is 50%.” (In fact, according to a recent study, it is 22.3% for over 85-year-olds and close to 0% for children). This is followed by precise assumptions about the duration of the disease.

Then: “The event begins in February [in winter!] in Asia but its dimension / significance is only recognized there a few weeks later. In April, the first identified Modi-SARS case occurs in Germany.” This coincides exactly with the pandemic in 2020, with a difference of two months.

“The pathogen originates from Southeast Asia, where the pathogen found in wild animals was transmitted to humans via markets. Since the animals themselves do not fall ill, the danger of infection was not recognizable.”

Yes, SARS-CoV-2 originates from wild animals, which are sold at “wet markets”, held in narrow cages and often slaughtered on the spot, while there are many people living there in a confined space and the people who work there come into direct contact with maximally stressed animals.

The report thus identifies the preconditions that seem relatively certain today as the prerequisite for

this pandemic and as a source of danger for future, possibly much more dangerous pandemics:

- Wild animals kept in close captivity, in acute danger of losing their lives, with often severely impaired vitality and unnatural proximity between different species, such as bats and pangolins, as well as between animals and human beings.
- In this situation, the immune system of the animals themselves is severely impaired. Viruses can multiply in the animals, double infections can occur, resulting in the possible formation of a “chimera” of two different viruses, which can, for example, facilitate the transition of a virus from one animal species to another or from animals to humans. SARS-CoV-2 may have developed in this way.
- Finally, there can be a transmission of animal-specific viruses to humans and back again, as was demonstrated in mink on Dutch fur farms this spring. In view of these places of extreme animal suffering, biologists cynically speak of an “evolution accelerator”. Every year around 100 million wild animals worldwide are kept in cramped cages just for fur accessories and fur parts and are killed after a life which wild animals can never adapt to.

At this point a short word on the question of how viruses, plants, animals and humans are connected:

Viruses were first discovered on plants. They accompany all living organisms. By their very nature, they correspond to elements of our genetic makeup; our DNA consists to a large extent of former virus substance. Viruses facilitate genetic changes and are an important prerequisite for evolution. They can become a threat precisely where they newly enter a living organism and redirect its life processes for their own reproduction. The measles virus, for example, also originates from animals (from cattle) and is a pathogen in humans. For most viruses, the threat also depends on the “host’s” age and thus on the host’s immunological reactivity. If a population has never been exposed to a virus, like the South American population when it was first exposed to the measles virus, and perhaps like today’s inhabitants of Amazonia concerning the SARS-CoV-2 virus, the infection can be devastating on a broad front. However, the SARS-CoV-2 virus is not entirely new

for many people. There is very probably partial immunity due to contact, for example, with other corona viruses, which is distributed differently in the population. Because it is very difficult to estimate this factor, forecasts at the beginning of the pandemic were often too pessimistic.

Nobody drew the most obvious conclusion from the Bundestag and similar documents, as presented by Bill Gates in his Ted Talk in April 2015, that mankind must end this treatment of wild animals globally and in real terms. The fur of minks and raccoon-dogs, as exported for example from China or Denmark on a large scale, the scales and meat from pangolins, among other things, must not be allowed to enter the commercial market anymore. This teaching is undeniable, and global wildlife conservation is an indispensable priority seen in relation to corona. This includes more, it also includes protection of plants and landscapes. And it greatly increases when we study the circumstances under which, for example, the devastating Ebola fever broke out in Africa: destruction of the natural habitats of wild animals drives them into unnatural proximity to humans, if they are not otherwise hunted, sold and killed. The corona pandemic is part of the current ecological crisis, which is much broader than just a CO<sub>2</sub> crisis. And it is significant that meat markets and meat factories have turned out to be hot spots. The excessive meat consumption of rich countries and people is a major driver of animal suffering and environmental destruction.

