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FROM TECHNOLOGICAL OPTIMISM TO EXEGESIS: ELLUL, MUMFORD AND FULLER

We live in a global culture of optimism. However, the current culture, especially in the global North is based on an optimism that is not religious, but obviously quasi-religious in nature. Moreover, we live in a culture whose spirit is determined by the concepts and ideals of the Enlightenment and the imperatives of modernity. Having displaced and marginalized religious faith from public life and turned it into a matter of private choice, the ideology of modernity raised other spiritual landmarks. One of them, understandably, was the teleological concept of progress, an integral part of the modernity's project, eventually growing up inseparably with it like a Siamese twin. The rise of the ideology of progress and its transformation into an almost religious belief was fueled by various sources, among them the rapid development of technology and science, which reinforced each other even though they were not inextricably linked.

In the second half of the last century, the imperatives of both scientific and technological progress became unquestionable dogmas that determined the activities of societies, institutions and individuals. The consequences of the secularization of Western society, stimulated by the Enlightenment and consolidated by modernity, were both paradoxical and somewhat ironic. The space of religious faith was gradually dissolved and gradually occupied by new types and varieties of beliefs including the almost boundless belief in total progress, which developed in the form of geometric progression, took hold of the modern imagination. As Jose Maria Sbert has observed, the identity of a modern person was molded from the victories of progress and it rests on the belief that the individual, with the help of science, can know reality by shedding the dogmas of obscurantism. However, persistent faith in progress is very close to religious feelings. ¹ Similarly, the modern idea of economic growth acquired a religious character as well. ² Many authors remain convinced that despite certain controversies, technology solves the problems of social life, increases freedom and expands the domain of democracy.

R. B. Fuller and the Doctrine of Technological Salvation

This atmosphere partly led to the opinion that technological progress, correctly understood, could help the protagonists of the Cold War to overcome disagreements of an ideological, political and military nature. Engineer, self-taught architect, and globally renowned social visionary, R.B. Fuller was one of the most consistent and successful promoters of such ideas. However, R. B. Fuller's legacy remains controversial. On the one hand, it is obvious that some of his inventions (for e. g., the geodesic dome) were hardly original, since such a structure was created in 1919 by the German Walter Bauersfeld). On the other hand, one can reasonably wonder about his megalomania in ascribing to himself the world's most important technological discoveries. Despite insistence on human mobility *as sine qua non* of the future, the limitations and pretentiousness of the mobile home he designed (Dymaxion house) are obvious. It did not present a plausible solution for housing. Neither the World Game he modelled and preached became a global panacea for military conflicts.

Fuller, however, can be justly labelled a "technocrat par excellence" ³ and his figure represents a paradigm of thinking that exerted an enormous intellectual influence on both professional communities and society in 1960's and 1970's. His influence and popularity is evidenced by the fact that social visionary spoke at no less than 500 universities around the globe, accumulated an impressive amount (67) honorary doctorates, was elected a member of prestigious organizations (American Academy of Arts and Sciences etc.), ⁴ received the

highest awards from various organizations and institutions (AIA Gold Medal, Presidential Medal of Freedom, etc.) and was nominated for the Nobel Peace Prize.

Fuller's books were full of faith in the prospects of technology. Modern technologies, he believed, provided completely new opportunities for the progress of all mankind and overcoming systemic ideological disagreements. Moreover, they combined, as Paul and Percival Goodman observed, technical, aesthetic, and metaphysical principles in a way that seemed coherent and surprisingly logical. According to Goodmans', Fuller perceived even such a controversial phenomenon as mass machine production as a new forms of Christianity: "The obstacle to happiness is the clinging to material, especially landed property; progress consists in "ephemeralization", dematerializing, and impermanence or process of experience and control." 5

Comprehensive Designer (CD)- was both a concept and a metaphor, with the help of which Fuller defined the idea of a creator and designer of future forms of life. It was primarily a rhetorical figure that alluded to the necessity of reshaping reality and at the same viewed as the primary instrument of social transformation. CD was at the same time an architect of a new space and a new society, combining, among other things, intellectual competences separated in the era of specialization, symbolizing and implementing universally valid imperatives of thinking and action. CD's mission and social function was to provide new and advanced standards of living and working for people all over the world. 6 Moreover, this concept was based on the belief that man and his nature can be reformed by transforming his architectural and urban environment (This idea was taken over by C.A. Doxiadis, another architect-technocrat who convinced Ford Foundation that urban planning can be an instrument of implementing democracy worldwide).

