

Covid-19, Global Justice, and a New Biopolitics of the Anthropocene

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Abstract

There is a potentially new biopolitics developing as the Covid-19 pandemic has triggered a larger crisis concerning the structure of societies politically and economically. There are, and will be, many opportunities for a democratic, humanistic, and ecological response so that the trajectory out of the crisis can be towards a better world. This optimistic view is taken with caution due to the fact of the condition of the geofinancial situation and global economy, urbanization, and the effects on the natural environment. If the trajectory of advanced technical civilization in the past was towards even more ecological catastrophe moving us into the Anthropocene, then it may now be possible for us to take another trajectory guided by global justice and environmentalism. The human rights and environmental movements made great gains in the 20th century and there is a basis in place to effectively meet the challenges of the new biopolitics. We can act to make sure that the way out of the

current crisis is to reconfigure the system to a new biopolitical reality based on global justice and ecology through democratic process.

Keywords: open source, democracy, ecology

The Anthropocene

There were two events in the 20th century from which we have come to better understand the conditions for life on earth today. One event is related to the geophysical system of Earth and came about as a specialized group of scientists developed nuclear technologies and brought the societies of the world into the Atomic Age. Unknown at the time, this event would also be the beginning of a new geological epoch that we now know as the Anthropocene. The Anthropocene is scientifically characterized due to fallout from radiation making it possible for geologists to examine sedimentation that normally took millennia before it could be measured with any precision. This epoch is thought to have a certain trajectory for existential risk.¹ The second event of extraordinary importance, and at the time, not yet connected to the Anthropocene, was the matter of human rights, wherein the later part of the 20th century the radical humanism of the Enlightenment and the codification of UN1948 led to global justice.² This period eventually began the

¹ Colin N. Waters et al., "A Stratigraphical Basis for the Anthropocene?," *Geological Society, London, Special Publications* 395, no. 1 (January 1, 2014): 1–21, <https://doi.org/10.1144/SP395.18>; Colin N. Waters et al., "Can Nuclear Weapons Fallout Mark the Beginning of the Anthropocene Epoch?," *Bulletin of the Atomic Scientists* 71, no. 3 (January 1, 2015): 46–57, <https://doi.org/10.1177/0096340215581357>; Steffen, Will, Johan Rockström, Katherine Richardson, Timothy M. Lenton, Carl Folke, Diana Liverman, Colin P. Summerhayes, et al. 'Trajectories of the Earth System in the Anthropocene'. *Proceedings of the National Academy of Sciences*, 1 August 2018, 201810141. <https://doi.org/10.1073/pnas.1810141115>.

² T. W. Pogge, *Global Justice* (Wiley, 2002); Rainer Forst, *The Right to Justification: Elements of a Constructivist Theory of Justice* (Columbia University Press, 2012); Thomas W. Pogge, "Is Kant's Rechtslehre a 'Comprehensive Liberalism?," Immanuel Kant, May 15, 2017, <https://doi.org/10.4324/9781315252629-5>; A.

integration of humanism with environmentalism for a modern, integral ethics beyond the international matters of justice that dealt with large bodies or structures such as states and supranational organizations.³

Global justice is integral in that it creates a wider and more accurate perspective on how the larger structures affect the actual human being, their lived experience, their physical and mental health, their families and immediate surroundings; and now technology, ecology and the geophysical system of the Earth. While there is much work to be done, this is a tremendous development in human life for organized, technical societies and in how we interrelate with each other and live within nature as a basis of life. In the current work it is on this dynamic that we will provide a commentary on how global justice and technology can be brought together into an ecocentric view to address the essential matter of each human being and how they are interacting with, and affected by, a much wider set of biological and technical conditions, which taken in aggregate have large scale outcomes on the natural world. It is a philosophical inquiry taking a presumptive position on technology and an optimistic social view about what political and social arrangements will be created due to the Covid-19 pandemic and the economic collapse. What kind of innovation and reconfiguration will be possible?

For the current conditions of political and social upheaval we use the term *a new biopolitics*; and in conjunction with the political and economic conditions, for the large-scale technical surroundings we give the term *technosphere*. The technosphere consists of the built system, the machines, and the high tech additions over the last 50 years of the Digital Age and with the futuristic enabling potential of nanotechnology.⁴

Follesdal and T. Pogge, *Real World Justice: Grounds, Principles, Human Rights, and Social Institutions* (Springer Science & Business Media, 2005).

³ T. W. Pogge, *Global Justice* (Wiley, 2002); A. Follesdal and T. Pogge, *Real World Justice: Grounds, Principles, Human Rights, and Social Institutions* (Springer Science & Business Media, 2005).

⁴ David Harvey, *Paris, Capital of Modernity* (New York, NY: Routledge, 2005); Also, see the work of Professor John Weckert on nanoethics.

Covid-19 and a New Biopolitics

Based on the growing awareness in the general public and activism on environmental issues, a new biopolitics may be possible due to the Covid-19 pandemic as another of the epic events in history related to public health and human well-being, and because the Pandemic has intensified economic troubles triggering another economic collapse. Currently, we are facing economic disintegration that may surpass the Great Depression.⁵ The crisis is occurring within, and we think intrinsic to, the Anthropocene. The outcome of this current historic event could be a clearer view of how the global economic system affects the natural environment both ecologically and within the geophysical system. The economic collapse could have been triggered by a number of pre-existing conditions that were increasing, such as the oil crisis, massive quantitative easing (QE) and subsidies by governments along with both irrational and rational market actors, and/or some form of debt crisis that has been building up.⁶ Concerning emerging countries, the Financial Times reported, “The scale and breadth is exceptional” as more than 100 countries are facing a “perfect storm” while a “solution” may still be possible.⁷ While any of the various problems could have triggered and exacerbated an already precarious economy, Covid-19 with its social outcomes actualized the historic event. This crisis is unique as far as economic events go in that it is also a biological event that helps us to better realize our place in the natural world. The current

⁵ “Nouriel Roubini Sees A Bad Recovery and a Depression (Podcast),” Bloomberg.com, accessed May 5, 2020, <https://www.bloomberg.com/news/audio/2020-05-03/nouriel-roubini-sees-a-bad-recovery-and-a-depression-podcast>.

