

COVID-19: «NEVER LET A GOOD CRISIS
GO TO WASTE (W. CHURCHILL)»
(POSITION PAPER)

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КОВИД-19: «Никогда не пускайте хороший кризис на самотек» (У.Черчилль)
(установочная работа)

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With the establishment of International Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) the UN created a fundamental extension in the understanding of current and future policy challenges: In addition to the sectoral approaches (WHO, UNEP, UNESCO, UNIDO etc.), there was a need for an institution that evaluates the problems and the options for solving them in terms of their appropriate contribution to future sustainability. This succeeds best if the positions of the «others» are also taken into account with the special «sympathy» recognized by Darwin as a trait of advanced human person. If this succeeds, then particularly diverse networks form — as if by themselves — with surprising positive ecosystem performance and quality of life. Unfortunately, if the needs of the involved actors are not taken into account enough, surprising adverse consequences can also be expected. Thus, for these reasons, we are in an era of pandemics because too little attention has been paid to the individual habitat needs of wildlife and people. COVID-19 is just one of the possibilities: Over 800,000 other virus species could lead to more pandemics in the short term. This existential threat was not even an argument for the creation of IPBES. Today, it affects the daily lives of virtually everyone. Nevertheless, it is to be expected that the logically reasonable rebalancing in decision-making processes will fail in practice due to countless arguments that seem superficial in the short term. However, the personal involvement of COVID-19 gives hope that the pressure of the catastrophe will make it possible for the changeover process to be started in concrete terms. But additional measures must be taken if COVID-19 is really to be the last pandemic. To this end, the current defining approach of preventing contact between the infectious and the infectable until the world's population is vaccinated, as important as that access is, is not enough. But, for example, without exploiting the possibilities of activating viruses in the environment and, in particular, systematically exploiting the possibilities of non-specific defense, it will not be possible to end the pandemic.

Keywords: humanity, pandemic, COVID-19, nonspecific protection, ecosystem services

С созданием Международной научно-политической платформы по биоразнообразию и экосистемным услугам (IPBES) ООН инициировала фундаментальное расширение в понимании текущих и будущих политических задач: в дополнение к секторальным подходам (ВОЗ, ЮНЕП, ЮНЕСКО, ЮНИДО и т.д.), возникла необходимость в институте, который оценивает проблемы и варианты их решения с точки зрения их вклада в будущую устойчивость. Это удастся лучше всего, если позиции «других» также принимаются во внимание с особым «сочувствием», признанным Дарвином в качестве черты развитой человеческой личности. Если это удастся, то образуются особенно разнообразные сети — как бы сами по себе — с удивительно позитивными показателями экосистемы и качества жизни. К сожалению, если потребности вовлеченных субъектов не учитываются в достаточной степени, можно ожидать и негативных последствий. Так, по этим причинам мы переживаем эпоху пандемий, поскольку слишком мало внимания уделяется индивидуальным потребностям среды обитания диких животных и людей. COVID-19 — это лишь одна из возможностей: Более 800 000 других видов вирусов могут привести к новым пандемиям в краткосрочной перспективе. Эта экзистенциальная угроза даже не была аргументом для создания IPBES. Сегодня она влияет на повседневную жизнь практически каждого человека. Однако, логически обоснованное изменение баланса в процессах принятия решений терпит неудачу на практике из-за бесчисленных аргументов, которые в краткосрочной перспективе кажутся поверхностными. Ситуация с COVID-19 дает надежду на то, что давление катастрофы позволит конкретно начать процесс изменения этого баланса. Но для того, чтобы COVID-19 действительно стала последней пандемией, необходимо принять дополнительные меры. Для этого нынешнего определяющего подхода, заключающегося в предотвращении контактов между инфекционными и инфицированными до тех пор, пока все население мира не будет вакцинировано, недостаточно. Но, например, без использования возможностей активации вирусов в окружающей среде и, в частности, систематического использования возможностей неспецифической защиты, прекратить пандемию не удастся.

