

TECHNOLOGIZED SOCIETY LIQUID POWER, LIQUID EDUCATION AND LIQUID CAREERS

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Abstract

This text is a critical - but not criticizing - essay focused on issues of the impact of technologization, globalization and liquid capitalism on the world of work and education. It is divided into four separate parts. The first part (From industrialization to technologization) deals with the definition of the key categories, which are industrialization, industrial revolution and technologization. The second part (Fluidity and Power) deals with the issue of Bauman's fluid modernity and related phenomena, which are fluid capitalism, globalization and changes in area of the division of labor. The third part (Liquid Education) is an analytical insight into the impacts of wider societal changes to the values in education, educational goals and the content of education in liquid capitalism. The last (4th) part (Liquid of work and occupation, liquid careers) deals with the changes of work and career in liquid modernity. The aim of the text is to provide a reminder, among other things, that despite the great respect for technological ability, intelligence and complexity of many engineers and technologists who create advanced robots (hardware but also software), issues of morality, ethics, culture, emotions and values belong in the hands of fields other than ICT. Even this still sovereign area of humanity is influenced by the advancing technologization of our society.

Key words

technologization, industrialization, industrial revolution, knowledge society, technocracy, liquid capitalism, liquid modernity, work, digital society, informational society

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Introduction

Technology and its influence are not something new, despite what it sometimes looks like thanks to the proclamations of contemporary popular techno-messiahs. Metallurgy, mechanics, optics, the use of wind, water and geothermal energy have accompanied and changed humanity for much longer than computers and their advanced programs. But what has been happening in the last century is the massive penetration of technology into the everyday life of the individual. Gradual and almost pervasive technologization creates Freudian prostheses for people to such an extent and with such a degree of obviousness that humanity becomes more and more dependent on them, without fully realizing it (cf. Störig, 2007 p. 486). The same technologies that were and are supposed to liberate humanity often become an element of restraint and control rather than an instrument of democratization, freedom and autonomy. Modern society may have brought autonomy *de jure* to many people, but autonomy

de facto remains inaccessible to most. The use of technology is not the cause of this situation, but the facilitation of its existence (cf.: Bauman, 2020 and 2021). On the one hand, technology liberates us, but on the other hand, it creates dependencies of a completely different kind and different nature.

Despite the high degree of globalization influences, which enable the rapid transfer of technology and information to almost all parts of our world, it is not yet possible to speak of a global unity of development associated with industrialization. From the point of view of social science research activities, this can be quite a useful situation, because there are different communities at different stages of industrialization at the same time. It is thus possible to research the effects of industrialization and technology in an environment of almost natural experimentation. Of course, it is important to take into account that these societies are not completely isolated

and can be influence at least informationally, however, with a suitable choice of indicators, the observed research results can be compared, and scientifically significant conclusions can be drawn from the results of comparisons. After all, this is one of the reasons why various sciences (eg: sociology, economics, history, ecology, medicine, psychology, cultural anthropology, political sciences, technical sciences and educational sciences) deal with the phenomenon of industrialization and technology relatively intensively. However, it would be rash to say that science deals with the phenomenon of industrialization mainly for a purposeful reason in the form of the availability of information resources and the "social attractiveness" of the topic. One of the important reasons for the interest in the given phenomenon and the effects of its operation is its undeniable influence on the world of work, and thus also on education (at least in the field of professionalization), its values, goals and content. With the change of means of production, the nature of work and its organization also changes, and all this is naturally responsible for the changes in society (compare: Bauman, 2021; Becker, 2013; European Commission, 2020; Ivanová & Staněk, 2016; Ivanová, Masárová & Koišová, 2019; Kořen, 2020; OECD, 2018; Schwab, 2016; Spitzer, 2012).

It is questionable if terms such as Industry 4.0, the Digital Industry or the Digital Society are the cause or consequence of the pressure of postmodernity on the field of work or vice versa. However, one thing can be said with certainty: technologies have made it possible and still make it possible to materialize and create reality of humanity's happy dreams and nightmares much more than we might want to admit. This is not a reason to refuse, but to be vigilant and cautious in assessing the benefits and potential risks.

FROM INDUSTRIALIZATION TO TECHNOLOGIZATION

Without ignoring the determining importance of industrialization for development and changes in area of work, working conditions and the working environment, it is necessary to consider not only industrialization itself, but also its fundamental side-effect phenomenon, or

perhaps even another stage of evolution, which is *the technologization of society*.