⁶ “Fossil Fuels Subsidised by \$10m a Minute, Says IMF? | ScienceBlogs,” accessed January 10, 2019, <https://scienceblogs.com/stoat/2015/05/18/fossil-fuels-subsidised-by-10m-a-minute-says-imf>.

⁷ Robin Wigglesworth, “A Solution to the Looming Debt Crisis in Emerging Markets,” Financial Times, May 4, 2020, <https://www.ft.com/content/b97eb604-4f6b-49bc-b350-3287bbde00c9>.

crisis can show us more clearly the effects of the economy and technosphere on the natural environment. Scientifically, socially, and politically the economy and technosphere are not just related, they are integral to a comprehensive response to major challenges and hence a potential, wider development of global justice – modern humanism and ecology together can provide us with an eco-humanistic trajectory.

Medical and Public Health Implications of the Covid-19 Pandemic

Concerning the Covid mortality, the virus is approximately 10 times that of the seasonal flu though it can be much higher depending on various factors.⁸ It is also the case that some will be maimed by the virus such as permanent damage to lung tissue that leads to a decrease in quality adjusted life years (QALY).⁹ There are early reports that even healthy people are dying (or being maimed), e.g., in addition to decreased lung capacity, due to damage to lung tissue, there are blood pressure problems and large vessel vascular accidents occurring perhaps related to the renin-angiotensin system.¹⁰ Hypertension and Covid-19 lethality related to the anti-hypertension medications known as ACE inhibitors may be a factor that we still have to understand better. Are ACE inhibitors protective against Covid-19, or are they leading to adverse effects or negligible ones? We also see thrombus formation in small vessels, even in some young Covid-19 patients. The

⁸ Anthony S. Fauci, *COVID-19 “Ten Times More Lethal than Seasonal Flu”*: Fauci, 2020, <https://www.reuters.com/video/watch/idOVC4M5M1R>. Also, please see: Hasibender, W., 2020. Mortalitätsvergleich von Influenza und SARS-CoV-2: Ist die Grippe fast dasselbe wie COVID-19? *Anaesthesie.News*. URL <https://www.anaesthesie.news/aktuelles/mortalitaetsvergleich-von-influenza-und-sars-cov-2-ist-die-grippe-fast-dasselbe-wie-covid-19/>

⁹ E. Nord, “Quality-Adjusted Life-Years,” in *Encyclopedia of Health Economics*, ed. Anthony J. Culyer (San Diego: Elsevier, 2014), 231–34, <https://doi.org/10.1016/B978-0-12-375678-7.00510-1>.

¹⁰ Muthiah Vaduganathan et al., “Renin–Angiotensin–Aldosterone System Inhibitors in Patients with Covid-19,” *New England Journal of Medicine* 382, no. 17 (April 23, 2020): 1653–59, <https://doi.org/10.1056/NEJMSr2005760>.

tendency to hypercoagulation in small vessels could be a consequence of a secondary immune response to the virus.¹¹ Additionally, it also seems we have to rethink intubation unless there is no other option left; further, it seems we have to rethink oxygen therapy in Covid-19 patients. This pandemic is not a straight-forward seasonal flu, but presents medical complexities that are not yet fully studied.

Covid-19 is located in the ‘ideal’ area on a graph for viruses between being lethal and contagious turning an epidemic into a pandemic; and with an amplification due to economic and physical conditions ranging from malnourishment to pre-existing conditions/age to urbanization (crowding and pollution) to logistics/transportation to resource extraction. Biologically, the more dangerous viruses such as Ebola have up to 90% morbidity but are not highly contagious.¹² Of importance, under current global conditions, when the socio-economic and physical conditions are factored in with the medical, Covid-19 becomes a serious public health threat leading to the collapse of medical care systems, to mental health risks, and then to the risk of an epidemic of domestic and public violence.¹³

¹¹ “Preliminary Case Series Leads to New Questions About the Disease Progression of COVID-19 in Patients with Blood Clots in the Lung,” Mount Sinai Today, April 13, 2020, <https://health.mountsinai.org/blog/study-leads-to-new-questions-about-the-disease-progression-of-covid-19-in-the-lungs/>.

¹² WHO, “Ebola Virus Disease,” accessed May 5, 2020, <https://www.who.int/news-room/fact-sheets/detail/ebola-virus-disease>.

¹³ Patrick Roney, “U.Va. Health to Furlough Employees, Reduce Salaries Due to \$85 Million Deficit,” The Cavalier Daily, April 28, 2020, <https://www.cavalierdaily.com/article/2020/04/u-va-health-to-furlough-employees-reduce-salaries-due-to-85-million-deficit>; ABC News (Australia), “Brazil Threatens to Become COVID-19 Hotspot with Health System on Verge of Collapse,” April 25, 2020, <https://www.abc.net.au/news/2020-04-25/coronavirus-brazil-health-system-close-to-collapse-covid19/12184912>; Mari Yamaguchi and Yuri Kageyama, “Coronavirus: Japan’s Medical System on Verge of Collapse, Doctors Say,” Global News, April 18, 2020, <https://globalnews.ca/news/6836522/coronavirus-japan-medical-system/>; Bernadette Tamayo, “Covid Could ‘Collapse’ Healthcare System,” The Manila Times, March 23, 2020, <https://www.manilatimes.net/2020/03/23/news/top-stories/covid-could-collapse-healthcare-system/705077/>.