Ключевые слова: человечество, пандемия, COVID-19, неспецифическая защита, экосистемные услуги

136 countries have now joined IPBES, which was founded in 2012: This because they recognized that overall policy cannot be successful if one tries to solve in isolation the safeguarding of vital material and regulating environmental services — such as the provision of clean air and water, the coverage of energy needs and food supply despite climate crisis — and the safeguarding of cultural ecosystem services that contribute to the essence of the person — such as nature as a locality for individual and social identification, as a basis for physical, psychological and social recreation and the basis of one's culture — in a global world.

GENERAL ASPECTS

To be successful in this endeavor requires a dynamic understanding of ecosystem functions within nature and between nature and sociocultural interactions. Buzzwords such as «One World» and «One Health» attempt to convey this: But «One World» is to be understood as «Our ONE also CULTURAL World.» And at the center of «One Health» is «Health» and specifically «Health for all, not just of persons». This understanding is much more comprehensive than just the willingness to organize across living beings against the occurrence of disease and illness. The dynamics arising from the comprehensive «One World- One Health» concept allow adjustments that lead to higher efficiency. This succeeds in spite of or even because of the fact that many different causes and intentions of all involved actors are aligned in a weighting and evaluating way towards long-term sustainability thanks to biodiversity.

But here, too, the well-known «social traps» influence the decision as to what is currently given priority in practice: The currently suffered or threatened personal damage and short-term personal advantages are disproportionately included in the assessment. They inhibit the willingness to accept current personal disadvantages, even if this means, for example, that much greater financial damage to society is unavoidable. This is proven by the special case of «pandemics and zoonoses»: IPBES calculates that the cost of «doing as before» leads to \$1 trillion in costs per year, about two dimensions more than if the IPBES concept were implemented [4]. But current massive personal disadvantages, even if they affect only one aspect, can open a window of readiness for comprehensive action: Hence Churchill's advice, «Never let a good crisis go to waste!»

The overlooked stone becomes the cornerstone. The current COVID-19 threat is arguably such a crisis. It opens a window, possibly only open for a short time, for far-reaching and long-term effective decisions for the forward-looking politician. It should be remembered that pandemic avoidance was virtually not one of the arguments that led to the creation of IPBES. Nevertheless, this is currently the focus! Thus, it is evident that approaches that adequately consider ecosystem

demands can lead to unexpected benefits for individuals and their cultural and economic interests. This proves an unexpected breadth of effectiveness of considerate and balanced forms of interaction: Social scientists know comparable things by the term «the strength of weak relationships.» But is the reduction of pandemic risk the only possible unexpected or underestimated benefit of balanced ecological diversity?

Other effects, especially subtle ones that occur only in the long term, can only be recognized when researchers turn their attention to them. So far, mainly ecologists and conservationists with their specific methods are interested in the effects of ecological sustainability and biodiversity. It is possible, however, that unexpected but significant connections of measures to biodiversity could be considered, especially in the health-related field, for example, for the use of ecological habitats also for social recreation [7]. Stimulating should also be the findings of work, summarized by R. Louv in his «Nature deficit syndrome» He finds significant increases in antisocial behavior, aggressiveness, drug use, etc., among adults who grew up as children without contact with nature [11]. The interweaving of cultural and ecological aspects, which is valuable for the individuals, can be made evident with musical sound shows, e.g. by the Vienna Philharmonic Orchestra [1].

Unintended consequences of intended unilateral actions become determinant for the future. Since cultural and biological diversity can yield unexpected benefits, one should not be surprised when unexpected drawbacks occur when ecological frameworks are overused unilaterally. Thus, the accumulation of new occurrences of zoonotic diseases transmissible to humans as a result of excessive benefit orientation of ecological resources is probably just one example of unintended but systemic damage as a result of desirable goals considered only unilaterally.

