RESILIENT AUTOMATION: TOWARDS A NON-ANTHROPOCENTRIC PLANETARITY VIEW

By becoming key to cities’ functioning, essential workers allowed the rest of us to endure quarantine. In terms of commodity distribution, the assemblage between digital applications and human couriers made quarantine possible on a global scale. This model, argues this text, allows us to imagine new forms of work and relationships between people, which go beyond urbanism thought only based on consumers.

Among all questions potentially elaborated during the COVID-19 pandemic’s enforced confinement, one could have been: what was the chain of decisions that led to a planetary quarantine?¹ That is, the orchestration that put the whole of humanity under strict medical protocols, about a hundred million people in hospitals, and took more than two million to the grave.² Paraphrasing Bratton (2020), a second wave of the underlying causes that gave birth to the virus would be catastrophic, but so would another wave of misleading design approaches for addressing planetary resilience. This essay will try to speculate in that direction.

From Human Exceptionalism to Human Essentialism to Human Infrastructuralism

To be more precise, not every human being was put into confinement. Exceptions to this planetary hibernation were made for those humans deemed ‘essential’ – by state and social consensus – for having a direct and significant role in maintaining the healthcare system, supply chains, public facilities, and infrastructure.³ As
the symbiotic relationship between the dynamics to be uphold and essential humans sets an ecology of mutual caretaking, which, as a byproduct, supports the life of those excluded from the exception (i.e., non-essential humans), these can be argued to be living, animated infrastructure as well. We will name this particular type of actant as 'infrastructuralist,' whose features will be disclosed through this text. But more importantly than the residual efficiency of that symbiosis is its main product: automation. We define this concept as the rearrangement of preexistent matter, energy, and information within a relay of decisions, tending to the deliberate and designed reduction of oversight, producing by its permanent transformation, highly resilient assemblages (Bratton, 2016:245).

Although this embedding of action and decision into technical systems – such that these can be repeated without further deliberation – might appear to be creating autonomy and displacement by the apparent absence of a ‘domino pusher,’ it is, in fact, creating and rearranging ‘dependency’ regimes that include different transitive enablers, whether

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1 Sentiment Analysis, 05:20 min. Disponible en / accessible at: <https://youtu.be/rVo0r1o10E>. © Brina, Provenzano, Medvedenko, Tetekin
these are humans, machines, platforms, minerals, or simple lifeforms.

Dismissing this important subtlety would imply not understanding how technical and technological coevolution among these actants occurs throughout their history, neither how these actants’ action patterns unfold under a regime of dynamic reorganization. In that sense, the presence of infrastructuralist human labor signals the path for further automation to come, since this dynamic rearrangement takes advantage of humans’ physical and intellectual ductility, heuristic thinking, and creativity to deal with complex, uncertain, and fine-grained, unautomated labor. These virtues are powered by globalized mobility embodied in airports and preestablished flight routes, allowing the infrastructural workforce to migrate around the planet, looking for ‘fauxtomated’ (not-yet-automated) processes that require adjustment or mediation.

This whole human-machine assemblage (Deleuze & Parnet, 2007:69) offers novel approaches to unknown problems. It solidifies into specific protocols that eventually can be performed with neither oversight nor disagreement by other types of infrastructure, such as platforms, devices, or machines. The emergence of COVID-19 helped create awareness around this infrastructural ecology, as it exposed how fragile, unaccountable, opaque, and poorly automated it was. It also revealed how automated tasks that some cloud-based logistic and supply chain platforms perform are becoming an essential, planetary emergency sphere. But more relevant still has been, for architects and planners, thinking about the emergence of epidemiological urbanism and planetary infrastructural design – as well as its governance – as one of the most urgent and challenging issues that their discipline will face in the years to come in order to achieve higher levels of planetary resilience.
Ductility as the New Gold

Now, water [supply] can... or it can crash!...
Be water [a transitive enabler of material processes], my friend.
Bruce Lee, The Lost Interview
(Infrastructuralist remix)