The next level of medical investigation and public health will be to examine the various biological mechanisms of the virus such as inflammation, fluid in the lungs, effects on blood pressure, and then vaccines, asymptomatic carriers, and rates of immunity to the virus over time. It is too early to tell to what degree post-Covid-19 immunity is a medical fact, and also if a second wave infecting those who have yet to be exposed will emerge. Yet, there are strong indications for post-infectious immunity as researchers at the South Korean Centre for Disease Control and Prevention (KCDC) now say it is impossible for the Covid-19 virus to reactivate in humans.¹⁴

Correspondingly, epidemiologists and virologists are not psychiatrists, psychologists, and social workers. It is known that, though still unclear since psychoneuroimmunology is not as precise as other areas of medicine, fear itself can lower the strength and resilience of the immune system.¹⁵ We know from epigenetic research, and more specifically research suggests when there is a chronic cortisol increase in patients with anxiety disorder, anxiety is associated with an increased CpG DNA-methylation in the promoter of the gene encoding *Asb1*.¹⁶ While the multiple highly specific mechanisms are yet to be understood, we do have some information medically and socially. There ought to be a wide-scale call for protective precautions and practical changes to social and psychological services, along with the necessary medical response.

¹⁴ “Coronavirus: Scientists Conclude People Cannot Be Infected Twice,” Sky News, accessed May 4, 2020, <https://news.sky.com/story/coronavirus-scientists-conclude-people-cannot-be-infected-twice-11981721>.

¹⁵ Valerie L. Kinner, Oliver T. Wolf, and Christian J. Merz, “Cortisol Increases the Return of Fear by Strengthening Amygdala Signaling in Men,” *Psychoneuroendocrinology* 91 (May 1, 2018): 79–85, <https://doi.org/10.1016/j.psyneuen.2018.02.020>; Rebecca T. Emery et al., “Anxiety Associated Increased CpG Methylation in the Promoter of *Asb1*: A Translational Approach Evidenced by Epidemiological and Clinical Studies and a Murine Model,” *Neuropsychopharmacology* 43, no. 2 (January 2018): 342–53, <https://doi.org/10.1038/npp.2017.102>.

¹⁶ Emery et al., “Anxiety Associated Increased CpG Methylation in the Promoter of *Asb1*.”

Social distancing is the wrong message and is being used as grounds for much grievance that has already witnessed U.S. citizens carrying weapons into the center of Detroit, Michigan causing lawmakers to have to wear protective equipment.¹⁷ Undoubtedly the tensions created by the current crisis could lead to more serious socio-political conflict, and especially in less democratic countries. As a better slogan and practice, we advocate for *physical distancing* where necessary, while remaining social.¹⁸ Within the conditions leading to conflict, it can be expected that the mental health crisis will be *less* seen in other ways, such as finding expression in domestic violence due to tensions and isolation bringing families into conflict internally.¹⁹ There are worrying indicators that children will experience child neglect and abuse as the overall crisis deepens.²⁰

Other forms of expression of social and psychological effects due to stress, and somewhat understandable, are the proliferation of conspiracy theories. First, it must be recognized that these guesses are not theories but speculations, and the confusion that accepts speculations as theories may be

¹⁷ Sara Burnett Associated Press et al., “Armed Militia Joins Michigan Protest, Spurring Legislators to Don Bulletproof Vests - The Boston Globe,” BostonGlobe.com, accessed May 5, 2020, <https://www.bostonglobe.com/news/nation/2020/05/02/armed-militia-joins-michigan-protest-spurring-legislators-don-bulletproof-vests/Yh1TsafSrXTI0gi4sdQxeK/story.html>.

¹⁸ Thomas Abel and David McQueen, “The COVID-19 Pandemic Calls for Spatial Distancing and Social Closeness: Not for Social Distancing!,” *International Journal of Public Health* 65, no. 3 (2020): 231–231.

¹⁹ Andrew M. Campbell, “An Increasing Risk of Family Violence during the Covid-19 Pandemic: Strengthening Community Collaborations to Save Lives,” *Forensic Science International: Reports* 2 (December 1, 2020): 100089, <https://doi.org/10.1016/j.fsir.2020.100089>; Caroline Bradbury-Jones and Louise Isham, “The Pandemic Paradox: The Consequences of COVID-19 on Domestic Violence,” *Journal of Clinical Nursing*, no. Editorial (April 12, 2020), <https://doi.org/10.1111/jocn.15296>.

²⁰ Pâmela Rocha Vieira et al., “Isolamento social e o aumento da violência doméstica: o que isso nos revela?,” *Revista Brasileira de Epidemiologia* 23 (2020), <https://doi.org/10.1590/1980-549720200033>; Peter Green, “Risks to Children and Young People during Covid-19 Pandemic,” *BMJ* 369 (April 28, 2020), <https://doi.org/10.1136/bmj.m1669>.

considered in part to understanding what is happening. To counter the conspiracy speculations, for something like this virus to be developed in a lab it is important to remember that there has to be testing because no one knows how a virus created in a lab will operate in the real world. It could be completely inactive to contagious and fairly lethal. To obtain quality data, there would have to be a research program and then extensive testing, all of which would be detectable by intelligence agencies and investigative journalists. There is no evidence for such a program. The other direction for conspiracy speculations or that the virus was deliberately imposed on societies from a high-level government lab in China would still require the practical matter of putting into place modern public health protocols that would slow down the spread of any contagious disease. While it will be up to intelligence agencies, scientific investigators, and journalists to determine where the virus originated from and what occurred; at this point, our view is that it is almost certain that Covid-19 is as described by early investigators – the virus is a zoonosis transmitted as humans and wild animals come into contact and based on a wider intrusion of civilizational systems into the natural environment - hence coronavirus.²¹