It is to be feared that unexpected consequential effects and adverse deviations from the predicted success of interventions will occur if «traditional» countermeasures against pandemics are used. They do not take into account the dynamics between different process levels and intervention options that can be assigned to them. The usefulness of this assumption should also be evident from the «SARS-CoV-2 and COVID-19» example. Traditional strategies are oriented towards the search for «the determining cause principle», which at best has to be tackled in different ways. Thereby the ONE goal, against which everything else is currently neglected, is to be achieved. Transferred to the special case of COVID-19, e.g. the — of course reasonable — effort to prevent the contact of infectious and infectious persons would be such a «monocausal» approach. It can be targeted through many routes (quarantine, testing, lockdowns, travel restrictions, etc.). The central «mono-intentional» goal can be seen as the prevention of deaths of individuals from or with COVID-19, which of course is also justified. This tradi-

tional approach can be contrasted with dynamically networked strategies. Here, several causes relevant to the different process levels are networked into an overall strategy. In the specific case, this would mean that efforts to avoid the emergence of new pathogens and mutants, the systematic inactivation of viruses, the influence on the efficiency of virus penetration through, for example, the mucosa of the nose, the optimization of the bio-psycho-social-cultural performance of individuals, etc., are used in addition to the options of contact restriction in an overall concept. In this context, target orientation would also be seen in a correspondingly comprehensive and dynamic way: Then it would not only be about death at or with COVID, but generally about life-relevant indirect and direct effects on the persons with their special e.g. economic and cultural basic conditions. But this alone would not do justice to the nature of this particular crisis: COVID-19 is, after all, an infection. Therefore, contact between persons can often be a necessary, but NEVER a sufficient reason for the disease: The sufficient reason must, after all, be the penetration of the virion through the cellular outer boundary of the person's body. Therefore, it is indispensable to deal also with the variability of the virus as «guest» and the cell as «host». However, the infectable cell is part of the organism of a person and can therefore also be influenced by it. If one extends the access — again according to the arguments of IPBES — also to the ecological interactions and the relationship between the prosperous and the poor states and groups of persons, it makes sense to recall, where modern man should develop ideally according to Darwin: He always recognizes the right to be anxious to keep the reached level. But Darwin sees the essential gain of the modern man in comparison with other primates in the fact that the person has developed beyond that a special form of the sympathy and extends this with «simple thinking» and the further development of the «intellectual strength» further, «so that it extends to all people of all races, to the weak, infirm and other useless members of the society, finally even to the lower animals» [2].

THE SPECIAL CASE: SARS-CoV-2 AND COVID 19

Without consideration of interactions between the different process levels — thus, in the case of COVID, from the emergence of new pathogens and mutants to their spread in the environment and contamination of individuals with and without penetration, persistence in the organism, and death from or with COVID-19 — unexpected drawbacks and misjudgments of the effectiveness of the measures taken should be expected.

Both of these have occurred with COVID-19:

- The deviations of the forecasts from the effects that then actually occurred were so great that Press & Levin, former members of the U.S. resident's Council of Advisors on Science and Technology, called for the estab-

lishment of a new interdisciplinary U.S. agency. W.Kofler and M.Nagl used the findings of the IPBES Pandemics Report to point out the need to change the overall strategy as well [8].

- Assumptions about health relevance have changed fundamentally in recent months: Long Covid and the surprising inferences from the emergence of mutants are just examples.

At the crossroads critical to the future, collaboration is needed from all. IPBES has made clear in its report «Escape the Era of Pandemics»[7] that COVID-19 could be solved in the «classical way», but only if it would be possible in an ideal way to stop all contact with infectious people, to vaccinate all people on earth and to immunize them against any mutant. But this would not only eliminate the threat of further zoonosis-related epidemics. It would even increase the risk of new pandemics if only these, indisputably sensible measures were taken. The biological-social reasons for the transition from microbes to humans would, after all, continue to increase: Peter Daskzak, the chairman of the project group formulated unequivocally: «It will require a seismic shift from reaction to prevention of fundamental systemic problems» [4]. In this context, the cultural possibilities, not only limitations, e.g. of the indigenous population, should be used. The Executive Secretary of IPBES Anne Larigauderie invited in the same press conference all national and international organizations to pool knowledge and special interests. In addition, however, it would be necessary for the specialists consulted to make an effort to be able to think «with the head of the other».