Ecological awareness today is focused on life, on the health of our whole planet earth. But life on earth has its vital center in the sun, it depends on the activity of the sun. This is stronger in summer and weaker in winter. Solar activity itself is not uniform. It shows an average cycle of eleven years, in which the number of sunspots fluctuates. We know from influenza that the severity of influenza epidemics is influenced by the approximately eleven-year sunspot cycle. There is also a virological publication on corona viruses and sunspot activity by two Chinese scientists from 2017,<sup>2</sup> which assumes that virus mutations are favored by sunspot maxima, as well as by high-energy cosmic background radiation at sunspot minima. The last solar cycle was the weakest in 200 years, with an absolute minimum of solar activ-

ity in December 2019. Which by the way additionally underlines the fact that the current global warming is not caused by the sun, but by changes in the earth's atmosphere.

It was none other than Rudolf Steiner, founder of anthroposophy, who on April 7, 1920, towards the end of the "Spanish flu" (which should actually have been called "American flu") pointed to a connection between pandemic respiratory diseases and solar activity. And he went on to give a quite original indication, which we should follow up on: that this influence could be intensified when the outer planets Mars, Jupiter and Saturn, as seen from Earth, come particularly close to each other near the Sun, which astronomers call a conjunction. This was the case at the time of the 2nd wave of the Spanish flu in September 1919, but it was also the case in March 2020, when Mars and Jupiter were in conjunction, i.e., very close together, on March 20 and immediately afterwards on March 31 with Saturn. This will again be the case with regard to Saturn and Jupiter in December 2020, when both planets will merge into a single point of light visible to the naked eye on the evening of the winter solstice, December 21, 2020.

In this connection Steiner speaks of the fact that this sun activity, when it has been weakened/modified several times, could promote epidemic illnesses of the respiratory organs, above all when the rhythmic interaction between the head and chest organs, which is expressed in the activity of respiration, is already weakened or disturbed.

Just as the rhythmic activity of our chest organs is the basis of our life, so the activity of the sun in its rhythm of day and night, summer and winter, as well as its longer rhythms, is the basis of our life. The activity of the sun is mediated by the earth's atmosphere in which we breathe. Due to increasing smog formation (think of the smog of Wuhan or Milan resulting from industrialization), the greenhouse effect not only causes global warming, it also at the same time leads to a certain weakening of the sun's effect on human beings, most of all in major cities, whose air quality weakens the immune system in the airways and promotes severe respiratory diseases.

So, if we ask ourselves why COVID-19 erupted just now, we can also learn to look at the relationship

between the earth and the sun in a concrete way and thus at the basis of our life. If we want to address and recognize the living essence of the earth in order to overcome the ecological crisis of the present, we may need to develop a relationship with the sun and with the delicate enveloping mantles of the earth, just as we do with our own heart and lungs. COVID-19 also asks about our own inner relationship to our heart and breathing. While we are becoming more and more entrenched in our heads in this digital age, our life and our compassion are rooted in our chest, and in this crisis it is important to connect our thoughts and feelings and not to believe that we can maintain life purely through control. Mouth and nose protection is not an alternative to the fact that one of the most important tasks of the present generations is to provide together for a clean atmosphere and a healthy relationship with the sun. It is remarkable that corona viruses are inactivated by sunlight.

Let us return once again to the document of the German Bundestag that so accurately predicted the crisis and the pathogen, and consider its statements on how we can counter the pandemic:

“New infections can be expected until a vaccine is available. The present scenario is based on an overall period of three years, assuming that after this period a vaccine is developed, released and available in sufficient quantities.” – The paper itself points out that the virus will also change and mutate during that time.

“Means of containment are, for example, school closures [as the first measure mentioned: precisely this proved ineffective according to the current state of knowledge] and cancellations of major events [probably very effective]. In addition to such measures [...] there are other recommendations that contribute to personal protection [...] such as the observance of hygiene recommendations. The epidemic-countering measures begin as soon as ten patients in Germany have died of the infection. [...] The population implements the measures differently depending on their subjective feelings. [...] There is an increasing demand for drugs, medical devices, personal protective equipment and disinfectants. Bottlenecks arise, as hospitals, doctors’ surgeries and public authorities are generally dependent on

rapid replenishment, but industry is no longer able to meet the full demand.”