Generally speaking, the geographical and socio-economic parts along with the wider biological and ecological aspects found in the destruction of nature, crowding in cities, and open markets with animals all together can be expected to create the conditions for an epidemic or pandemic. In fact, soil depletion, disruption of wildlife, and the elimination of insect communities all are contributing to pressures that have emerged as a new biopolitics. Covid-19 and lesser epidemics are foreseeable additions. There are plenty of examples from history, but not with the systemic crowding in cities and extensive damage to the natural environment that there is today caused by

²¹ Phoebe Weston, "'We Did It to Ourselves': Scientist Says Intrusion into Nature Led to Pandemic," *The Guardian*, April 25, 2020, <https://www.theguardian.com/world/2020/apr/25/ourselves-scientist-says-human-intrusion-nature-pandemic-aoe>.

urbanization. “By 2030, the world is projected to have 43 megacities with more than 10 million inhabitants, most of them in developing regions. However, some of the fastest-growing urban agglomerations are cities with fewer than 1 million inhabitants, many of them located in Asia and Africa. While one in eight people live in 33 megacities worldwide, close to half of the world’s urban dwellers reside in much smaller settlements with fewer than 500,000 inhabitants.”²² In other periods when there was civilizational breakdown due to wars, societal collapses, and pandemics, there was a de-urbanization that occurred and we can expect that process to some degree today. However, if we return to what was the trajectory of advanced technical society and potential ecological collapse, or the old “normal”, then we can expect not only more epidemics and pandemics in the future but far worse.²³

What is clear is that for Covid-19 its characteristics of high virulence and longer incubation time are why it spreads rapidly. Without a quick response with personal protective equipment (PPE), testing stations, and normal public health community-based tracking (not state or corporate surveillance), these kinds of viruses can be a long way towards exponential growth if leaders and communities do not act in time. The empirical evidence now shows that the failure, sometimes deliberate negligence, to meet this public health challenge has rendered many susceptible to serious health effects.²⁴ The likelihood of a second wave is a realistic probability and should not be downplayed; we can expect that if societies open up too quickly, and without a public health protocol in place with better

²² “68% of the World Population Projected to Live in Urban Areas by 2050, Says UN,” UN DESA | United Nations Department of Economic and Social Affairs, May 16, 2018, <https://www.un.org/development/desa/en/news/population/2018-revision-of-world-urbanization-prospects.html>.

²³ Weston, “We Did It to Ourselves.”

²⁴ “Trump Calls Coronavirus Democrats’ ‘New Hoax,’” NBC News, accessed May 5, 2020, <https://www.nbcnews.com/politics/donald-trump/trump-calls-coronavirus-democrats-new-hoax-n1145721>; “Fox & Friends Agrees with Trump That Coronavirus Is a ‘Hoax’ | Media Matters for America,” accessed May 5, 2020, <https://www.mediamatters.org/coronavirus-covid-19/fox-friends-agrees-trump-coronavirus-hoax>.

industrial design, then there will be more waves in the future. It would be irrationally optimistic to open too quickly, however, if such an opening occurs at this moment, then the first wave could continue on with more exponential growth.²⁵ Henceforth, governance systems should rely on a participatory process from the local to the national to international in order to put the necessary precautions into place. Areas of high density of population and pollution may need higher levels of attention if the data shows a medically significant correlation. Such reasonable action will subsequently create the conditions for dealing with the economic crisis. Taken separately, if the basic public health measures had been put into place, then the deaths and economic cost of the Pandemic would have been far less. Not unfortunately, but tragically, citizens in the U.S. are given the option to go back to work and face the threat of another wave or be hungry. Already in the United Kingdom, many are going at least one day without food, and we can expect that many more are skipping at least one meal.²⁶ In poor countries, such a situation can be deadly as starvation can be expected to spread. In the U.S., where there is astronomical wealth, the crisis is becoming a matter of ‘work or be hungry’; and for older people it is becoming an imposed, dangerous mix of rugged individualism and stoicism – the message that comes across is take care of yourself in your vulnerable state and even be willing to give up your life for the economy.

With the above circumstances in mind, it is possible to move through the global crisis of pandemic, both medically and socially, though the condition societies will be in afterwards is uncertain. The great suffering cannot be measured. Therefore, to deal with this uncertainty it is imperative that all citizens have access to healthcare and education for all. This imperative

²⁵ “IHME | COVID-19 Projections,” Institute for Health Metrics and Evaluation, accessed May 5, 2020, <https://covid19.healthdata.org/>.

²⁶ Felicity Lawrence, “UK Hunger Crisis: 1.5m People Go Whole Day without Food,” *The Guardian*, April 11, 2020, sec. Society, <https://www.theguardian.com/society/2020/apr/11/uk-hunger-crisis-15m-people-go-whole-day-without-food>.

means that both medical care and education are brought to a sufficient level that people do not live under threat and can understand current conditions in order to take care of themselves and their families; and then to express democratic duties.

What we intend to explain is that the Covid-19 pandemic is not just biology, and therefore, not solved completely with the medical system, even with relatively good systems where access and medical sophistication are combined. The pandemic is already a tragedy, but it is not an existential threat. Biology has been combined with the fact of this 'ideal' virus into a socio-economic system of 'just in time' or services based on economic ideology, and the built system of urbanization where we see a predictable amplification of the morbidity and mortality. The great tragedy of Covid-19 is the chronological factor related to how we are organized geographically for living and for production and for our myriad social functions where Covid-19 can spread reaching vulnerable people almost at the same timeframe as even a quick response. Therefore, this mix of circumstances collapses medical systems and stresses societies that were not prepared. Ultimately, the public health crisis of Covid-19 has brought to light the immense failure of the political economy known as the market or contemporary capitalism, a hyper-financialised extractive economic system combined with hyper-urbanisation.

