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Cybernetics as a Balancing Act?
Architecture and the Socialist Future in 1960s Czechoslovakia

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On January 4, 1967, the cover page of a local newspaper in Prague, the capital of socialist Czechoslovakia, introduced an experimental project for what was then hailed as a »happy city«.[1] *Etarea*, as the project was called after the Latin expression *aurea aetas* ("Golden Age"), was a planned community for 135,000 inhabitants situated south of the capital city. Contracted by the State Commission for Technology [*Státní komise pro techniku*] and designed by the Prague Design Institute [*Pražský projektový ústav*] under the direction of architect Gorazd Čelechovský, the never-realized project exists today as an idea, a model conceived to carry out innovative practices in socialist architecture and urban planning. Its stated goal was that cybernetic technologies and automation should contribute to a more balanced way of life, and in so doing, help citizens regain (as the paper put it echoing the architect) »a sense of home and belonging«, otherwise lost in the rapidly transforming socialist society.

New town projects like Etarea have often been interpreted through the lens of utopian aspirations.[2] It is perhaps more useful to consider such endeavors as effects of, and efforts to wrestle with, the problems, goals, and limited possibilities of their eras – in this case, the transition from socialism to communism in Czechoslovakia. The advantage of such an approach is that it allows us to assess these projects historically while also seeing them in relation to our own contemporary digital capitalist epoch. What follows is an introduction to the design, theoretical underpinnings, and political premises of the Czechoslovak project in order to reflect on the role of cybernetic science and technology in this former socialist culture.

Designed on a slightly-curved rectangular plan spanning over 30 km2, Etarea was to comprise thirteen neighborhoods including public facilities evenly distributed across the city, with housing typologies ranging from residential towers to stepped dwellings with garden terraces and hotel-style accommodations. Much effort went into planning for a dense network of social services, including psychotherapy stations offering universal and free support (as all healthcare was in Czechoslovakia), and

1   »Šťastné město,« Večerní Praha, 4 January 1967: 1.

2   Rosemary Wakeman, *Practicing Utopia: An Intellectual History of the New Town Movement,* Chicago: University of Chicago Press 2016.

Figure 1: Etarea, model.

Gorazd Čelechovský (ed.), *Etarea. Studie
životního prostředí města*, vol. 1., Prague:
Státní komise pro techniku/ Pražský
projektový ústav 1967.

striking to strike a balance between the future city being well-connected (having its own airport and a high-speed rail connection to Prague) while still having it integrated within its bucolic surroundings of lakes and rolling hills. The large-scale original presentation model, now lost, was presented along with a massive two-volume, almost one thousand-page monograph that detailed plans and specifications for the project alongside empirical research and theoretical reflections by an interdisciplinary team of architects, engineers, and social scientists, who touched on a variety of topics from infrastructures to sociology to the environment.[3]

The influence of cybernetics on the project was twofold: as a technological network run by a computer, as well as the expression of a belief that the city is essentially itself a system that, all things being equal, tends toward equilibrium. Etarea's most sensational feature was the meticulously devised plan for an automated underground network of pneumatic delivery tubes connecting individual households to neighborhood distribution centers via a central warehouse. Groceries, along with medical supplies, mail, and various everyday items, would be available around the clock for delivery, in the same way that utilities such as water, electricity, and gas were. These operations meant that computers would be able to closely monitor reserves and evaluate optimal delivery routes, along with keeping a »systematic track of market anomalies« while simultaneously forecasting the market's »future behavior.« The role of human labor would have been limited to simply overseeing these otherwise autonomous functions. Plans for the pneumatic network were developed by engineers Miroslav Šlezinger and Ladislav Válek, who went out of their way to provide detailed specifications on the distribution infrastructure, ranging from the radius of tubes (22 cm) and standard containers (18.4 cm), to the numbers of items available for distribution (600) and households that could be serviced per hour (3,420), to the speed of a delivery (11 minutes and 30 seconds). Their schemes even included details on how to design egg trays so that eggs would not break during transport, and what shape the automated forklifts should be for operating in the central warehouse. Although more than half a century later these minutiae have an almost comical character, , they bear witness to the pragmatic nature of the project, which makes the charge of being merely »utopian« untenable.