Overall, the current pandemic has been much more benign than the scenario envisaged. In any case: this pandemic was foreseeable, and no precautions were taken. No steps were taken to protect the population effectively. Initially there were no protective masks for hospital staff and the existing ones were stolen and sold at fancy prices. Above all, no one thought of influencing the possible origin of this pandemic, namely the way in which humans and animals live together, which until 2020 seems to have been – and still is – taboo.

We can learn even more from what happened with COVID-19: the Chinese New Year fell on January 25 in 2020. A new twelve-year cycle began with the “Year of the Rat”. This festival annually triggers the largest global travel movement in the world (3 billion travel movements, 7 million foreign trips from China and many trips to China in 2019). Many of the 200 million migrant workers see their families only then. Probably more than 60 million children in China grow up in early childhood without their parents, so many hopes are naturally attached to this festival. On January 18, still shortly before the lockdown, 40,000 families were already celebrating the approaching festival in Wuhan. The festivities center around an opulent feast with fish and chicken. This festival is also celebrated abroad, and even many of the 190,000 Chinese guest workers laboring under miserable conditions around Milan try to see home during that time.

Wuhan itself, with 11 million inhabitants, is one of China’s larger cities at the confluence of the Yangtze and Han rivers, where only one-sixth of all lakes in the urban area still exist. The climate of this “City of Rivers” is humid, subtropical in summer, and relatively cool like in the Po Valley of Northern Italy in winter. The enormous level of air pollution, not least due to the local steel industry, is also comparable. Wuhan is the largest inland port in China and is located almost exactly in the middle between the four metropolises Beijing in the north, Guangzhou (Canton), Shenzhen and Hong Kong in the south, Shanghai in the east and Chongqing in the west of the giant empire, with correspondingly impaired air conditions.

Wuhan is also home to the most important virological research institute in China, which conducts research at the highest security level BSL-4 and contains the largest virus bank in Asia. It received several million dollars worth of funding from the USA. Research is also being conducted there with corona viruses from bats. The prominent researcher Shi Zengli discovered the origin of the SARS virus epidemic and she publishes regularly, also about corona viruses. On March 2, 2019, she warned against corona viruses spreading to humans. I would like to emphasize that it is very unlikely that the SARS-CoV-2 virus originated from this laboratory, as was published by several scientists from all over the world, for example, in “Nature” on March 17, 2020. But it is phenomenologically remarkable that the pandemic’s starting point was there, although the decisive leap of the novel SARS-CoV-2 virus may have occurred earlier, in October/November in Wuhan province. We see a high security wing dedicated to the control of viral diseases and a meat market right next to each other. Control and loss of control, almost within sight of each other.

This is because – as anticipated in the German Bundestag document – the meat market was certainly the first place to experience the superspreading that is characteristic of the SARS-CoV-2 virus: a few people, mostly shortly before the onset of symptoms and in the first days of illness, infect a great many people, while about 70% of those who fall ill do not infect anyone.

To this day we are still concerned with the question of the environment in which such events are more frequent: close cramping together of numerous people in cool and/or humid air, which often damages the respiratory organs, seems to be part of what facilitates the spread. Temperamental festivities also undoubtedly promote infection and can make superspreading possible.

Those physicians who drew attention to this new illness COVID-19 early on were initially put under massive political pressure. The news was suppressed, the approaching festival celebrations were not to be disturbed. Similar patterns would be repeated worldwide, especially in authoritarian and neo-authoritarian-led states. But looking the other way can have terrible consequences in the age of

globalization, and we must all learn to rethink the global consequences of our everyday life and actions.

In Northern Italy, 190,000 Chinese guest workers work mainly in the Lombard textile industry. That is the region where the pandemic in Europe reached its first peak. It has the highest air pollution in Europe. Biodiversity is rather a foreign word around Milan. It is the richest region in Italy, is highly networked globally, and is a leader in digitization, like Wuhan. On February 19, there was also a soccer match with 2,500 fans from Spain and 44,000 spectators in all. Italian policymakers had recently made intensive cutbacks in hospitals. There was no mouth and nose protection, the number of doctors was limited. The privatized nursing homes were happy to accept COVID-19 patients when the pandemic began. Such retirement homes proved to be death traps, from Bergamo to Stockholm. The high mortality rates in Europe are closely related to the fact that many elderly people lived in homes and were not protected in the beginning. The fact that this is different today is making a decisive contribution to the now low numbers of seriously ill and dying people. And it can be thought-provoking that recently a Scottish study of 300,000 people showed that the more children that lived in a family, the less often the adults were hospitalized and died of COVID-19. It is an illness that raises questions about living together and social distancing between generations.