The technologization of society means the degree and extent of advanced use of technologies (robotics, digitization, automation, artificial intelligence, ICT, etc.) in the everyday reality of social and private life. Just as we can talk about highly and minimally industrialized societies, we can also talk about societies that are highly and minimally technologized. And thus, just as we can talk about industrialized societies in the intentions of different stages of industrialization (basic, advanced, high), they can be also categorized according to the levels of their technologization. The boundaries between the considered stages do not have completely sharp contours, because even within single societies, different semi-stages can naturally coexist. However, the purpose of thinking in given categories is not separation, but delimitation through typical (typological) dominant characteristics. We can use the related terms - the first, second, third or fourth *industrial revolution* - similarly. Many authors who focus on industrialization also use the *terms Industry 1.0, 2.0, 3.0 and 4.0* analogically with these revolutions (compare: Becker, 2013; Ford, 2015; Frey & Osborne, 2017; Hecklau, Galeitzke, Flachs, & Kohl, 2016; Ivanová & Staněk, 2016; Kamensky, 2017; Mařík & al., 2016; Reich, 2002; Schwab, 2016; Staněk & Ivanová, 2017; Tupa & Benešová, 2017). It can be said (in general) that more than a revolution, it is a gradual evolution and the milestones mentioned (1.0 - steam engine, 2.0 - electricity, 3.0 - automation, 4.0 - artificial intelligence) tend to point to the main technological discoveries and applications of technologies that have had and continue to have a significant influence on production, the division of labor, education and individual life than on moments of revolt and the tearing-down of the old social order. Technologies that surpass a person's physical or volitional cognitive abilities (It is important to separate "volitional cognitive abilities" from general cognitive abilities. The volitional behavior (controlled by the will) is the ability and skill to consciously and deliberately mobilize certain activities (cognition is primarily about thinking and memory). Volitional cognitive abilities are accessible to our perception and knowledge through awareness.

Therefore, their speed, scope and quality can be relatively easily compared with the scope and quality of operations performed, for example, by computer technology. For the time being, we can only compare those parts of cognitive abilities that are not accessible to our consciousness and often also to our cognition only to a very limited extent and, moreover, often only significantly indirectly.) have always had and still have a major impact on the transformation of society. What has been crucial in the last century is the massive penetration of technology into everyday life. This gradual and pervasive technologization creates *Freudian prostheses* for people to such an extent and with such a degree of obviousness that humanity becomes more and more dependent on them, without being fully aware of it. This may be more enjoyable and definitely easier. There is a certain resemblance to Spitzer's comparison of *the smartphone to the Swiss knife* of the 21st century. Professor Manfred Spitzer, in his well-known monograph "*Digitale Demenz: Wie wir uns und unsere Kinder um den Verstand bringen*", published in Munich as early as 2012, says that someone who becomes addicted to a Swiss knife and then loses the knife, suddenly loses access to all the tools it contained (knife, saw, bottle-opener, file, scissors, screwdriver, pliers...). That person may then be severely paralyzed in many areas of their practical life because they do not have or cannot (any longer) master other tools. It is the same for someone who uses a smartphone connected to a global network to handle a significant number of their practical tasks (finding and obtaining information, opinions, recommendations, decisions, orientation, navigation, mathematics, translation, interpreting, recording). That person has unlearned other possibilities, or even has not learned them, so is dependent on the existence and functionality of the smartphone. If they lose their functional smartphone, they have no information, no access to money, no access to contacts. They do not have an "electronic" advisor to handle for them such trivialities as recommendations about going for walks, making purchases or shopping lists to top up the fridge, etc. They have no way to connect with friends who are equally dependent on smartphones, and with institutions that should automatically help in other circumstances. Even worse, they don't remember what number to call if they need to borrow someone else's phone because all their

numbers and contacts remain stored in the lost, stolen or broken device (Spitzer, 2012). Professor Spitzer's specialization (neurology) has enabled him to show that the use of digital technologies affects cognitive abilities and limits the formation and functioning of brain synapses, which are responsible for spatial orientation, for example. On the one hand, technology liberates us, but on the other hand, it creates dependencies of a completely different kind and different nature.

The level of technologization of society can be evaluated in three dimensions (indicators). The first dimension is the level of technology advancement used in the society. The indicator of level of the technologies used can be assessed by comparing the level of technologies used with the highest level of existing technologies. The second dimension is the level of their use (spread) among individual social actors across the society. The extent of use should be assessed not only through the availability of technologies, but also through their real usability (not all available technologies are usable in certain contexts, not all usable technologies are available). The third dimension is the level of influence on technologies (development, control of their use). The level of influence on technologies can be assessed through what active realization potential society has for their development (does society develop technologies or even create them?) and by the level of control of their development and use by society (does society have influence on their development and use?).

Because the extent of technologization of individual societies is naturally not at the same (often not even similar) level, their participation in the benefits of technologies is naturally different. Advancement in technology – paradoxically – can (and often does) bring significantly greater scope for growth of social inequality than in the pre-industrial period. The richest and most influential people have long been not monarchs, landlords, owners of mines or factories, but those who control technologies (compare: Bauman, 2020; Bauman, 2021; European Commission, 2020; Ford, 2015; Kamensky, 2017; OECD, 2018; Reich 2002; Shwab, 2016). Technologies allow modern powerful man not only to invest, mine and capitalize effectively, but also to influence public

opinion in order to favor their own intentions, or at least not to be able to defend against them effectively.

FLUIDITY AND POWER

According to *the theory of structural transformation* – formulated and developed by Jean Fourastié, one of the most influential European economists of the 20th century - technology and the gradual technologization of work and social space have a major impact on the transformation of the division of labor, economic activity and success, and thus society. Society as a whole is fundamentally determined by the division of labor, therefore it is also determined by technologies (Fourastié, 1952).