One striking fact was the tension between the engineers' meticulous approach to thinking through every single aspect of the delivery technology and infrastructure, and their acknowledgement that they have intentionally *not* addressed the specifics of computer systems, because, according to their reports, »the speed of technological revolution instantly makes all computer technology obsolete.« This tension reveals that the original design relied on a potentially deterministic conception of technology as an autonomous force driving the process

of automation toward something universally beneficial. The architects and engineers on the project repeatedly emphasized the role of the automated delivery network in freeing citizens from the strain of everyday chores, which »steal time and energy that could be instead used for creative work.« Although the theme of individual emancipation through cybernetic technology was widespread in contemporary architectural culture in the West at the time – one prominent example being (also unrealized) Cedric Price's Fun Palace[4] – the case of Etarea opens up a wider set of social – and socialist – questions around emancipation. Who is emancipating whom? Under what conditions? To what ends?

Relative to the painstaking attention to details of the delivery network, the avowed indeterminacy of computer technology on which said network should run speaks to a different definition of cybernetics formalized in the project: not as technology per se, but as what could be called »an imaginary of balanced systems,« a belief that urban systems are analogous to natural systems in their drive toward stability. The notion of balance served as the common ground for different experts on the project. For example, a neo-Freudian psychologist suggested the possibility of a neighborhood-scale group psychotherapy, premised on the idea that neurosis is a collective phenomenon in which the anxieties of some compensates for the well-being of others, while a nutritionists noted how the automation of food processing and delivery should be complemented by options for cooking outdoors. The main architect, Čelechovský, conceived of Etarea as the fulcrum for a future in which »entire settlement systems will be controlled by a kind of central nervous system, exactly comparable to those encountered in the natural environment« – as he put in one of the few English summaries of the project tellingly titled »Systems in Balance.«[5] Ranging from specific insights into human psychology and everyday life to sweeping analogies between natural organisms and cities, these science-based imaginaries of equilibrium point to the role of scientific expertise in rethinking state socialism in the 1960s.

As we know, there is a long history of using nature-based metaphors in urbanized capitalism, running from nineteenth-century organicism to early twentieth-century social ecology through to present-day iterations of »ecological urbanism«.[6] Etarea stands for applying such metaphors to rethink the socialist city. In the prologue to the main presentation, Čelechovský touched on topics such as international relations and global uneven development, industrial society's environmental impact and psychological disturbances created by the modern urban environment, in order to present a vision for a city in which a »dialectically higher balance within the laws of nature« could be realized. This was not a yearning for some simpler world: rather, it was a project aimed at restoring and appropriating nature's homeostatic mechanisms through the use of cybernetic technolo-

4   Mary Louise Lobsinger, »Cybernetic Theory and the Architecture of Performance: Cedric Price's Fun Palace,« in: *Anxious Modernisms: Experimentation in Postwar Architectural Culture*, Sarah Williams Goldhagen/ Réjean Legault (ed.), Montreal: CCA/MIT Press, 2000, p. 119–39.

5   Gorazd Čelechovský, »Man-Made Environment: Systems in Balance,« in: *Official Architecture and Planning* 33, no. 3, 1970, p. 228–229, 229.

6   Jennifer S. Light, *The Nature of Cities: Ecological Visions and the American Urban Professions*, 1920–1960 Baltimore: Johns Hopkins University Press, 2009; Matthew Gandy, »From Urban Ecology to Ecological Urbanism: An Ambiguous Trajectory,« in: *Area* 47, no. 2, 2015, 150–154.

Figure 2: Pneumatic tube infrastructure in a typical neighborhood.

Gorazd Čelechovský (ed.), *Etarea. Studie životního prostředí města*, vol. 1., Prague: Státní komise pro techniku/ Pražský projektový ústav 1967.

gies and systems thinking.

To begin to appreciate the fuller contextual picture behind Etarea, it is necessary to understand that following the death of Joseph Stalin in 1953 and its repercussions across the entire Eastern bloc, the goal of placing the development of on a scientific footing took center stage in the larger agenda of socialist policy. For example, the 1960 Constitution of Czechoslovakia declared that the country's socialist development is on the verge of completion and the nation is »gathering strength for the transition to communism.« Central to the fulfillment of this promise was the theory of the scientific and technological revolution (STR), which impacted the Czechoslovak Communist Party in the mid-1960s, leading to a series of research commissions to investigate the current state of, and scenarios required for, rethinking socialism.