2020 Economic Collapse, Global Justice and Environmentalism

In the larger sense, while acknowledging that there is great suffering due to the Pandemic, Covid-19 is miniscule compared to, and probably a result of, the planetary disruption of the ecosystem with its geophysical dimension. As a species, our lives and economy depend on this planetary dimension. The oceans and atmosphere of the Earth have undergone significant

changes since 1750 and even more over the past few decades.²⁷ As mentioned, Covid-19 was just one of many factors that could have deflated the bubble of an economy constantly teetering on crisis that was already being propped up with massive stimulus, subsidies, and environmental extraction.²⁸

Psychologically, this epic biological event can be a way to remind us that we are all in this life together and therefore dependent upon planet Earth. While modern medical protocols for dealing with pandemics have been in place for at least a century, and climate change had been hypothesized by the late 19th century, it was in the 1960s that environmentalism entered as a large-scale organized effort, thereby combining the humanistic advances of the Enlightenment with the awareness and action necessary to address the mounting effects that civilization was having on the natural environment. We will turn our attention to this integration between humanism and environmentalism.

In the late 19th century, the Swedish chemist Svante Arrhenius had hypothesized, putting it in today's terms, that the effects of industrialism on the natural environment could disrupt the geophysical system.²⁹ By the late 1980s, climate change was on political agendas and becoming known in the larger public.³⁰ Unfortunately, it was not until the Great Recession that we saw a large reduction in the effects on the natural world. Since then, sadly, mining and energy extraction

²⁷ Amy Goodman, *Climate Scientist James Hansen Warns World Is on Wrong Track to Prevent Runaway Global Warming* (New York, NY: Democracy Now, 2015), http://www.democracynow.org/2015/12/4/climate_scientist_james_hansen_warns_world; James Hansen et al., "Ice Melt, Sea Level Rise and Superstorms: Evidence from Paleoclimate Data, Climate Modeling, and Modern Observations That 2 Deg C Global Warming Is Dangerous," *Atmospheric Chemistry and Physics* 16, no. 6 (March 22, 2016): 3761–3812, <https://doi.org/10.5194/acp-16-3761-2016>. Wally Broecker, "Future Directions of Paleoclimate Research," *Quaternary Science Reviews* 16, no. 8 (January 1, 1997): 821–25, [https://doi.org/10.1016/S0277-3791\(97\)00050-4](https://doi.org/10.1016/S0277-3791(97)00050-4).

²⁸ "Fossil Fuels Subsidised by \$10m a Minute, Says IMF? | ScienceBlogs."

²⁹ Svante Arrhenius, "XXXI. On the Influence of Carbonic Acid in the Air upon the Temperature of the Ground," *Journal The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science Fifth Series* (April 1896): 237–76.

³⁰ "Hansen Senate Testimony, June 23, 1988," accessed May 3, 2020, https://www.sealevel.info/1988_Hansen_Senate_Testimony.html.

have both increased, for example, the mining of aluminum almost doubled between 2005 til recently, and it only decreased during the Great Recession. Even with a perfect record on recycling it is still necessary to have bauxite mines and chemical factories, along with massive processing factories and transportation.³¹ The situation with recycling is complex since various technologies require high-quality materials and precision such as airplanes, and are not reliant on recycled aluminum; such technologies require newly extracted metal. Concerning the Pandemic, as could be expected, mining has significantly decreased over the past couple of months in 2020, the system of aviation will never be the same, and fossil fuel emissions have dramatically declined.³²

The current Covid-19 Pandemic, and immediate collapse of the economy, can be expected to have even larger effects on the decrease of climate disruption than the Great Recession (and post-9-11). The geophysical and ecological conditions should be a matter of public discussion as we move to what could be a necessary reconfiguration of the productive system – a biopolitical economy? As some speak of a post-Covid-19 world, we may speculate about what it will be like. “To what extent billionaires, hedge funds and internet giants are directly or indirectly benefiting from the crisis. And, also in which direction society is moving in relation to democratic control of tasks [that] which these corporations increasingly assume for state institutions. It almost goes without saying that this will likely not have a liberating effect on the practice of democracies - especially after treasuries have been exhausted as a result of

³¹ Private email with ecophilosopher Derrick Jensen on his upcoming book, *Bright Green Lies*; Int'l Primary Aluminum Inst., “World Aluminium Primary Production,” accessed May 8, 2020, <http://www.world-aluminium.org/statistics/#histogram>.

³² Tyler Clifford, “Warren Buffett’s Exit from Airline Stocks Is a Wake-up Call for Index Investors, Jim Cramer Says,” CNBC, May 4, 2020, <https://www.cnbc.com/2020/05/04/jim-cramer-warren-buffett-exit-from-airline-stocks-was-a-big-deal.html>.

coping with the crisis.”³³ While business-as-usual will likely be reasserted, the reconfiguration we envision would be towards eco-societies and by necessity involve how people are organized for reduction of extraction and energy use, production of needs, the logistics of shorter supply chains that are community-focused, and new rules and roles for social systems within a new biopolitics.