According to Fourastié and his followers, social evolution is mainly influenced by the ratio of the distribution of activities in single societies among three economic sectors: primary (resourcing), secondary (transformation of sources) and tertiary (services). Fourastié (1952) considered that societies with a predominance of primary sector activities are traditional ones which are essentially doomed to depend on those who can transform the raw materials they obtain into products intended for consumption. Although these societies have raw material resources, they lack the potential to process them and thus to create higher added value. For others, they are only as important as their raw materials are. From an economic point of view, these societies are at the lowest level of “the food chain” on the market. If their raw materials are not valuable enough, only the market determines their prosperity. If they have high value, their prosperity is determined by the will of those who are powerful, more capable and faster, who determine whether they will be able to sell their resources independently or under the supervision of “benevolent” more technologically savvy investors. However, neither society is an independent society, even though many might argue that resource ownership is in their favor. More technologically advanced societies can relatively effectively force them (for better or worse) into obeisance as a humiliated supplier.

Fourastié considers that societies with a balanced ratio of activities between the first sector (resourcing) and the second sector

(transformation of resources) but with a minority representation of the third sector (services) are societies in a transitional stage. These societies are able to obtain and transform resources (raw materials). Therefore, they are not as dependent as traditional societies (which they often exploit). The only thing that limits them is their ability to sell, innovate, develop or even invent products. These functions are provided by the third - the service - sector.

The highest stage of Fourastié’s social transformation is achieved by societies that carry out the maximum of their economic activities through the tertiary sector (services). These societies basically take advantage of societies in the traditional and transitional stage to ensure their own well-being. They do not mine, do not grow, do not produce physical products. There are focused primarily on high value-added services (trade, administration, research, technological development, education, intellectual services). Thanks to this, they can bring their members high social status and well-being. Thanks to surpluses generated by higher added value, they are able to invest significantly in their own development and also effectively create reserves for periods of crisis, which are often a complete disaster for first- and second-stage societies.

Fourastié and his followers thus laid one of the cornerstones of techno-optimism with their unusually precise analysis and prediction of future development. He optimistically believed in progress associated with the gradual transformation that technology development would allow. In addition, many adherents of his ideas make arguments in the form of sustainability, cultural development, and environmental protection. However, the truth of these arguments on a global scale is apparent. Many opponents of such progress will think that it is the progress of the select few, which is based on the exploitation of the less able, the less rapid, the others, the unknown.

"The fact that certain forms of industrial production are no longer visible does not mean that they do not exist, they have only been relocated. The blast furnaces of steel mills, and the chimneys of the petrochemical industry are burning and smoking as before, but in other

parts of the world where it is cheaper (Liessmann, 2009, p. 29). "

As Bauman (2020) says, in *the era of liquid capitalism*, the existence of which is largely conditioned by the technologization of the world, social actors can be divided into four main groups. First, they are modern (investment) *conquistadors* who, thanks to their ability to quickly transfer the financial capital, technologies and management structures of their companies, can quickly occupy territories suitable for their investment plans. Secondly, they are the physically or digitally mobile labor force (*nomads*), which more or less successfully complements labor resources that are not easily, cheaply or at all available in the territories occupied by the *conquistadors*. Third, modern (social) *serfs* who do not have the social, investment, or skill capital to be *nomads*. And finally, fourthly, *the administrators of the conquered and conquered lands* who seek to attract and retain *conquistadors* on their territory in order to obtain the means for them and the *serfs* present to become *conquistadors*, *nomads* themselves, or at least temporarily better (Bauman, 2020, 2021).

As was previously said, the level of technologization of society can be evaluated in three dimensions (indicators). The first dimension is the level of technology advancement used in the society. The second dimension is the level of their use (spread) among individual social actors across the society. The third dimension is the level of influence on technologies (development, control of their use). The mutual combination of these categories / indicators is key for defining and assessing the degree of technologization of societies. Societies in which advanced technologies are used only by a limited number of members operate differently from companies in which technologies are widely used. Societies that effectively influence technologies, or are able to develop them, or have their development and use under control, are likely to be different from societies that are not.

In a world for which the level and control of technologization is a key added value, the dominant societies are those that make extensive use of advanced technologies across the social space and have a significant impact on their

development and use control. Fourastié would probably say that they are at the highest stage of social transformation. In the technological world, such societies are the controlling societies. Their advantage is the possibility of using even those resources that they do not necessarily have directly at their disposal (raw materials, space, energy, food, production capacities), through rapid global investment. They are able to do this because of the technology and their dominance in its use. This is a key condition for success in the environment of *liquid capitalism*, in which the ability to quickly relocate investments and extract local resources without material ties to the territory in similar physical assets is essential. Those who can quickly analyze the potential of available resources and acquire them almost immediately are the winners (Bauman, 2020).