How does this disease progress, what does it depend on? (Here I will mainly look at the different age groups and the social consequences that result from them.)

COVID-19 disease is characterized by its attack on the human middle, on the lungs, which maintain us in a permanent exchange of substances with our environment, and on our blood circulation, the inner basis for our life.

Volume in speaking and singing plays a role in infection – due to the dose of exhaled viruses through direct contact (“ballistic”) and aerosol formation. Hence the rationale for mouth-nose protection.

With the usual surgical mask we mainly protect others when we use it correctly, and we use goggles for self-protection. Good protection against becoming infected oneself, for example when caring for infectious patients, requires high-quality surgical masks such as FFP2 masks. If masks are handled incorrectly, they can increase the risk of infection.

The virus is an aerosol-forming agent that can persist in fine droplets for a long time in the air. Hence the recommendation to regularly ventilate rooms and to spend more time outside.

Now to the course – phase A: After absorption through the mucous membranes, infected people who fall ill often notice tiredness, headaches, scratching in the throat and usually a dry cough. Relatively specific is a temporary, sometimes persistent loss of taste and smell, possibly diarrhea. Fever may occur.

On March 9, we in the Medical Section at the Goetheanum shared an initial, integrative, anthroposophic treatment concept worldwide with our physician colleagues. Anthroposophic hospitals and physicians all over the world have developed their treatment concepts in close communication, and have treated many COVID-19 patients at all stages of the disease, since we have in principle decades of experience in the treatment of non-bacterial pneumonia. And already at the end of March, at a WHO conference dealing with the treatment options of complementary medicine, we had a mutual exchange with Chinese colleagues, who at that time had treated 91.5% of all COVID patients additionally with Traditional Chinese Medicine (TCM) and who reported a significant reduction in the rate of severe and fatal cases. It became apparent that early, consistent treatment in the first phase of the disease is particularly important. In this phase natural remedies have proven effective in China, as in Anthroposophic Medicine. Bitter substances can strengthen the body's defense against infection, while antipyretics and painkillers weaken it.

In this phase, the highest infectivity exists shortly before and after the onset of symptoms, which can then quickly subside. Smear and PCR tests can show highly specifically whether the virus is detectable, but they do not tell how contagious a person, a child, for example, is, or whether and how severely he will fall ill. In this respect, the infection figures

that we hear daily are initially not very meaningful. The test itself is very specific when used correctly. It is unlikely that there are many false positive tests because huge test series with several 100,000 people, such as in Australia, show very low rates, such as 0.1% positive tests. The test contains a screening method and two confirmation tests with a highly specific gene probe. When Ct values are above 30, no virus can usually be cultured.

There are also antibody tests, but these do not prove that you cannot infect others. Therapeutically, Donald Trump is the best-known patient to date who has been treated with antibodies directed at the virus envelope, which may have a similar effect to known passive vaccinations for other pathogens.

Phase B: Pneumonia often occurs after a good week, causing the lungs to become “heavy” with fluid accumulation in the connective tissue, resulting in a need for oxygen. In such cases, external applications used in Anthroposophic Medicine can help bring relief. In conventional medicine, the drug Remdesivir has proven to be effective in shortening the course of the illness in severe cases.

The disease can cause considerable organ damage in the form of stiffening, sclerotization.

Phase C: Hyperinflammation and organ failure: progression can lead to a loss of control in the immune system, over-inflammation with damage to the inner walls of blood vessels, and coagulation disorders, blood clots and multiple organ failure. Among other things, conventional medicine already uses strong, fluorine-containing cortisone to suppress such a derailment. Vital organs like the kidneys can temporarily fail. Intensive care medicine can succeed in saving some of the patients.