In New Delhi, the sky is said to be like “alpine” and in Beijing the European Space Agency shows the dramatic change from polluted to clear skies via satellite imaging.³⁴ In these two megapolises, where pollution is lethal and death rates are elevated due to pollution; and in a time when most of the population live in cities, it is imperative that a new biopolitics focuses on the matter of urbanization. The Lancet reported in 2016, “...increases in ambient air pollution driven by the rapid expansion of megacities, globalisation of industrial production, proliferation of pesticides and toxic chemicals, and growing use of motor vehicles. Ambient air pollution deaths have been increasing worldwide since 1990, and increases are most substantial in the most rapidly industrialising countries”.³⁵ Currently, it is also being reported that exposure to pollution may be a risk factor in death from Covid-19.³⁶ How we are

³³ “Corona-Krise — Außer Kontrolle,” accessed May 1, 2020, [https://digital.freitag.de/1820/ausser-kontrolle/.](https://digital.freitag.de/1820/ausser-kontrolle/); Jacquelyn Martin, “Sen. Burr Faces Justice Department Probe as Criticism of His Stock Sales Intensifies,” *charlotteobserver*, accessed April 10, 2020, <https://www.charlotteobserver.com/news/politics-government/article241646666.html>. The quote is from Emanuel Pastreich in his address for independent candidate for US President

³⁴ European Space Agency, *Nitrogen Dioxide Emissions over China*, accessed May 3, 2020, https://www.esa.int/ESA_Multimedia/Videos/2020/03/Nitrogen_dioxide_emissions_over_China. Hannah Ellis-Petersen et al., “It’s Positively Alpine! Disbelief in Big Cities as Air Pollution Falls,” *The Guardian*, April 11, 2020, sec. Environment, <https://www.theguardian.com/environment/2020/apr/11/positively-alpine-disbelief-air-pollution-falls-lockdown-coronavirus>.

³⁵ Philip J. Landrigan, “Air Pollution and Health,” *The Lancet Public Health* 2, no. 1 (January 1, 2017): e4–5, [https://doi.org/10.1016/S2468-2667\(16\)30023-8](https://doi.org/10.1016/S2468-2667(16)30023-8).

³⁶ Xiao Wu et al., “Exposure to Air Pollution and COVID-19 Mortality in the United States: A Nationwide Cross-Sectional Study,” *MedRxiv*, April 27, 2020, 2020.04.05.20054502, <https://doi.org/10.1101/2020.04.05.20054502>.

organized for production and distribution based on geographic organization, and finally how we use natural resources are all necessary components to provide clarity on a new framework. While Covid-19 is a difficult science lesson to learn, it does open the way for a wider perspective on the current biopolitical 'climate', geographic space, and overall condition of Earth. Whether a more accurate view will be put into large-scale reduction through democratic process that makes a reasonable transition possible should be the central matter of the new biopolitics. Democratic feedback can already be seen in basic networked-citizen reporting where the WHO has asked for citizens to take photographs of the clear skies so that a *citizens' benchmark* can be established to show how normalized air pollution has become. This simple action by citizens could then lead to open reasoning about policy suggestions. María Neira speaking on behalf of the WHO said, "We can use those clean memories to inspire a more healthy and green recovery," While her comment is an admission that we expect business as usual and the skies to become polluted again, the WHO initiative is a good example of a program that could move directly into digital open reasoning and then larger development of clean air policy.

Global Justice and Biopolitics

While we do not think technological determinism is a valid description of the conditions above because there are political freedoms and modifiable social, economic, and environmental changes possible, it is clear that the technosphere and the political economy are significant in molding our experience, opportunities, bodies, and even our minds. Due to limited space, instead of a critique of the technosphere, it will be more fruitful to argue concerning how the new biopolitics will be formed, and how access to the technosphere is developed as a matter of global justice. Therefore, access to the technosphere as we use the term is based on the fulfillment of UN1948, including specific needs such as wholesome food/calories; clean air, water, and soil; and also we want to make reference to the fact that all

human beings ought to have the right to a global order that is supportive of life in a healthy way and that we all ought to have the capability to participate in organized social life.³⁷ Equal access to the technosphere can be found in Article 21(2) “Everyone has the right to equal access to public service in his country,” and Article 28 “Everyone is entitled to a social and international order in which the rights and freedoms set forth in this Declaration can be fully realized, where also each has a right to the benefits of the technological advances of the day.”³⁸ The United States embraced a vision for the future under the United Nations charter that was inspiringly internationalist. That tradition has been suppressed, but is not absent. In fact, a young person, Greta Thunberg, has become an articulate representative engaging in a new forum of open reasoning on the major topics of the day, and specifically climate change.³⁹

While many young people are engaging to a high degree, and this is good, we are also aware of the true moral failure of rich societies when we see that children and peasant farmers, mostly women, are suffering the way to a better world. It is commendable that they are leaders. The policies, organizing, and individual voluntary discipline should be the responsibility of those who have benefitted from the system materially and already have basic securities and freedoms to act; first to not increase or benefit from any harms, to rectify past harms, and then to act to provide assistance. And yet, the most vulnerable experience severe hardships from indirect and direct violence along the supply chains of the world that not only extract resources and create goods for a small population of the world but are indicted in climate change.

³⁷ UN, “Universal Declaration of Human Rights,” October 6, 2015, <https://www.un.org/en/universal-declaration-human-rights/index.html>.

³⁸ UNESCO, “Universal Declaration on Bioethics and Human Rights,” accessed September 21, 2015, <http://www.unesco.org/new/en/social-and-human-%20sciences/themes/bioethics/bioethics-and-human-rights/>.

³⁹ Amy Goodman, “*Our House Is Still on Fire*”: Full Speech by Greta Thunberg at World Economic Forum in Davos | Democracy Now! (Davos: Democracy Now, 2020), https://www.democracynow.org/2020/1/21/our_house_is_still_on_fire.