Of particular interest is the 1966 publication *Civilization at the Crossroads*: an important outcome of one of these commissions edited by the philosopher Radovan Richta.[7] Richta led an interdisciplinary team of some thirty experts including economists, sociologists, psychologists, and philosophers, along with architects, engineers, technology experts, and science administrators, to flesh out the social and cultural ramifications of the STR. The main premise was that the socialization of the means of production (land, labor) through the socialist revolution (in Czechoslovakia the communists took power after WWII, becoming the most powerful party in the parliament) removed exploitation but not alienation. In other words, labor was no longer a commodity but factory as well as domestic work were experienced as drudgery. Thus, any path to communism was predicated on removing the main causes of alienated labor in an effort to make socialism more humane. The authorship of the well-known motto »socialism with a human face,« associated with the Prague Spring, is indeed attributed to Richta, who saw the humanization of the production process as a precondition for future communism. The STR was the main catalyst for the process, relying on science to become a productive force as collective intellect, thereby overcoming the limitations of industrial socialism. If the industrial revolution introduced machines to partially replace human labor, the STR would automate the already mechanized system of production to liberate the worker from her role as an appendage for the machine (to use Marx's famous expression).

Historians have only begun to unearth Richta's now largely forgotten tour-de-force, while for example theorist McKenzie Wark has recently restored its rightful place in the history of social studies of science stretching from physicist-cum-science historian J. D. Bernal to Bruno Latour.[8] *Civilization at the Crossroads* builds on a history of intellectual exchanges spanning geopolitical divides: while the Irish-born and Cambridge-based Bernal had indeed a formative influence on Richta, the title of the publication echoes that of Soviet theorist Nicolai Bukharin's

7   Radovan Richta, *Civilizace na rozcestí. Společenské a lidské souvislosti vědeckotechnické revoluce*, Prague: Svoboda 1966. An English translation has been published as Radovan Richta, *Civilization at the Crossroads: Social and Human Implications of the Scientific and Technological Revolution*, New York: International Arts and Sciences Press 1969.

8   Vítězslav Sommer, »»Are We Still Behaving as Revolutionaries?‹: Radovan Richta, Theory of Revolution and Dilemmas of Reform Communism in Czechoslovakia,« in: *Studies in East European Thought 69*, no. 1, 2017, 93–110; McKenzie Wark, *Capital is Dead: Is This Something Worse?*, London: Verso 2019.
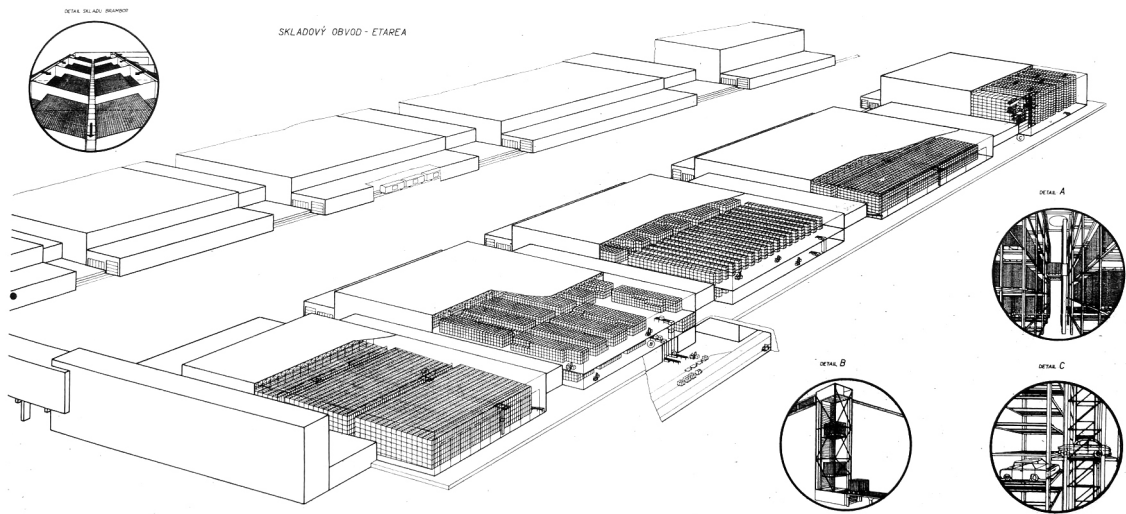
Figure 3: A typical neighborhood distribution centre.