#### Who becomes seriously and who only mildly ill?

Age is of paramount importance in COVID-19. The fact that the reported mortality rate of COVID-19 in Kenya is at the same level as in Germany has also to do with the average age in Africa, which is 17 years, compared to 47 years in Italy.

A current American study, which was commented on in the “Frankfurter Allgemeine Zeitung”,

comes to the conclusion that up to the age of 44 years in richer countries the death risk is clearly under or at most as high as with the seasonal flu, which is 0.05 in America (and somewhat higher in Germany). Between 45 and 54 years of age, the risk of dying from COVID-19 is four times greater than that of dying from influenza; between 55 and 64 years of age 14 times greater; between 65 and 74 years 26 times greater; and between 75 and 85 years almost 150 times greater than this average value, at 7.6% (although influenza also affects older people more, too).

Of COVID-19 patients over 85 years of age in medically highly developed OECD countries, almost one in four die on average. The average age of deceased COVID patients in Germany is 81 years. On the other hand, some centenarians also survive the disease very well, perhaps also due to a pre-existing partial immunity against corona viruses.

We can also see old age as a time when we begin to let go, when the physiological control of the life processes in our organism weakens. Corona confronts us with the question of how we feel about death in old age, because death, like birth, is a necessity of life.

If we look at the motif of control and loss of control, the loss of self-regulation becomes significant when our blood pressure and blood sugar can no longer be healthily self-regulated, when our body weight has shifted strongly in the direction of obesity, when chronic diseases weaken us, especially the lungs themselves.

I already mentioned other social and ecological risk factors at the beginning; they are often missing from the statistics relating to Germany and Switzerland and can play a significant role in other countries.

### What about children?

School and kindergarten closures were among the first measures taken worldwide – partly because the description of the COVID-19 situation was written seven years before and was strongly oriented towards the flu. But in this point COVID is different. For

SARS-CoV-2, the current understanding can be summarized as follows:

- Children and adolescents under 18 years seldom fall ill and when they do it is almost always a mild case. They are admitted to clinics much less frequently. Inflammations of the blood vessels, especially of the heart, occur very rarely. On the other hand, children and adolescents now account for a quarter of all infected people in Germany, because the risk groups and older people are protecting themselves relatively effectively. Children are usually infected by adults, especially their parents.
- Christian Drosten published on April 28 that he had discovered similarly high virus loads in the throats of children as in adults. This led to fatal mistakes, as it says nothing about what this means for the health of the children, nor about their contagiousness. Since then people have been repeating again and again that the contagiousness of acutely ill children is similar to that of adults. But there is no clinical proof of this. This shows the limitations of those who never treat children themselves.
- In lockdown in South Korea, children are said to have infected family members of the same household in 5% of the cases. There is still no evidence that children infect teachers at school. The CoKi corona in children study could not prove a single case in 9,583 children examined, 194 of whom had positive swabs and 82 had positive blood tests. Children can, though rarely, infect classmates. Six of 137 infected students who attended school infected a total of eleven fellow students (in Baden-Württemberg). In each case, children and adolescents were examined.
- A recent study of 300,000 people in Scotland showed that households with children had 10% fewer COVID-19 cases and hospital admissions per child.
- A recent study from India on 570,000 people also showed that children pass the virus on to other children, but only rarely to adults. In contrast to what a “SPIEGEL” headline states, this study is not evidence that children infect educators, teachers, bus drivers or other contact persons outside the family to any relevant extent.

The area where we are especially challenged by COVID-19 is the human culture of living together. Harald Matthes, an anthroposophic physician experienced in treating corona, has long been calling for a differentiated protection concept for those at particular risk. Recently, on October 4, leading epidemiologists from Stanford, Harvard and Oxford Universities issued a “Great Barrington Declaration” in which they called for a transition to a protection concept which purposefully protects risk groups, above all older people, and enables an extensive return to normality for younger people, in working life, sport and culture. Such a declaration raises concerns, as concertgoers are often older than 55, nursing home residents with severe physical disabilities are not only at risk at younger ages, they are also often cared for by younger people, and COVID-19 is very much about avoiding a split in society.