We suggest that we move back to a new focus on true global cooperation, therefore, a new biopolitics could be a new internationalism where cooperation is the primary response to climate change. While this response will not be one of the gimmicks like nationalism for political cynicism and/or climate engineering for technological absurdity, the ethical considerations of international cooperation and how we use technology towards ecological and humanistic ends must be a matter of policy. We also suggest a complete transformation of societies away from extraction and consumption.⁴⁰

To address the new biopolitics, we will have to consider the technosocial reality that all will share due to planetary effects of technology and human societies, particularly how the rich countries operate. As a reasonable direction, we argue for the necessity of a technosphere to be developed into a planetary system of advanced technical ecological societies involving: ethics and technology, or more clearly then energy, economy, and ecology.

The Anthropocene is coined based on the geological evidence, where the scientific consensus indicates that advanced technological civilization, and particularly how the economy is organized is causal for climate change and probably disruption that has begun. On a large scale, how we are organized geographically and how we produce and distribute has become powerful and destructive enough to render large effects on the geophysical system of the planet.⁴¹ The technosphere operates by myriad interactions between material life such as artifact, structures, and machines, geofinancial institutions, geopolitical institutions, and the natural environment; and also, negotiation,

⁴⁰ Sarah Bregman, "Why we must have an independent for president," *Korea IT Times*, April 24, 2020, <http://www.koreaitimes.com/news/articleView.html?idxno=97061>.

⁴¹ Will Steffen et al., "Trajectories of the Earth System in the Anthropocene," *Proceedings of the National Academy of Sciences*, August 1, 2018, 201810141, <https://doi.org/10.1073/pnas.1810141115>; Waters et al., "A Stratigraphical Basis for the Anthropocene?"

contracts, code, design, knowledge.⁴² The possibility of change on such a level is difficult to envision, and perhaps somewhat impossible to do at this point; however, it is certain that opportunities abound for us to act to bring about a more just, saner, world that honors the integrity of human beings and nature. We need to act quickly since the choices we have and opportunities will increasingly approach matters of survival making time increasingly short. As options become limited, the opportunity to choose is dwindling, both politically and physically.

Ecologically-based humanistic values can be a guide for this enormous project and the application of science and technology for which the public discussion or open reasoning can take place. Ongoing education that involves a revisiting of how to learn will be primary for this participation in what we call *open reasoning* as a forum for discussion such as *digital deliberative democracy*.⁴³ Open reasoning is to take deliberative democracy to video platforms, especially during the times of pandemic or other crises. Democracy is necessary due to human values, which is pragmatic because of constant feedback. With much of the world staying at home and where there is access to the Internet, a digital, open reasoning and an open, digital Republic of Letters would be beneficial for continuing education and further development of dialogue.⁴⁴ Information and

⁴² L. Hartsell, J. Weckert, and T. Pogge, "Nanoscience, Ethics and Progress: The Poor and Advanced Technologies," in *2011 International Conference on Nanoscience, Technology and Societal Implications (NSTSI)*, 2011, 1–7, <https://doi.org/10.1109/NSTSI.2011.6111991>; Soraj Hongladarom, *Global Justice, Technology, & Societal Innovation in the Anthropocene* (Chulalongkorn University, 2019), https://www.youtube.com/watch?v=KF_oeFnpnHk; Layne Hartsell et al., "Global Justice, Technology, And Societal Innovation In The Anthropocene: Asia And The Nordics," *Repository of Reflections on Science, Philosophy & Gaming*, no. Fall 2019 (2019), <http://www.sciphiweb.com/blogdetails.php?id=VGxSalBRPT0=>.

⁴³ James Fishkin, *When the People Speak: Deliberative Democracy and Public Consultation* (Oxford; New York: Oxford University Press, 2009).; Layne Hartsell, How do you envision an "open source school"?, October 29, 2015, https://medium.com/@La_scuola_open_source.

⁴⁴ "Netflix Gains 16 Million New Subscribers In Q1 Due To Coronavirus Lockdown," accessed April 30, 2020, <https://www.ibtimes.com/netflix-gains-16-million-new-subscribers-q1-due-coronavirus-lockdown-2962886>; Greg Ferenstein,

communications technology (ICT) is an enabler of this new system of networked education if the primary technical matter of infrastructure is combined with universal access to the Internet so that we can overcome the digital divide since access to the Internet has become essential to public education and democracy.⁴⁵ The Institute of Electrical and Electronics Engineers (IEEE) position on the endorsement of universal access states, “IEEE endorses the goal of universal access to the internet and supports national initiatives and international collaborations designed to expand access to the billions of people in both developed and developing countries around the world who do not have access to the Internet. The Internet today is an essential tool in providing and protecting the fundamental economic, social, cultural, civil and political human rights set forth in the United Nations Universal Declaration of Human Rights and other international agreements and treaties.”⁴⁶ As the IEEE has called on all of its members and ‘worldwide community’ to advance universal Internet access, and similar to healthcare, we advocate for the immediate development of universal ICT access and for its use in the development of open reasoning and a new system of education that will be the basis for emerging into a new biopolitics: social, political, economic, and physical arrangements.

We focus more on the optimistic matter of building an applied philosophical framework for eco-societies with major

“Netflix Binges and the New Tech Utopia,” *The Atlantic*, January 16, 2015, <http://www.theatlantic.com/technology/archive/2015/01/netflix-binges-and-the-new-tech-utopia/384471/>; “Mapping the Republic of Letters,” accessed April 30, 2020, <http://republicofletters.stanford.edu/casestudies/index.html>.