Gorazd Čelechovský (ed.), *Etarea. Studie životního prostředí města*, vol. 1., Prague: Státní komise pro techniku/ Pražský projektový ústav 1967.

Figure 4: Section of a typical neighbourhood center, service distribution in color.

»Integration of Shopping Services: Etarea, Prague,« in: *Official Architecture and Planning 31*, no. 8, 1968, p. 1016–1029.

1931 collection *Science at the Crossroads* – which itself inspired Bernal to think science through a social and socialist lens. At the same time, the Czech philosopher drew inspiration from Western cybernetic thinkers such as Norbert Wiener to highlight the indispensable role of cybernetic technology and control as a basis for future communism. The crucial point, though, is that Richta built on various Marxian traditions to maintain that automation enabled by cybernetic systems is only emancipatory if the means of production have already been socialized. In other words, automation was seen as a necessary but not sufficient condition for the transition to communism – a prescient rebuttal of contemporary paeans to automation, from accelerationism to Amazon.

Etarea can thus be seen as an architectural expression of the STR. The project is unique for its embrace of cybernetic science and automation as a means to humanize the already socialist society. The imaginaries of a stable state underpinning the project were therefore not those of a status quo; they were premised on the belief that science and technology could – under socialism – contribute to overcoming the frictions created by industrial modernity, squaring social welfare with individual well-being without clinging to atavistic, neo-Romantic myths. To return to the opening quote, describing the model city as »happy« was something of a journalistic hyperbole, given that the project was focused more on removing alienation than on the utopian fulfillment of one's own happiness.

The project, as it was conceived, was not without its disturbing biases, from neo-Malthusian motifs and civilizationism to its overt focus on male scientists and technology workers as its primary addressees. Čelechovský, for one, stressed the urgency of moving toward a more balanced societal development by raising the fear of population growth among the uneducated poor in third-world countries, and insisted on the developed nations' civilizing mission to bring education to places where »civilization is not at home.« This perspective aligns with the architect's known penchant for cultured lifestyle (as he expressed in several essays), so that, seen cynically, Etarea might be understood as a vision for an enclave for well-educated white-collar workers rather than a contribution to redressing the limitations of industrial socialism.[9] Yet Čelechovský also reasoned that developed nations must help increase a standard of living worldwide by sacrificing *their own* economic growth and well-being, evening out global development, and would likely laugh at developmentalist notions that the poor could educate themselves out of poverty in the absence of significant redistributive measures.

Etarea is thus, like many projects, riddled with tensions that reflect our own contemporary condition. In debates around digital capitalism, there is a tendency to regard automation as the point where capitalism either