Previous experience with so-called superspreading indicates a certain profile of particularly high mass infection risk, ranging from the loud joint singing of large church congregations to boozy Ischgl-style merrymaking.

On the other hand, there is no evidence that concert and theater performances (possibly without serving alcohol, as at the Goetheanum), when mouth and nose coverings are worn, lead to superspreading, even without maintaining a distance of 1.5 meters. We also doubt very much that there is any justification for not allowing university teaching to take place in normal classroom sessions. Clearly there was and is no evidence for the need to close kindergartens and elementary schools. Effective protective measures are known to consist in washing hands and, yes: correctly worn mouth and nose protection can reduce the rate and severity of infection in situations of high infection density, which is not news to people in South East Asia.<sup>3</sup> These masks mainly protect other people when one has become contagious.

To protect oneself effectively in close contact with an infected person, it is necessary to wear more professional masks, such as FFP2 or FFP3. There is no evidence whatsoever that wearing mouth and nose protection in childhood helps to reduce serious illness and death, with the exception of people who are at risk, who may sometimes be adolescents. Un-

der the age of eleven, any wearing of masks must be rejected because the risks outweigh the benefits. A major risk is increased infection due to incorrect handling.

### The question of vaccination

The polio pandemic was an example of successful vaccination campaigns and can also show us the value of a good vaccine. On the other hand, many viruses, such as HIV, still defy any attempt to develop a vaccine – until recently also corona viruses, where research on vaccines has been unsuccessful for decades.

In the case of COVID-19 people are endeavoring to create a vaccine that can be produced by the billions. This is difficult to achieve with traditional vaccines based on the cultivation of viruses, which are then applied as inactivated or attenuated (live) vaccines. On the other hand, the biological effects of such conventional vaccines are best known. Chinese manufacturers are again likely to lead the way at present. The “Frankfurter Allgemeine Zeitung” reported in its issue of Thursday, October 8, that one million Chinese have already been vaccinated in China with an (according to our sources) inactivated vaccine from the company Sinopharm in the course of a Phase III study, including many state employees. “Officially, participation was voluntary,” a manager of a Shanghai bank told the newspaper. In practice, however, it was hardly possible to refuse to participate in the experiment with the vaccine during the test phase. “This would certainly be noted as a point of criticism in the person’s personnel file.” Sinopharm is officially called China National Pharmaceutical Group and it works closely with the Wuhan Institute of Biological Products / Wuhan Institute of Virology. This completes the circle.

Western companies in particular are researching platform technologies, especially mRNA and vector vaccines, which transport genetic information centrally into the body, which then produces a protein, such as the viral spike, which then functions as the actual vaccine against which an immune reaction can be directed. The production of mRNA itself is

cheap, but its transport into the organism is difficult. Here, either additives with nanotechnology are needed or other viruses as carriers, known as vectors, similar to the controversial Russian vaccine. A major risk of these vaccines is the possibility of uncontrolled autoimmune reactions, which have already been observed in some ongoing registration studies.

Briefly summarized:

- To date, no one knows the effectiveness of these vaccines, especially in relation to the vulnerable group of very elderly people. With them in particular, it is not at all certain that they will respond at all to vaccines that have been tested on healthy young people. We know the problem from the flu vaccine, which in some seasons only protects every fifth person or even fewer of those vaccinated from infection and in recent years, despite massive advertising, has changed little or nothing in the winter flu waves, if we look strictly at the seriously ill and the deaths. Influenza is a good example in that the vaccines against it are not necessarily as effective as vaccines against measles or polio and therefore cannot promise pandemic control. This is especially true for corona viruses.
- As far as side effects are concerned, the data published so far already show that especially vaccines with completely new technologies will not be among the most well tolerated. Suspiciously, they are often tested in comparison with vaccines known to have many side effects, not comparing them to placebos. It is therefore completely unclear at present what contribution vaccination can make in this pandemic, but it will be a limited one.