Only when one has understood the other in principle can one understand the relevance of his arguments. This does not require the expertise of these specialists. To demand this would be nonsensical, since it cannot be achieved with the limited abilities of a person, no matter how hard he tries. But it is indispensable to make an effort to understand the different paradigms. For example, how is an economist to know what is needed for biodiversity, even if he or she recognizes that from an economic perspective, biodiversity is appropriate to implement: thus, the current interim report on funding the Global Community Initiative for Pandemic Preparedness and Response for the July G20 meeting represents significant progress [12]. The core problem is addressed: «9) We have to take bold steps to strengthen the current system, because the time to the next pandemic may be shorter than many expect. Scientists have established new pathogens are emerging and spilling over into human populations with increasing frequency, accentuated by deforestation and climate change. The prospect of continuing mutations of the SARS-CoV-2 virus has also raised the risk of repeated cycles of the current pandemic, that will blur the lines between this pandemic and the next.» But the key process crucial to viruses jumping to humans — too close contact between wildlife and humans — is not elaborated. The crucial factor — along with climate change — is «deforestation,» he said.

The IPBES report lists numerous measures, such as spatial planning measures, behavioral patterns dependent on culture and financial strength, etc., which a functioning system of financing would have to take into account as a matter of priority if one wanted to change the processes that otherwise continue at an accelerated pace and will lead to the occurrence of new pandemics. But there is not a single point on this in the chapter on financing needs.

Further specific strategic analyses on how to deal with COVID-19 as a model pandemic. In addition to, or since, the publication of the IPBES report and the invitation to cross-disciplinary collaboration in the fall of 2020, numerous strategy papers have been presented from specific perspectives. Three are briefly discussed because of their global relevance:

a) The S20 Saudi Arabia Communique. The presidents of the National Academies of Sciences of the G20 countries have elaborated recommendations so that the global economy can expect the appropriate support from science. The focus is on «mitigating the system-level economic and social disruptions that will result from the next pandemic and other future critical transitions.» Therefore, the G20 Academies of Science recommend 10 actions that will make these disruptions actionable through actions on the «future of health» — which should be human-centered via therapy, vaccination-, to «harness the digital revolution globally» and through «circular economy» [6].

b) «The Swiss cheese model of Pandemic Defense»: The Australian virologist Ian Mackay simplified the concept of Reason for risk management with a graph with different tools to influence the same principle — the contact between infected and not infected persons — and with vaccination. But Reason proposed to use different principles so that level 2 can inhibit the disaster if the virus passed level 1, and level 3 would inhibit the disaster if the virus had pass as well level 1 and level two. The follow up of different tools of the same principle let not expect the same effect: But there is no help if all wearing FFP2 masks if you are infected because of a lousy technology when passing the airport.

But Makay's concept can be understood as paradigmatic for the political concepts of many countries [11].

c) COVID-19: Make it the Last Pandemic [11]: The World Health Assembly Council requested the WHO Director-General to initiate an independent, impartial, and comprehensive review of the international health response to the pandemic. The Independent Panel examined the state of pandemic preparedness before COVID-19, the circumstances of the identification of SARS-CoV-2 and the disease it causes, and responses globally, regionally, and nationally. Their recommendations have two objectives: first, to end the pandemic, and, second, to prevent a future disease outbreak from becoming a pandemic. To end COVID-19 the panel recommends a worldwide immunization program by mid 2022. To prepare the world for the future so that the next disease outbreak does not

become a pandemic, the panel calls for a series of crucial reforms that will address gaps in high-level coordinated leadership globally and nationally, funding, access to what must become global goods, and WHO's independence, focus, and authority. The WHO's options are, however, defined by the International Health Regulations (IHR 2005), among other things. The IHR, however, has proven to be more of a hindrance than a benefit. Therefore, the IP concludes, the COVID-19 pandemic could have been prevented with a more powerful IHR.