What may have surpassed Fourastié's brilliant reasoning and undoubtedly well thought-out predictions is the power that technology has placed in the hands of narrow groups of those who control them and can therefore control their use. The technologization of the world has enabled the emergence of new elites, whose greatest strength lies in their technology-facilitated ability to invest quickly and anywhere, in addition to changing public and thus political interests through effective lobbying.

At the opposite end are societies that do not control the management and development of technologies (or do so only minimally) and, if any of their members use them at all, these technologies are only low- or not very high-level. From the point of view of technologization stages, these are actually pre-technological societies. They are societies that have the characteristics of Fourastié's traditional societies. Such a society can only gain influence if current global resources are exhausted (or severely limited) and *conquistadors* or *administrators* with a high level of resource control would find it worthwhile to invest in transforming such societies into more technologically advanced societies (for example, certain countries whose economy is entirely based on the possession and extraction of oil).

However, it may be useful to remember that this is a description of the ideal types. The

existence of societies of the first variant (wide use of advanced technologies with a high degree of their control) or the second variant (minimum level of technologies, their use and their control) in a completely pure form is not entirely realistic. These variants can occur in various narrower social groups or communities, but modern, complex societies are often diversified and therefore heterogeneous. Their members use different levels of technology at different levels and have them under control at different levels. There are both groups of those who use and control technology and groups of those who do not use or control technology for various reasons. In such an environment it is easy to form close, privileged groups of controllers who often have the highest level of technology at their disposal in addition to control the whole society.

Evgeny Kamensky, in his relatively complex analytical reflection "*Society. Personality. Technologies: Social Paradoxes of Industry 4.0*", states that technocracy is becoming a decisive force in a technology-obsessed world. It has a huge influence, which comes from the ownership or at least control of technology and from its own ability to create social pressure (sometimes even ideological) for the need for technology, and all under the proclamation of the need for progress, further prosperity, economic necessity and the need to succeed in comparison with others (Kamensky, 2017).

"Pointing out the economic pressure to which everything is exposed has the advantage that almost no one dares to question these constantly repeated mantras. Competitiveness and job security always gain the upper hand. This market apotheosis, without it being understood as such, is firmly rooted in the Marxist theory of capitalism, or it is based on the fact that the economy is superior to all other spheres of life, that everything follows the unchanging laws of the market and in the end the only winners will be those who don't ask too many questions, submit to the Zeitgeist and strike while the iron is hot (Liessmann, 2009, p. 117-118)."

Bauman's *conquistadors* are the determining force in such a world. Dominance in influencing technologies allows them to put

direct and indirect pressure on *administrators*, who, if they succumb to it, create scope for easy exploitation of local resources (including human resources) and, in part, outlets for technologies that are often no longer used elsewhere (if you want to expand the use of technology, outdated technology is better than no technology). All this is happening in the name of the mantra of progress, welfare development and increasing independence and opportunities for emancipation through economic growth and competitiveness.

Nation states are gradually realizing the risks of possible negative impacts of gradual technologization of the world and increasing spatial flexibility of investments on individuals and societies. However, it is precisely at a time of global investment that the bargaining power of the small is becoming increasingly inadequate. Despite frequent criticism of various federal or union groupings, the fact that a strong federation or union has a much greater influence on global capital decisions than the naively autonomous economy of a small "free" state cannot be overlooked. The regulatory tendencies of the "big" ones are quite obvious. Unfortunately, their success and foresight are also limited.

"While technologies and artificial intelligence can do much good, including by making products and processes safer, it can also do harm. This harm might be both material (safety and health of individuals, including loss of life, damage to property) and immaterial (loss of privacy, limitations to the right of freedom of expression, human dignity, discrimination for instance in access to employment), and can relate to a wide variety of risks. A regulatory framework should concentrate on how to minimise the various risks of potential harm, in particular the most significant ones (European Commission, 2020, p. 10)."

However, it would be foolish to ignore the fact that various associations of states, including the strong ones, may cave in to the pressure (overt and covert) of investment capital. If investors' interests turn into the dominant political ideology of the superstate (union, federation), then its small members often have even less chance of defending themselves against this pressure than if they were

independent of the superstate. The pressure of investors is added to the pressure of the ruling administrators in the form of subsidies, restrictions, or legislative constraints. One example is the transformation of formal education content targeting, which is more and more dictated by central super-authorities (compare: Bauman, 2020, 2021; Ivanová & Staněk, 2016; Kamensky 2017; Liessmann, 2009).

LIQUID EDUCATION

Education in every era, including the technologized era, fulfills (intentionally and unintentionally) several social functions. These are mainly socialization, acculturation, enculturation, personalization and professionalization (compare: Brezinka, 1992; Hecklau, Galeitzke, Flachs, & Kohl, 2016; Illeris, 2009; Jarvis, 2007; Kořen, 2020). Education, as a practice-oriented discipline, is often in practice influenced by cultural and political paradigms. What, how and why it is used is more determined by social or political tasks and by world-view positions than by educational sciences (Brezinka, 1992). Technology and technologization and the influence of liquid capitalism enabled by them, or at least significantly facilitated by them, also influence the requirements for the goals and content of formal and non-formal education. In the world of liquid certainties, which are mainly influenced by the interests of *conquistadors*, the need for professionalization, i.e. preparing people to work, is often strongly emphasized. This is reflected, among other things, in the strong orientation of educational policy to meet the requirements for qualifications to perform the required occupations and work-related competencies. Qualifications can be understood and considered to be "objective" qualities to some extent, but competences are inherent in that they include personal and collective motivations, emotions and commitment, and their practical value depends to a large extent on the positive interest and attitude of society (Illeris, 2008).