Under current circumstances, in which generalized urban lockdown and worldwide commercial and industrial activity decrease, delivery technologies are keeping cities’ economy and their population afloat. Delivery apps and contactless micropayments proved to be more adaptable, scalable, and pervasive than brick and mortar retailers and non-social-distance-ready businesses, and their adoption by a broad spectrum of new users is what's driving its further automation. Additive manufacturing and urban hydroponics are bypassing traditional supply chains, offering decentralized and easily re-purposable support to the healthcare system and the general population, both facing essential goods scarcity. Digital, georeferenced platforms optimize their routes in real-time along an unexpected human exclusion zone: the city. AI-enabled digital inventory systems link online platforms with offline retailers, leveraging stocks, prices, and physical availability on the go. Finally, large logistics companies inverted the trend by hiring hundreds of thousands of workers to meet the demand for deliveries (Lee, 2020).

This last point is probably the most unexpected outcome of the current crisis: despite that employment in the industrial and service sector are being destroyed unprecedentedly, the most automated and digitally oriented companies in the world are profiting and employing workers as never before, keeping the world moving when neither the state nor other companies can (La Monica, 2020).
But what is no surprise is that these platform-based delivery companies, eventually, heavily rely on the ductility that human couriers – the logistical media working at the interface of the supply chain and quarantined consumers-users – provide to the quest for full and streamlined automation. The few accumulated centimeters of ‘finger work’ that a confined user requires to purchase supplies through an app, imply several kilometers of commuting, sweating, unexpected technical inconvenient solving, cartographic reading skills, calorie burning, weightlifting, and efficient time management. Unskilled labor? Think twice: this physical, functional and intellectual repurposing embodied both by platforms and infrastructuralists is evidence of their plasticity, responsibility, and, mainly, resilience.

Under emergency conditions and scarcity of goods, the previously undisputed sovereignty on product choices that consumers used to have, shifts towards platforms (sophisticated algorithms that calibrate the consumers’ experience through their interfaces) and couriers (who solve the inconsistency between expectations and available products). Pushing this argument, we can speculate that neither platforms nor suppliers are mere logistical agents but curators of matter, responsible for offering specific sets of cultural experiences available on-demand by practicing empathy as a means for sensing their clientele. Suppose we displace these agents from the role of just handling planetary metabolism at the grain of the individual, petty bourgeoisie consumerism. In that case, we can argue that their strategic exploitation of platforms and human-made mineralizations around the world (urbanization being the most complex of them), is what connects the rest of humanity with the increasingly autonomous sphere of planetary computation devices, informational networks, cosmic sensing, and chemo-energetic flows synthesized in what Peter K. Haff (2013) named as the “technosphere.”

4 Sentiment Analysis, 10:32 min. Disponible en / accessible at: <https://youtu.be/rVaTLloE>. © Brina, Provenzano, Medvedenko, Tetekin
Humans Go Home. On Retirement and Retreat

The consequences of systematic infrastructuralists’ ecophagy, channeled through planetary infrastructure and platforms, are threefold. Firstly, it is the technosphere’s main accelerator towards automated resilience. Secondly, following Srnicek and Williams’ (2015) argument about the consequences of full automation on human labor and welfare, this extensive evolutionary phase can favor human retirement. Once freed from confinement, bodies can configure the required infrastructures to perform those tasks or decisions that will eventually displace them from certain relay chains. They are then simultaneously developing the technical and technological means for increasing their productivity and profit, promoting their retirement from labor as an imperative for survival. The outcomes of this phase can be exemplified, on the one hand, by the recent implementation of a ‘quarantine basic income’ in some countries, which, however neither universal nor permanent, could be seen as the beginning of a more socially equal human retirement. And, on the other hand, the setting up of ‘lights-out’ factories, roads, airports, ports, labs, urban settlements, and other programs which could redistribute planetary material flows and their topology. But what happens when the whole city – its streets, parks, malls, squares, and practically all its facilities – becomes a human exclusion zone due to a pandemic? How does the technosphere evolve when its primary vector of automation is under quarantine?