9   For example Gorazd Čelechovský, »Vzdušné zámky nebo Aetas aurea,« *Československý architekt* 10, no. 24, 1964), p. 5.
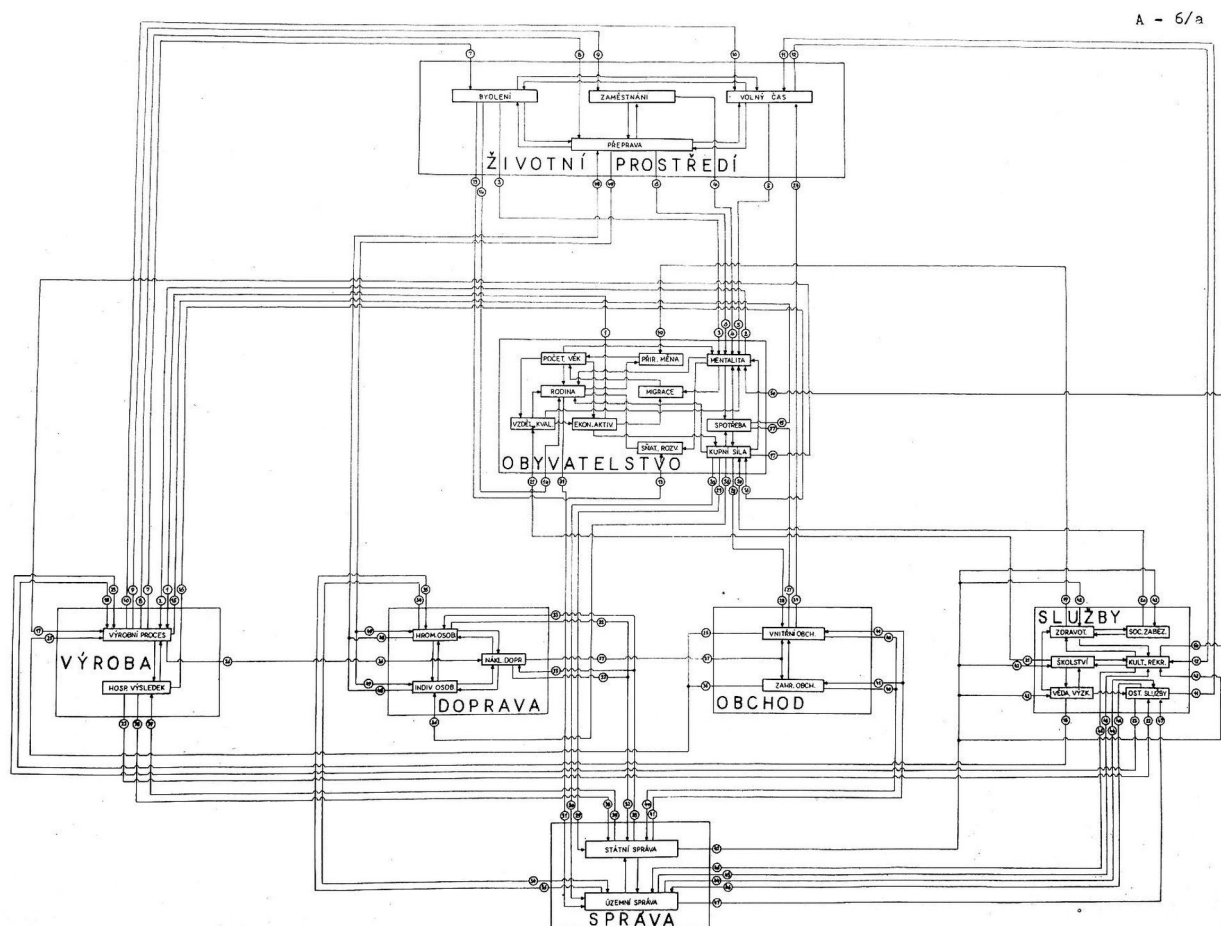
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Figure 5: A cybernetic diagram plotting relations between (from top to bottom) the environment, population, production, transport, trade, services and public policy.

Gorazd Čelechovský (ed.), *Etarea. Studie životního prostředí města*, vol. 1., Prague: Státní komise pro techniku/ Pražský projektový ústav 1967.

goes wrong (such as late-coming critic Shoshana Zuboff's theory of surveillance capitalism, which focuses more on surveillance than on capitalism), or where it breaks down (accelerationism). Etarea shows that automation is not necessarily capitalist but is not intrinsically emancipatory either. At the same time, it speaks to a belief that there is an analogy between social and natural systems and their respective dynamics, along with the desire to achieve balance in and across the environment, society, and the human psyche. These are also the project's limits: perhaps less those of scientific rationality and technocratic utopianism than that of extending the nature-based metaphor of balance to the point where it becomes politically vague. After all, any politics grounded in notions of what is natural – according to which and whose criteria we evaluate whether something is in balance with something else – risks becoming authoritarian, as it happened in post-1968 Czechoslovakia, and happens today under authoritarian neoliberalism. And yet, the case of Etarea remains instructive, if only as a reminder that Čelechovský and his colleagues espoused cybernetics with an implicit understanding that labor and land were *not* commodities.

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