"Most authors identify four main categories to classify competencies. Firstly, technical competencies comprise all job-related

knowledge and skills, whereas secondly, methodological competencies include all skills and abilities for general problem solving and decision making. Thirdly, social competencies encompass all skills and abilities as well as the attitude to cooperate and communicate with others. Finally, personal competencies include an individual's social values, motivations, and attitudes (Hecklau, Galeitzke, Flachs, & Kohl, 2016, p. 3)."

In fact, all the categories of competencies listed in the previous citation can be used to look at competencies for *liquid modernity*. Although it might seem that methodological competences, social competences and personal competences do not necessarily have anything to do with the world of work, the opposite is true. Methodological competences represent strategies for solving problems, which, however, very often have clearly defined and world-determined means, procedures and goals. If the set goal, essentially a political imperative, is technology development, digitization and decision-making through AI algorithms, methodological competencies must also be adapted to them. It is the same with social competencies. Learning usually includes three dimensions: cognitive (knowledge), emotional (feelings and motivation) and social (communication and cooperation). All are rooted in a socially situated context. Therefore, in addition to the psychological process of processing and acquiring knowledge and skills, a key factor in learning and education is the interaction between the learner and their social, cultural and material environment (Illeris, 2004a, 2004b, 2007, 2015). Personal competences are often only a necessary precondition for coping with the effects of a situation in which an individual finds himself, without the possibility of really influencing it (Bauman, 2020, 2021). Thus, education is always influenced by context. The implications of the context of liquid modernity are obvious.

"It is more appropriate to talk about a time when the subordination of knowledge to the parameters of the capitalist economy is finally coming to an end, which is knowledge friendly only if knowledge can be immediately appreciated or at least does not increase costs. Under these conditions, knowledge as such is deprived of its autonomy. Despite all the affirmation for the notion of education, the good

that used to be called education has little, if nothing, to do with knowledge in a knowledge society." (Liessmann, 2009, p. 36). "

There are also several legitimate objections to Liessmann's relatively radical stance. The massification of high school, college, and university graduates, which Liessmann sees as one of the causes of spreading "uneducation," on the one hand causes some "dilution" of quality, but also allows for a gradual, albeit still insufficient, yet increasing cultivation of the whole. However, it is true that in the ballast of quantity, there can be a deliberate, unintentional and sometimes even purposeful ignoring of the various goals of education. Liquid capitalism and its need for technology are probably the most important part of decisions about the content and forms of education. The content of education is often focused only on professionalization. Forms of education are evaluated according to the speed of transmission more than according to its quality. Goals in the field of cultivation, personalization and emancipation of the person tend to be relegated to the sidelines with reference to their immeasurability, ambiguity and impracticality. At best, this condition is caused by the ignorance or at least the short-sightedness of the decision-makers; at worst it is a calculated intention.

"It is striking that today the prevailing metaphors of educational policy demonstratively question the very goals that once motivated the conventional narrative on education - the autonomy of the subject, the sovereignty of the individual, the autonomy of the individual. Above all, do not think with your own head - as if this was the secret program of today's education. Anyone who is not willing to act as a team and in networks and flexibly adapt to everything that is required - by the way people do not require anything, it is always just the market, globalization or a straight future - no longer has a chance to meet the demands of the knowledge society... If someone is constantly preaching about networking without realizing that he is putting so much pressure on conformity, he is probably listening to the dictates of the times, and not to any even half-sovereign reasoning of his own (Liessmann, 2009, p. 50). "

The technologization of society necessarily permeates the area of promoted and supported content and forms of education. Following the needs of digitization and advanced automation associated with the advent of autonomous decision-making systems of so-called artificial intelligence (AI), different projects for identification and development of knowledge and skills, which are collectively referred to as Competence 4.0, are now created and generously subsidized from public funds. The need to include them in the official education curricula is considered crucial. This is evidenced, for example, by the European Union project *"Mapping future competencies as part of systemic measures to define labor market requirements (Competence 4.0)"*. Its publicly declared goal is to support the adaptation of labor market institutions to the changes resulting from the 4th Industrial Revolution through early identification of future competencies and support cooperation between companies and schools to ensure mutual complementarity in relation to labor market needs (MPSV, 2021). Other projects on a similar topic are, for example: *Development of a system of further education of employees and employers in the field of digital competences* or *Development of system support for digital literacy* (MPSV, 2021). The primary mission of education from the point of view of these and similar programs is pure professionalization and, in some cases, even only the transmission of instrumental skills for work.