Then, the third consequence arises. If the expansive rearrangement of matter on the Earth’s crust is the
technosphere’s evolving vector under non-emergency circumstances, then under planetary collapse and human confinement, cloud and platform-based means of production thrive by striating worldwide computation infrastructure (Bratton, 2016). Unlike the expansionist evolutive phase, this intensive phase sets up in parallel the conditions for enhanced domesticity where human retreat can actually happen. This comes to light by the massive investment that states and companies conduct to promote remote working, remote sensing and testing, persona digitization, and real-time performance accounting, all followed (or enforced) by its general adoption. Thus, parallel to intensive, deliberate protection of externalized ecosystems, augmented domesticity and intensive urbanization are more prone to be defined, configuring even more discrete and sophisticated areas for human intervention, while other areas are deterritorialized for future reconfiguration (Wilson, 2016).

Naturally, it is not that states or companies just decided one day to shut down the whole world and quarantine us for no reason at all. It is not that the technosphere agreed to do so either. Suppose one follows the three-stratum model proposed by Salthe (1958) for analyzing the structure of a system, positing humans in stratum II and the technosphere in stratum III. In that case, one realizes that none of them can have direct agency over one another. This impossibility is associated with the relative capacity for both strata to perceive and to operate each other. Humans do not have technological means sophisticated enough to fully grasp the technosphere or operate directly on it (it has an unbearable larger grain). On the other hand, the technosphere does not have a sensing layer precise enough to control us without neither negotiation nor resistance (humans have an unbearable finer grain). However, they transform each other through transitive layers like, for example, the infrastructuralists (Haff, 2014.) Consequently, the evolution of the technosphere is randomly driven by a multiplicity of cellular automata (humanity as a whole), which project unmotivated, simultaneous development lines in a necessary and unavoidable excessive fashion. This fact comes to light when a planetary emergency is stated, and vast artificially mineralized territories (cities) become unoperational, while only parts deemed ‘essential’ stay open to enable relays of subsistence. While most citizens are left idle, the infrastructuralists (which relatively correlate the most with the current required state of evolution and maintenance of the technosphere) are asked to outperform.

But for triggering these processes, something must have happened on the overlapping areas of both strata: something that could have the capacity to simultaneously migrate between them, find a suitable place to deploy, take advantage of a particular exploit in the space of possibilities, and territorialize itself for a momentary lapse of time. A third party, one capable of
unleashing this state of exception, must have emerged for this evolutionary shift. That vector is COVID-19.

The emergence and subsequent sprawl of COVID-19 couldn’t have been possible without the products of both the extensive and intensive development phases of the technosphere. On the one hand, the virus required a robust network constituted by airports, border controls, roads, train and metro stations, shipping and cruise ports. By channeling enormous volumes of products and bodies (the very vectors of COVID-19), they helped propagate the virus at a pace faster than any human self-preservation mechanism could have anticipated, prevented, or sensed. On the other hand, overcrowding within highly interconnected hubs capable

6 Sentiment Analysis, 04:39 min. Disponible en / accessible at: <https://youtu.be/rVA9TJoOEQ>. © Brina, Provenzano, Medvedenko, Tetekin

of concentrating this flow of matter increases the possibility for novel mutations to emerge. It is not by chance that COVID-19 was firstly reported in Wuhan Seafood Wholesale Market. In this place more than a hundred exotic animal species from all over the world converged for being sold, promoting a crisscrossed, accelerated genetic mutation of the virus (Huang et al., 2020). That may be the reason why New York was one of the cities that faced the most dramatic impact of this pandemic. It is the largest city in the United States, the birthplace of Koolhaasian metropolitan ‘culture of congestion’ (Koolhaas, 1994), a hybrid between a central city (cultural condenser) and a landlocked city (material condenser) under Christaller’s theory (De Landa, 1994).

Thus, what can initially be seen as a contradiction (the fact that the technosphere requires states to implement mandatory quarantines to drastically limit the spreading of COVID-19) can instead be interpreted as a ‘one-two’ cycle, as follows: the virus expands itself by using humans as vectors, who, in turn, use the technosphere to travel or commute to sustain their supply regime and mean of profit. Then comes a subsequent response of governments to control the virus by using infrastructure (human and facilities) for saving other human lives, producing health supplies, and researching on sensing, testing, and enforcing protocols – in short, by building resilience. In parallel, when companies and governments shift to remote work and digital platforms for producing value despite generalized quarantine, they build up the technosphere’s computing capacity. Finally, a more robustly meshed technosphere imbued with enhanced automated and resilient
processes emerge. But it would allow new viruses to be better suited for massive sprawl, thus restarting the cycle mentioned earlier.