This leads to the following conclusions:

- No proposed solution takes into account the reasons logically derived by IPBES that lead to the re-emergence of potential agents of new pandemics. Thus, the rationale for why COVID-19 should be the «last pandemic» is lacking.

- No concept can justify why, even in the ideal case, the COVID-19 pandemic should end before sufficient immunity is achieved worldwide, i.e., by the end of 2022 at the earliest. («The pandemic is not over until it is over everywhere.»)

- The hope that future pandemics can be prevented by a more effective International Public Health Act requires that the scope of this legal basis be fundamentally expanded and that the needs arising from the IPBES report to be taken into account.

- Concepts that assume that one can successfully control a pandemic in the long term without taking into account the variability of the influencing factors «pathogen» and «host» forego essential possibilities that arise from the fact that the contact of infectious and infectious persons is often a necessary, but NEVER a sufficient explanation for the occurrence of a symptomatic or asymptomatic disease: without penetration of the pathogen e. g. through the mucosa of the nasal mucosa, there is no infection and therefore no disease. Thus, the decision for this biological process occurs at the contact of virus and cell and not at the contact of two individuals.

- The present concepts do not sufficiently consider mutants and the influenceability of their occurrence.

It would therefore be appropriate to take up the invitation to form an independent panel in which experts from all the problem areas addressed, with a corresponding mutual understanding of the different paradigms, would work out an overall solution.

The overlooked dimension: The pathogen of the next pandemic is unknown. Therefore, currently possible precautions can only be of a non-specific nature.

It should be clear that forward-looking strategies must include measures that can be taken now to prepare for an emergency in the future. But how do you prepare for a pathogen that cannot even be known today? Then, at least in the initial phase, all specific measures such as vaccination and specific therapies will be omitted. Then only universal-applicable, i.e. non-specific, instruments can be used.

This situation is not new in biology: only vertebrates have specific defense options, i.e. the use of anti-

bodies. But the danger of infection concerns and has concerned every living creature. They have survived because they have developed a non-specific defense. This has not been lost in the course of evolution to vertebrate and primate, but remains upstream of the specific process to prevent the penetration of pathogens into the organism.

The effectiveness of N-chlorotaurine (NCT) as a natural antiseptic

This mild oxidant is produced, for example, by mucosa cells of the nasal mucosa and secreted into the microbiome including the virobiome of the nasal cavity. As a weak oxidant, it does not attack its own mucosa cells, but it does attack the proteins of the virions. The difference to the effect of specific immunity by means of antigen-antibody reaction can be illustrated metaphorically with another oxidation process, namely the burning of wood: It makes no difference to the combustion process whether a statue with a star wreath, for example, has been carved from the wood or not. But it is different with specific immunity. Antigen-antibody reactions, however, require that immune cells have learned to form an antibody against very specific structures, e.g. this star crown of the pathogen carved out of wood. Only then, thanks to the coupling of the special structure of the star crown (the antigen) and the antibody formed by the immune system, can this pathogen be neutralized and, after phagocytosis, oxidized in the cell, e.g. by NO, and thus degraded.

Thus it becomes clear: antibodies become effective in the body, as after the penetration of the pathogen into the organism. And this takes place only after the organism has survived thanks to the non-specific defense until the cells of the specific defense have learned to form the specific antibodies and have been formed in sufficient quantities.

NCT can be produced on a large scale for more than 20 years. It subject of medical research with more than 200 publications in PubMed. Its high antiviral efficacy has also been demonstrated by e.g. 2020 against SARS-CoV-2 in vitro [3]. This can also be expected against all mutants. NCT has sufficient bactericidal, virucidal, fungicidal and protozoocidal activity in pharmacological doses and is excellently tolerated [10]. In addition, the substance is technically easy to manufacture, has high stability and can also be stored for months at 4°C, for example, as a 1% solution for nasal spray and for inhalation. It is neither CE-certified as a medical device nor approved as a drug. Its production is patent protected in Europe and therefore currently not available. Therefore, the substance cannot be prescribed magistraliter. Theoretically, a health minister could probably make it available via emergency decree for his area of responsibility.