"It is not about education, it is only about knowledge that can be produced, traded, bought, managed and discarded as a raw material because, apart from special programs for new elites, it is a superficial patchwork of knowledge that is just enough to make people flexible for the work process and available to the entertainment industry (Liessmann, 2009, p. 39). "

However, it would be unfair to mention these programs as an example of only negative action. These projects respond to the fact that if separate economies would like to succeed in a world of liquid investment, they must be equipped with the necessary level of human capital. However, it is an effort driven by need, not a need driven by interest and free will.

There is no doubt that one of the key tasks of education is to prepare individuals to

take up an occupation. Nevertheless, it is important to recall that the role of educational institutions is not only to reproduce and transmit existing knowledge to other generations, but also to co-create or at least bring about suitable conditions for creating new knowledge. However, education when reduced to creating instrumental skills is not adequate for this purpose (Ellström, 2005). In addition to the most frequently exalted professionalization, the role of education is also socialization, humanization, personalization, managing the ethical aspects of life in society, developing exploratory curiosity and learning to be human in all aspects of what humanity means (Jarvis, 2007). Unfortunately, these aspects are often sidelined on the grounds that "we do not need more theorists, but people on the job". The question is whether such statements are the result of the predominance of theoretical knowledge or, conversely, a manifestation of its deficit.

"In a rapidly changing world, in which the qualifications, competencies and content of knowledge are said to be constantly changing, "uneducation", i.e. the abandonment of binding spiritual values and conventional education, has become a virtue that allows individuals to respond quickly, flexibly and without "educational ballast" to ever-changing market demands (Liessmann, 2009, p. 51)."

The paradox is that in addition to technology-obsessed education, there is also huge scope for ballast in the form of trendy education, which focus on human rights issues, multiculturalism and environmentalism. However, even here, there are often significant problems caused by the fluidity of topics, the shallowness of content and the calculated lobbying hidden behind social orders. The absence of clear, widely recognized or at least accepted - and therefore undisputed - goals means that efforts and energy are fragmented.

"Education was once associated with the ambition to prove that the supposed certainties of the time are illusory. A society that, in the name of supposed efficiency and dazzled by the idea that everything can be subject to economic scrutiny, is cutting back on freedom of thought, depriving itself of the opportunity to recognize illusions as illusions, has subscribed to uneducation, no matter how much information is

stored in its digital databanks (Liessmann, 2009, p. 119)."

Paradoxically, the original idea of mutual enrichment through openness to many starting points and paradigms contributes to shallowness or useless confusion rather than to building a better quality of society. Individualization throws us from the bondage of certainty to the bondage of uncertainty.

"In the absence of a Supreme Governing Office (or rather, there are many authorities vying for sovereignty, none of which have even a 50% chance of victory), the question of goals arises again and necessarily causes endless agony and hesitation, removes determination and is a source of a depressing feeling of utter insecurity, and thus of a state of constant anxiety (Bauman, 2020, pages 82-83)."

But this is by no means some kind of yearning for "the good old days", and it would be a mistake to talk about a desire to revise the original basis of the need for freedom. It is a critical insight into the supposed means of liberation. Even total individualization and absolute respect for otherness do not in themselves bring freedom. They only throw us out of one net of certainty about our required direction of travel and set of beliefs into a different net of uncertainties arising from the knowledge that it is difficult to orient ourselves within ourselves and in terms of our own values, let alone within the world around us. Instead of sharing ideals, we share the records of our own individuality (Bauman, 2020, 2021). Our decision on our direction of travel is perhaps even more unfree than it was a hundred years ago. The main lack of freedom does not lie in some external prohibition or command, but in the fact that we become prisoners of misinformation about what is and what is not, or what should and what should not be. The world is then filled with apparent saviors, who, however, often promote the values of other better-hidden doctrines in the name of liberating truths. The worst thing is that such doctrines are almost always hidden even in the unconscious of their own preachers.

"In the whole field of education, it is clear that instead of a knowledge society, we are moving towards a society of control at great speed, and almost everything that has been

discussed recently under the heading of 'autonomy' is governed by the imperative of a social structure based on self-control (Liessmann, 2009, p. 118)."

Education is becoming a market commodity in the technological world. However, in many cases it is mainly education that should bring the ability to create and develop other technologies (ideal for *digital nomads*) and in the worst case only instrumental skills to operate technological equipment (compare: Bauman, 2020; Ford, 2015; Kamensky, 2017; Liessmann, 2009). The real focus on ethical and social aspects of technology can only sporadically be found in the scope of so-called education 4.0. Is this a manifestation of the uneducation of education policy makers, or is it the elaborate lobbying of those for whom a broader social debate on the issues of technological impact would not fit in with their investment plan?

"The policy that should regulate the market is itself becoming a playground for lobbyists, parliamentary control is weakened, the responsibility of democratically elected institutions is shifting to 'independent' councils and boards. Public discourse is replaced by rankings compiled by evaluation agencies, and while some still dream about civil society, democracy is reduced to an electoral theater that is media-formatted exactly following the pattern of various TV spectacles (Liessmann, 2009, p. 117)."