Hopefully, the generalized improvement on planetary robustness driven by our current epidemiological crisis came to stay. But full automation may leave vast segments of the population in complete idleness or perform specific microtasks. Also, as these processes entail a whole rearrangement of our material framework, there are no warranties that the future of our cities wouldn’t be one of persistent and increasing strategic idleness. Here, a more ubiquitous ecology of on-demand services – whether human-based, architecture-based, or platform-based – would be capable of temporarily activating discrete urban areas, vectors, or any of its facilities.

In a way, the ductile and accurate management of activity and idleness is what digital platforms do for delivering automated resilience when it is required: delivery apps display a panoply of products, idle and at the expectancy of being consumed; streaming platforms do the same with films and series; temporary rental interfaces have a stock of uninhabited residences to be booked at any time, waiting to be so for a certain amount of time. Resilient automation heavily relies on the plasticity and responsiveness that platforms imbue onto our physical media.

However, considering the fragility of our environment and the possibility of its collapse by greenhouse gases and permanent loss of biodiversity, consumerism-oriented automation as the main sense of the existence of infrastructure (whether they be platforms, factories, humans, or forests) might have to be reframed. It is precisely that orientation that is in crisis right now, and one of its symptoms is the lack of resilience.

The current global financial and macroeconomic disaster clearly shows that certain forms of production/consumption aren’t resilient, even if they appear to be so. This is because the automated chains of relays that infrastructuralists and the technosphere fortify, use what remains from these models to fulfill urgent, necessary feedback loops for reaching generalized sustainability (for example, waste management cycles, carbon sequestration, and so on) before crossing the ecological point of no return.

In that sense, capitalism is just a historically contingent, transitive enabler for the technosphere to overcome its current dependency over detrimental modes of existence. Though the resistance to this emancipatory vector is futile, infrastructuralists show us that we can be part of this emancipation by developing a non-anthropocentric, solidarity-based model for our future retirement and retreat: the model of caretaking and the ethics of care (Hester, 2018). Indeed, infrastructuralists have automated their solidarity by relying on resilient platforms: some temporary rental apps are launching free housing programs for health workers, peer-to-peer ride-hailing
This essay is complemented by the film Resilient Automation: Sentiment Analysis (2020), made by the authors in the context of the colloquium The Revenge of the Real, organized by the Strelka Institute for Media, Architecture & Design in Moscow, and the digital medium Strelka Mag during April 2020. The film is available on: <https://youtu.be/r-_rVaTL10E>


The magnitude of the negative impact on the global economy produced by the pandemic can be identified in the unemployment and gross domestic product indicators for the year 2020 provided by the World Economic Outlook, prepared by the International Monetary Fund: <https://www.imf.org>. The collapse of the S&P Global Broad Market Index (which records the stock market activity of the main global markets) during March 2020 accounts for this economic destruction: <https://www.spglobal.com>.

Nunchi, the Korean art of listening and gauging other’s moods by interacting with them for reaching mutual harmony, can be a supreme example of this. It is not by chance that the most efficient measures on sensing, testing, and diagnosing COVID-19 have been initiated, developed, and implemented by this culture.

A “lights-out” factory (also lights-out manufacturing) refers to one that, because it is fully automated, requires no human presence, and thus is not subject to the habitability, lighting, or ventilation requirements of traditional factories.

If this situation will be accompanied by UBI, and human sovereignty over their free time, is a mystery for now.

For more information on the causes, consequences, scenarios, and initiatives in relation to climate change and the Planet Earth System, see the “Sixth Assessment Report” of the Intergovernmental Panel on Climate Change (IPCC). Accessible at: <https://www.ipcc.ch/report/sixth-assessment-report-cycle/>.

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