However, in order to ensure that reorganization does not turn into destruction, systemic thinking was needed (e. g. theory of general systems) together with application of the principles of synergy in all human activities, because "the real wealth of life aboard our planet is a forwardly-operative, metabolic, and intellectual regenerating system." 7 Therefore Fuller based rational human activity on the planet with knowledge provided by hard science and engineering. Humans were supposed to act according the principles of particle operation discovered by these sciences. Finally, the use of systemic thinking and synergy was expected to lead to resolving (a) ideological antagonisms, (b) political and military confrontations as contradictory to the laws of evolution. Thus, true democracy is only possible if people understand the laws of nature/universe. Human being, characterized by limited physical capabilities, nevertheless was able to use intelligence and enabled humans to create technologies that "significantly expanded the capabilities of humanity."8.

Full was the first to propose to imagine the world as Spaceship Earth, i.e. i.e. a machine that can be simplistically compared to an automobile. Like any vehicle, Spaceship Earth also requires constant maintenance: refueling and replacing worn out parts. Problems persisted only because people were unable to comprehend this basically simple thus "We have not been seeing our Spaceship Earth as an integrally-designed machine which to be persistently successful must be comprehended and serviced in total." 9 Despite its suggestive rhetoric the claim is essentially mechanistic in nature and politically naive. Metaphysical dimension either disappears in this kind of reasoning or takes the form of a purely secular belief: the idea of a Supreme power in Fuller's concept is embodied by the application of the discoveries of natural science equal to the activity of God 10 and computer that surpasses any and all human powers. Accordingly, humans "can cope with the astronomical complexity of integrating the unprecedented potentials of the millions of invisible technology gains in physical capabilities already accomplished." 11 This implies that technology is viewed as a manifestation of divinity.

A renowned historian of technology and urban development, urbanist and critic of architecture Lewis Mumford's left a vast and surprisingly diverse written legacy. Although his greatest impact was on cities and architecture, he has significantly contributed to the studies of technology. 12 Unlike R.B. Fuller, Mumford was more cautious about the powers and possibilities of technology. The axis of his thinking about the development of civilization is machine "has swept over our civilization in three successive waves". 13 Mumford interpreted the history of technology, as well as the development of cities applying and modifying theoretical schemes of his mentor, Patrick Geddes, a Scottish biologist and urbanist. Following Geddes, he interpreted the development of civilization as a transition from the eotechnic to the paleotechnic and, finally, the neotechnical stage. The latter he claimed began in 1760. 14

Early, i.e. i.e. the pre-war phase of Mumford's essays is more optimistic than the later (post-war) phase. It can be explained in part by Mumford's sense that humanity has lost its sense of balance. 15 On the other hand, this attitude can also be linked to his personal life experiences. As can be seen from Mumford's late written legacy, he was completely unimpressed by the technological optimism that characterized many authors of the second half of the twentieth century. Therefore, he assessed R.B. Fuller and other authors of the 1970s and 1980s (Marshall McLuhan and Arthur Clarke) with restraint, labelling their futurological and futuro-optimistic insights as "technological mysticism". 16

On the other hand, Mumford's own position remained rather ambiguous. Jacques Ellul's analysis of technology was also unacceptable to him because of its radical character. Thus he was inclined (without any serious reason) to regard it as fatalistic. 17 Interpreting the development of technology as inevitability and important civilizing process in the course of which humanity gained more powers of expression and self-control, he also saw its darker side that he described using the category of the megamachine. Mumford further insisted that the rise of the machine was an integral part of the process of civilization and "a deliberate effort to achieve a mechanical way of life" 18 In other words, the role of the machine in society's life was positive up to a certain level. Mumford attempted to avoid the imaginary traps of fatalism and pessimism at all costs. Thus unlike some of his predecessors (Oswald Spengler et al.) he believed that the end or collapse can be reasonably avoided. This optimism is evident in his city development scheme, which, like the scheme of development of civilization, he constructed applying Geddesian eight-stage city development scheme (made of 8 staged) and modifying and reducing it to 6 stages - from eopolis to necropolis. 19 However, he argued that urban desintegration/collapse can be avoided and even reversed. 20 Therefore, although he described the potential threats of the megamachine, he remained on the side of technocratic civilization. According to Mumford, it is possible to avoid the final dead end towards which the megamachine's rise leads, because "Our mechanized civilization <...> is not an absolute. <...> Hence we do not have to renounce the machine completely and go back to handicraft in order to abolish a good deal of useless machinery and burdensome routine: we merely have to use our imagination and intelligence and social discipline in our traffic with machine itself." 21

Disagreeing significantly with Jacques Ellul about the nature, meaning and role of technics, Mumford chose to label him a fatalist. 22 Thus Mumford's views might be placed somewhere closer to Fuller's position, even though he tended to dismiss him either. Despite some ambiguities in discussing the threats of Megamachine, Mumford firmly remained on the side of techno-optimism, hardly offering anything but to continue relying on the powers of human reason, talent, and self-awareness.