Liessmann does not explicitly mention technological progress and the physical penetration of technology into everyday life as the cause of this. Nevertheless, the hints at the problem of technologization of the spirit, education and morality in his work cannot be overlooked.

Technologization is transforming the world so dynamically that if someone wants to succeed, they must adapt their behavior to the dictates of the need for lifelong education. On the one hand, there is the need for a universal, flexible, ever-learning worker of the new age, and on the other, the individual's interest in security of living conditions, freedom of action and the right to self-determination. The original idea of education as a means of emancipation rather becomes the need for an ideology of the need for adaptation.

LIQUID WORK AND OCCUPATION, LIQUID CAREERS

With the change of means of production, the nature of work and its organization also changes, and all this is naturally responsible for the changes in society. (compare for example: Bauman, 2021; Becker, 2013; European Commission, 2020; Ivanová & Staněk, 2016; Ivanová, Masárová, & Koišová, 2019; Kořen, 2020; OECD, 2018; Schwab, 2016; Spitzer, 2012). The dynamic development of technologies also has a fundamental influence on the dynamization of development in society. The results of a number of surveys (OECD, EU, G15) show that this development has an impact on the labour market, the structure of skills needs and the growing importance of new types of responsibilities and qualifications and competencies (Kořen, 2019).

The development of technology enables fast communication, travel, but also migration of investment capital. In line with Zygmunt Bauman (2020), advanced technology has significantly supported a new kind of "light" capitalism that is no longer dependent on the place where production and material resources are allocated, as was the case in traditional "heavy" capitalism often linked with Frederick Taylor or Henry Ford. The originally desirable model of closely linking the human-employee life story with a production organization that is firmly allocated and built to "stay here forever" is being replaced over time by a completely different model. In *liquid modernity* and its accompanying (or integral) phenomenon of "light" capitalism, the dependence of capital on local conditions (source, legal, political, economic) has decreased so much that the need for long-term loyalty has been displaced by short-term loyalty in the spirit of "Your personal story is connected to mine only until I find out where someone else is, more convenient for me." This applies both to employers and to the countries in which such "liquid employers" operate, and this also applies to their workforce (Bauman, 2020). The only difference between these strategies and the gold diggers' strategies is that the "deposits" ripe for investment are far more accessible and variable over time than there have been and are for real mineral deposits. Extraction and relocation are much easier, and

the delineation of mining space has long been determined not by any local authority but by a market in which the key factor for success is not so much "having the right idea" and hard work, but investment strength and speed of response.

The effects of all-pervading technologization can also be traced in the area of individual work. It is probably not necessary to engage in relatively redundant debate as to whether the primary cause of the advent of technologization was the development (and associated requirements) of society, or whether it was vice versa. The development of society is undoubtedly closely linked to the activities carried out in it, including the world of work. All variables in a complex system are in complex interaction with each other, and therefore they can act as influences and set conditions, and in fact they often do. Thus, work is influenced by the possibilities and needs of technologization and, *vice versa*, technologization by the needs and possibilities of work. This comes with both benefits and risks.

"Technological innovations such as automation and digitalisation drive productivity growth, increase revenues, generate new jobs and thus can contribute to better living standards. But will this new future of work bridge or increase divides among people? Which workers will be replaced by robots and artificial intelligence? How can workers adapt and take advantage of technology? And, how will these changes occur in different places? (OECD, 2018, p. 19) "

In addition, Bauman (2020) adds that while in the modern era the need for loyalty to the organization has displaced loyalty to the land and the feudal lord, in the postmodern "liquid" era, loyalty to organizations is displaced by primary loyalty to one's profession. This is related both to the deepening diversification of occupations - the accompanying phenomenon of advanced specialization is a situation where people are more loyal to their profession than to the employer (Šimek, 1996) - and to the dynamic instability and uncertainty of organizations. If organizations do not change dynamically enough, they disappear. In that case they are unstable. Nowadays, loyalty to the profession is much more pragmatic than loyalty to the employer.

"Robert Reich argues that economically active people can be divided into about four broad categories. The first is "symbol manipulators", people who come up with ideas and ways to make them desirable and marketable. Those involved in (re)production of workforce (educators or various welfare state officials) fall into the second category. The third category includes people employed in the field of "personal services" requiring direct contact with consumers. The greater part of this category consists of product sellers and manufacturers of desire for various products. The last, fourth category includes the people who formed the "social substrate" of the workers' movement throughout the 20th century and the middle of the 19th century. They are, as Reich says, "routine day laborers" attached to an assembly line or (in a more updated version) to computer networks and automatically operating devices as their supervision. They have few special qualities that would inspire their employers to try to keep them at all costs. They have only negligible, if any, bargaining power. They know that they are actually single-use, so bonding and being true to their job is of little importance to them, as is maintaining lasting relationships with co-workers (Reich, 1991; IN: Bauman, 2020, pp.204-205). "It is a natural response to the 'flexibility' of the labor market, which, translated into the experience of individual life, means that long-term security is the last thing that can be associated with the job one is currently pursuing (Bauman, 2020, p.205)."