⁴⁵ UN General Assembly, ed., “Report of the Special Rapporteur on the Promotion and Protection of the Right to Freedom of Opinion and Expression,” n.d.; Ian Sample Science editor, “Universal Internet Access Unlikely until at Least 2050, Experts Say,” *The Guardian*, January 10, 2019, sec. Technology, <https://www.theguardian.com/technology/2019/jan/10/universal-internet-access-unlikely-until-2050-experts-say-lack-skills-investment-slow-growth>; IEEE, ed., “Universal Access to the Internet,” November 18, 2018, <https://globalpolicy.ieee.org/wp-content/uploads/2018/11/IEEE18026.pdf>. ;UN, “Measuring Digital Development: Facts and Figures 2019,” 2019, <https://www.itu.int/en/itu-d/statistics/pages/facts/default.aspx>.

⁴⁶ IEEE, “Universal Access to the Internet.”

areas of energy, economy, and environment and particularly technology grounded in global justice and meeting the basic level of human rights in UN1948. This particular view includes the Sustainable Development Goals “To achieve sustainable development, the SDGs should not merely appeal for greater efforts by governments and other powerful agents but should also call for structural reforms of the global institutional order that conditions the options and incentives of these and other agents...⁴⁷ To develop a logic, an epistemology, and an ecological ethics, and thus a full understanding of what is occurring will take great effort as interdisciplinary teams of researchers, or *convergence groups* that are less politically exposed, develop out of a general participation in open reasoning, and will be necessary to evaluate how technology enters into society. In this case, it matters how research is to be funded and how new technologies are developed, accepted or rejected, and how society interacts with technology. Therefore, we argue primarily from a philosophical perspective on the importance of access as an ethical principle for organized human societies, and a knowledge commons as a basis for dialogue, taken all within the framework of an ecological global justice. The focus on global justice, peer-production, and convergence takes into consideration the vivid, broader global dynamics to develop a more holistic view of energy, economy, and environment or *holoplex*.

Concerning science and culture, convergence as a conceptualization is used somewhat differently on the global level. In the U.S., convergence follows the MIT declaration based upon the convergence of physics, chemistry, and biology into extraordinary techniques in the manipulation of matter that could bring a transformation to materials science.⁴⁸ As a comparison, in South Korea, the term is broader in the sense

⁴⁷ Thomas Pogge and Mitu Sengupta, “The Sustainable Development Goals: A Plan for Building a Better World?,” *Journal of Global Ethics* 11, no. 1 (January 2, 2015): 56–64, <https://doi.org/10.1080/17449626.2015.1010656>.

⁴⁸ MIT News, “The Power of ‘Convergence,’” MIT News, January 4, 2011, <http://news.mit.edu/2011/convergence-0104>.

that it includes governance and culture, indicating a process of coming together on many levels maintaining differentiation as a holistic manner. The comparable transdisciplinary studies are more or less similar if it includes studies beyond the natural and computer sciences.⁴⁹ The Asian holistic form reflects what we mean by the new *technosocial reality*. Our interest is in how each view is synthesized into a workable framework for global justice in the new technosocial reality. Consequently, the mind must hold the fact of convergence as *density* in perspective at the same time with the notion of accelerated expansion outward of knowledge and technology. It is for this reason that we attempt an integral view.

As physical, ecological, geophysical, and geographical understanding is developed we will see multiples of paradigms shifting and reforming, recalling Thomas Kuhn who reported on the major shifts in the structure of science, or sociologically in science.⁵⁰ Convergence is a matter of the way society operates and interacts with technology, such as in prosumers or consumers that are also producers, and is affected by technology.⁵¹ We could participate in a networked system of education, knowledge, and manufacturing that is transformative rather than being imposed upon by a complete breakdown.

Global Justice and Biopolitical philosophy

Philosophically, if this new biopolitics is to succeed, then our conceptual framework must change in accord to both

⁴⁹ Korea Advanced Institute of Science and Technology (KAIST), Convergence Institutes: <https://www.kaist.ac.kr/en/html/research/04.html#0403>; Sungkyunkwan University Institute for Convergence: <https://icon.skku.edu/eng/icon/intro/history.do>; KAIST Transdisciplinary Institute: <http://sts.kaist.ac.kr/en/html/sub01/0101.html>.

⁵⁰ Thomas S. Kuhn, *The Structure of Scientific Revolutions: 50th Anniversary Edition* (University of Chicago Press, 2012).

⁵¹ "The Engagement Project: Connecting With Your Consumer in the Participation Age," Think with Google, accessed May 6, 2020, <https://www.thinkwithgoogle.com/consumer-insights/engagement-project-new-normal/>; Clay Shirky, *Here Comes Everybody: The Power of Organizing Without Organizations* (Penguin Press, 2008).

interpret and to guide convergence and the expansion of a new economy in order for a more sophisticated eco-social structure to emerge. In short, this structure is a shift in the demographic and geographic framework towards ecosocieties. It is at this point where we expand upon the MIT definition of convergence towards a more holistic version of the term as previously implemented on a national scale in South Korea or indicated by the concept of the holoplex. Holism must culminate in a globally just system through open reasoning on society and technology, deliberative democracy, pluralism, and activism in both the political and judicial spheres. We do not expect such change to be easy as governments, corporations, and investors will be maneuvering for the post-crisis world; for what is left of the previous abnormal that was the new normal after the Great Recession. There is optimism where the focus is on a framework from global justice for access to technology and within a fundamentally integral approach to the environment. We must act based on the best approximations of knowledge of truth and reality as we can. This understanding should not be ceded to anti-democratic systems based on dogmatic epistemic relativism. It is necessary to proceed democratically as a matter of both science and ethics to develop technology such as to maintain life, freedom, and human dignity, making use of technology. If we are to effectively meet the challenges of the new biopolitics, and the political will is in the people and good governance, then we can act to make sure that the way out of the current crisis is to reconfigure the system to a new biopolitical economy within eco-societies based on eco-humanistic and democratic values.

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