Finally, I would like to ask to what extent the currently dominant technical and economic way of thinking and acting has contributed to this pandemic and to the threat of further, more dangerous pandemics. Learning in this context can also mean examining the basic assumptions and taboos of one's own way of thinking and changing one's attitude.

COVID-19 is one part of the ecological crisis of our time, which we can become more aware of especially through this pandemic. We often experience our

powerlessness in this situation and at the same time, it is becoming more and more irrefutable through self-knowledge that it is we ourselves, from the perspective of humanity, who are the originators of this crisis and thus ultimately the originators of this pandemic that we ourselves have predicted, without doing anything to change the triggering causes and without taking precautions.

We all long for an end to this pandemic. But we should not simply long for the world that we had before this pandemic. Rather we must find together what can lead into the future. For if we consider this crisis in its entirety, we must conclude that life on earth as a whole is in acute danger. But there is no respirator for the planet. And it is we humans who are destroying the forests, the lungs of the earth, and the habitats of animals in order to subject everything to our technological and economic control.

Medicine itself has never been so technically powerful, and never before have such immense economic resources flowed into medicine. At the same time, the pharmaceutical and chemical industries are contributing to endangering our very existence. Monocultures only became possible through the use of pesticides; modern factory farming only became possible through the use of antibiotics. This way of keeping animals threatens to render ineffective the very antibiotics that we need for the treatment of seriously ill people, enabling multi-resistant bacteria to spread. In few industries is ecology a more dreaded foreign word than in conventional pharmacy.

COVID-19 shows us the limits of this technologically and economically highly equipped approach to medicine, which does not yet understand that a forward-looking promotion of health, both individually and globally, requires a different scientific basis, a different way of thinking and acting than selective campaigns against infectious diseases – whereby most chronic diseases are not even recorded. If antibiotics were “against life” (as the word translates), and were the most successful, even the most defining drugs of the 20th century, then in the 21st century we need a different, pro-biotic medicine that knows how to promote and maintain health. And yet we cannot separate the health of plants, animals and people, and among people, separate the rich

and the poor. We must combine the new slogan of “one health” with life, with our feelings, with a new way of thinking, and we must adopt a corresponding attitude if we do not want to experience much more dangerous pandemics in the near future.

Health, however, does not result from increasingly powerful external control, but from the ability to regulate and maintain a living balance oneself. This applies to plants, animals and human beings. Health depends on healthy mutual relationships. When we act in such a way that we are indifferent to destroying the living balance of a landscape, when we are indifferent to what a wild animal experiences when it has to vegetate its entire life in a 40 x 60 cm cage, when we are indifferent to the fact that millions of children either die or remain damaged for life due to hunger, while billions of people fall ill due to malnutrition, then we will be able to help less and less even with the most powerful approach to medicine.

The power of medicine is based on the current form of natural science and economics. But it is precisely this one-sided form of science and economics that is destroying the basis of our life, both planetary and human health. Thus, this pandemic calls for a new global awareness of what we can call the health of our planet, what we can call planetary or one health, thus also calling for new foundations for a sustainable approach to medicine, an ecological approach to pharmacy.

Only then will we respond sufficiently to the crisis that we are now experiencing, which we could only predict with our previous, old way of thinking, just as we could predict but not avert climate change. How will we be able to really care for the recovery of the planet and the prevention of pandemics? For therein lies the real call of the present, which Greta’s generation is reminding us of, and which we must answer together, step by step.

In doing so, we must touch on fundamental taboos of our modern, scientific way of thinking.

At its core is the modern ban on the “you” question in science. This question about the nature of the other was methodically excluded at the beginning of the modern age, because until the Middle Ages it was the question about God: “Our Father in heaven, hallowed be your name.”

There is no “you” in the scientific, purely materially oriented world view, there is scientifically only an “it”:

biologically, human beings are regarded as animals; animals and plants are regarded and treated as machines; the planet as mere matter. This applies not only to modern science, but also to the capitalist economy, which considers nature to be an unlimited raw material for its own production, a mere available thing.