Jacques Ellul's *Technological Society*, published in English in 1964 (although a decade earlier in the original language), had a paradoxical effect. On the one hand, its author fundamentally questioned the foundations of the culture of techno-optimism and presented a penetrating critique of contemporary society that fully submitted itself to unconditional loyalty to technologies often taking the form of religious worship in a culture where, according to Ellul, "Nothing belongs any longer to the realm of the gods or the supernatural".²² His translated book was widely read and commented on, on the other hand, it became the object of dissatisfaction, disapproval and constant recurrent criticism. He was accused of determinism, fatalism, pessimism and other sins, which are considered secular heresies and are not forgiven by the culture of modernity, that has submitted itself to techno-optimism, yet persistently denies the vertical (i.e. metaphysical) dimension. One should not forget that Ellul was reflecting upon technics not only as sociologist but first and foremost as a Christian thinker.²³

Ellul perceived the interaction of technology with society in a different way than many Western philosophers or sociologists of technology of the time. He rejected the widespread belief that technology is an "application of science", since this thesis was only suitable for a very limited period (19th century) and only for the physical sciences. On the other hand, in modern society, the relationship between technology and science has become more complicated.²⁴ He did not associate it exclusively with the industrial sphere. In addition, he understood technique much more broadly than one of the functions usually attributed to the machine and associated with progress. What distinguished Ellul from the views of other authors who studied technology was that he explained that technology gradually yet inevitably becomes autonomous; it obeys the logic of specialization and settles into people's lives without adequate resistance; it is closely related and promotes centralization; it is artificial and is capable of turning any non-technical activity into a technical one, and finally, it demands an urgent application.²⁵ In his later years, continuing his life-long investigations of technological domain, Ellul remained fully convinced that "technique fundamentally structures modern society".²⁶ However, does this acknowledgement immediately presupposes any inherent determinism or fatalism? Even if considered fatalist, does pessimism, implied in Ellul's description of technique make an obstacle to continue analysis of technology and its impact on contemporary societies and individuals? Or perhaps he could be viewed as devil's advocate, who presented a large number of important and persistent questions to be further discussed?

Summing Up

Summarizing this consideration, it can be concluded that boundless techno-optimism ends up being either a utopia or, after the promises of progress are exhausted, it finally takes the form of its antipode - a dystopia. Looking backwards, it can be said that R.B. Fuller was politically naive and wrong to overemphasize the power of technology as a factor capable of resolving military, ideological, and, ultimately civilizational, conflicts. Neither mobility, nor ephemeralization, nor the computer has so far presented any plausible panacea for any of these problems. Lewis Mumford was equally wrong in reducing the logic of technical and entire civilizational development to the megamachine and in believing that human imagination, intelligence and social discipline are self-antidotes to the rise of technocracy and machine civilization.

Jacques Ellul offered a more complex, multi-dimensional and meaningful perspective for understanding and interpreting the role and impact of technology on society and individuals than Fuller, Mumford and many other writers on technology. Better than most of his contemporaries, the French social thinker understood the gripping impact of technology on society, its institutions and individuals long before the aging modernity embraced the worldwide web, google, Iphone and a host of other recent digital technologies. Ellul timely foresaw and warned about the perils of technological overgrowth. Technological repletion today is reflected by exponentially increasing and heedless application of digital technologies to all and each sphere of human

activity. This perhaps irreversible tendency further enhances the ascent of managerial culture, cult of professionalism, the consolidation of technocratic class of It experts and managers and at the same time threatens many aspects of human freedom by discouraging reflections about the nature, potential and ultimate goals of technology. 27

Ellul seems to have forecasted all this, however, he did not foresee that users of the most advanced technologies would most often have neither desire nor will to deal with their progressing dependence on the domain of technique and will act as willing accomplices in further technologisation of society without any adequate reflections.

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27 Some paradoxes of current assymetry between technological growth and institutional desintegration of technological critique were recently discussed by some thinkers. See in particular my conversation with Sajay Samuel "Notes from a Technoscape", in Almantas Samalavičius, Ed. *Rethinking Modernism and the Built Environment*. Newcastle upon Tyne: Cambridge Scholars, 2017, p. 194-203.