Risk reduction in the vaccine shortage phase

The biological processes that occur during the incubation period — i.e., after contamination but before symptoms appear — open up an opportunity to reduce risks in the vaccine undersupply phase. In this phase, in the classical case of an illness with COVID-19, there is a gradual increase of the viral load in the nose. With the

help of antigen tests, it is possible to detect individuals whose viral load is large enough to infect others without symptoms themselves. These symptomless «excretors» can be quarantined. If these tests were performed on a large scale and a tolerable antiseptic, e.g. 1% NCT nasal spray, was given to each subject at the same time as the antigen test, this would have a much more far-reaching preventive effect than simply performing the test. The antiseptic would also reduce the current risk of everyone contracting the disease and the risk that people would reach the germ density required for transmission on the next day or the days to come. In addition, a nasal spray is sufficient for use over several weeks. This gives reason to hope that the medium and immediate risks can be reduced with comparatively little effort until protection can be optimized thanks to immunization.

The possible influence on the formation of mutants

The emergence of mutants currently represents a major unknown for the further course of the pandemic and the effectiveness of the vaccination programs. Many questions about the nature of mutant emergence remains unanswered to date. But obvious is the relevance of the phases in which the viruses are present in the body. Mutations outside the body can be neglected from a practical point of view: The fact that a mutant that has occurred in the environment should manage to penetrate the body and be reproduced there a corresponding number of times can probably be neglected in view of the high germ density that must first be achieved during the incubation period, despite the effectiveness of nonspecific defenses, by the release of viruses from previously infected cells into the nasal cavity, for example.

The decisive instrument for reducing the formation of mutants is therefore the targeted inactivation of viruses. On the one hand, this concerns inactivation in the air in rooms where many people are present. This is currently being used systematically in cruise ships and airplanes. Options would also exist, for example, through filter systems in department stores, schools, etc.

The ultimately decisive step, however, is again the strengthening of non-specific defenses by means of suitable antiseptics or also artificially produced antibodies that can be applied by nasal spray, for example.

ARGUMENTS FOR A FORWARD-LOOKING APPROACH

The Executive Secretary of IPBES has invited all international organizations to propose solutions and arguments from their point of view (VII). Therefore, this paper has been compiled and offered to all participants of the Eighth Plenary Session of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. In particular, it may be reconsidered:

1) Take up the suggestion of IPBES Executive Secretary and assemble a balanced cross-disciplinary independent panel to develop a general approach to

future pandemics and the upcoming COVID-19 pandemic that will continue for many months for many countries. All interested NGOs should be able to submit proposals to this panel. In this context, the valuable contributions available so far from special approaches are proving to be an invaluable basis.

2) «Never let a good crisis go to waste» for the «seismic shift from reaction to prevention of the fundamental systemic problem» (Chairperson of the IPBES Report «To escape the Era of Pandemics [5].

3) The hitherto overlooked possibilities of non-specific defenses are central to preparing for a coming pandemic. They seem irreplaceable in bridging the time needed for the development of specific tools, their pro-

duction and worldwide dissemination with the least possible damage.

4) Also currently, many poorer countries are in the situation without significant supply of vaccines. Their health risk could be reduced by non-specific means: A combination of «test, test, test» and the simultaneous administration of tolerable antiseptics (e.g., of 1% NCT as a nasal spray) offers hope that the intermediate and immediate harms of COVID-19 can be reduced until promised vaccines become available.

5) Overall, the reasons why a comprehensive approach to combat SARS-CoV-2 and COVID-19 has not been taken so far should be examined. Proposals for comprehensive approaches do exist [9].

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