The existence of human beings and the world itself is considered to be a coincidence. Jürgen Habermas, the great German philosopher, speaks of the “methodical atheism” of modernity, which only knows objects, which thinks, researches and acts in the mode of the “it” question. If a scientist wants to investigate stress, he may, for example, study a mouse that he has thrown into water to let it fight against drowning and then dissect it after its death in order to detect material changes in the nerve tracts. Or he may separate newborn mice from their mother in a chaotic temporal pattern to detect stress-related, permanent genetic changes in the subsequently killed young mice. But who stops to think of what might one day come back to us from the experiences of the millions of animals used in experimentation, mass-held domestic animals, and tormented wild animals?

The basis of our power over nature today is the freedom of experimenters who deal with nature conceived of purely as an object.

Our form of economy is a sister to this way of thinking. It revolves centrally around multiplication, around constant growth of money, a morally indifferent “it”, and modern Western thinking assigns government the protection of private property as its main purpose. ‘Privare’ means rob or steal in Latin. In ancient Greek private individuals were called ‘ho idiotās’. COVID-19 shows that health is not to be had privately. Social distancing can be useful to reduce the risk of infection, but it cannot hide the fact that I promote my health in the most sustainable way by working for the recovery of others. COVID-19 calls on us to show consideration for others, and especially for those who even before COVID-19 lived and suffered in the shadow zone of our consciousness.

But from an ecological point of view all unlimited growth is pathological. It is true that human beings and mammals are characterized by a spurt of growth in puberty. This is the phase where you break away from your parents and want to be free, your skin sprouts pimples and your soul develops aggressions. But this must be followed by maturation and the acceptance of responsibility.

Money is made by us, it is not a substitute for God, but a means of circulation of our economic activity. If our blood begins to grow indefinitely, we fall seriously ill and die of leukemia, for example. Our form of monetary economy is a major driver of the ecological crisis because this money lacks the necessary qualities of maturing and dying that would make it suitable as a sustainable means of circulation. The current crisis should make us think more thoroughly about which form of economy can really be sustainable and oriented towards the common good. Our planet needs that now.

We are living in a partnership crisis with the planet, with the living. If we want to overcome this crisis, we must scientifically allow the question of the nature of the living, the nature of the planet, we must enter into lived responsibility with the living. Living beings are not machines and humans are not animals. This is precisely where our responsibility comes from. It is a moral responsibility. Whether we live up to it depends on our thinking, our compassion and above all on our lived attitude.

Therefore, as a doctor, let me briefly summarize what COVID-19 gives me in terms of my own attitude:  
in terms of our health, we are all interdependent and cannot isolate ourselves. In this respect, we

must find a common path through the crisis and leave no one behind. Protection concepts are most convincing when they cover all generations in a coherent form.

In recognition of our interdependence, our basic attitude towards plants, animals and human beings should in the future be more and more a dialogical one, one which has respect for the life of all living beings, compassion for the experience of all animate beings and one which equally respects the dignity of every human being. Today we are very well able to meet the basic health needs of all people worldwide and must turn this goal into concrete will.

We can only promote sustainable health if we take the health of animals, plants and soil just as seriously as our own. We need a science of the living, we need our economy to mature into an economy of the common good.

Believe me, the decisive answers to COVID-19 are not purely medical, they affect all areas of life and all of us who bear responsibility for this earth and for the generations to come.

- 1 <https://dipbt.bundestag.de/dip21/btd/17/120/1712051.pdf>.
- 2 SARS, MERS and the sunspot cycle, Jiangwen Qu and Chandra Wickramasinghe, Current Science, Vol. 113(8), 2017, 1501-1502.
- 3 Critical to this: Ines Kappstein: *Krankenhaushygiene up2date* 2020;15(03):279-295, DOI: [10.1055/a-1174-6591](https://doi.org/10.1055/a-1174-6591). Positive opinion: Robert Koch-Institut: *Mund-Nasen-Bedeckung im öffentlichen Raum als weitere Komponente zur Reduktion der Übertragungen von COVID-19. Strategie-Ergänzung zu empfohlenen Infektionsschutzmaßnahmen und Zielen (3rd Update)*. Epid Bull 2020;19:3-5, DOI [10.25646/6731](https://doi.org/10.25646/6731).