It is also true that time dynamizes the variability of the content of the work of individual professions as well, but their primary mission does not change. Even though there is a huge difference between the content of work and especially the procedures and tools used, for example, by people operating milling machines today and fifty years ago, the subject of the work (milling) remains the same and therefore stable. It is important to emphasize that the subject of the work does not change. What is changing, and often very significantly, is the content.

Occupations are changing and disappearing as a result of the change in the content of work, but the speed of their change is probably not as dramatic as in the case of organizations. Even though several dozen occupations have disappeared in the last quarter

century, compared to the number of emerging and disappearing employers' organizations, which go into the hundreds of thousands per year, these numbers are negligible (OECD, 2018). In addition, the decline of the mining and manufacturing industries in parts of the world traditional for the Industrial Revolution (Europe and North America) does not mean its disappearance globally. Even though Western civilization (somewhat boastfully, it has to be said) attaches to its imaginary signboard a label such as *the knowledge society, the knowledge economy, the service economy or the digital society*, there is still a need to produce what these so-called advanced societies are increasingly consuming. Modern society is thus becoming less and less self-sufficient and is becoming dependent on the productive power of "less developed" societies. That the promoters of the knowledge and information society tend to ignore and sometimes even purposefully hide this fact is a paradoxical state in which, more than anything else, *a society of uneducation and disinformation* is created (Liessmann, 2009).

The constant pressure to adapt and the mantra of flexibility not only divide society, but even create an environment in which it pays not to be individualized. Together with the gradual transformation (perhaps even the disintegration) of traditional institutions "caring" for the upliftment of the masses and the transformation of civil society, man is now directly and indirectly forced into hypertrophied individualization. In agreement with Bauman, it can even be said that *liquid modernity* (as Bauman calls this era) has thus significantly reduced or even completely removed the traditional certainty that people, if they do not want to stay on the margins of society, have no choice but to completely individualize their own lives. Taking care of oneself without relying on social institutions is an accompanying phenomenon at a time when institutions can no longer provide any fundamental certainties (Bauman, 2020).

More than one liberal might say that individualizing a solution is a manifestation of freedom. However, it must be remembered that freedom does not lie in the mere fact that we are free, but rather in the fact that we can choose between freedom and non-freedom at any time. In the spirit of George Orwell's ideas, which can

be found in one of his most famous novels, "1984," it is useful to know that a free man can be one who comes to his own, unconditional belief that being free was his own free choice. Thus, there can be free slaves on the one hand and slaves to freedom on the other. As Bauman (2020, 2021) says, even in the case of freedom, it is necessary to consider freedom and autonomy *de jure* and *de facto*. Do we have to be free because we want to, or do we want to be free because we have to? And in this case, is individualization a necessity because we need it, or do we need it because it is a necessity?

"Belief in the inevitability of our epoch is probably one of those illusions that is necessary for the inevitable to become truly inevitable (Liessmann, 2009, p. 119)."

Even though the production of risks and contradictions is a social obligation to deal with them, it is individualized. Individualization is destiny, not choice. The individualization game cannot be escaped, or it is not possible to refuse to participate in it. However, this also has societal implications in the form of weakening civil society. The citizen, Bauman says, is a person who tends to pursue his well-being through the welfare of the community, while the individual is lukewarm, skeptical, and cautious in matters such as the *"public interest," "equitable society"*. After all, he is a mandatory participant in the game, which says that everyone is primarily responsible for themselves. In the logic of such a community of individuals, it is the "common interest" to allow everyone to primarily satisfy their individual rather than the interests they hold in common (compare Bauman, 2020, pp. 50-52).

Another problem with postmodern freedom, which is also strongly related to work, is its outward appearance. The pressure to constantly adapt to change does not make a person freer than the pressure for stability. If the only certainty is change, which is, moreover, influenced by those who are least affected by the hardest of these changes, then there is essentially no such thing as individual choice. The attribution of social status defined by origin changes into an attribution defined by constant change. Although the strong emancipation movements of late modern and postmodern society have severely limited the traditional

reference groups which have shaped individuals' attitudes toward work, profession, and career, we must not forget that it was postmodern development that created different limits.

"We have less and less models, codes and rules we could to adapt to, to choose as stable marks for orientation nowadays. ... Such a workforce tends to undergo countless profound changes during its career before it reaches a single real end: that is, individual life (Bauman, 2020, p. 15)."

The rhetorical question which it is logical to ask in the context of the previous paragraphs, is: "Shouldn't the task of progress be to make life easier rather than more complicated?"

Despite the undeniable advances in the development of artificial intelligence, we cannot ignore the fact that AI has led to modern society gradually moving towards a certain simplification of decision-making processes. However, this is not because it should be easier to make the right decision, but because even the most advanced artificial intelligence decision-making algorithms are not yet able to handle the trillions of variants that the human brain's neural network allows. So often people have to simplify their decisions not because they are right, but because machines need a given degree of simplification in order to work. So, it is not machines serving people, but people serving machines. Rather than the correctness of the decisions, it is a question of the acceptable level of incorrectness (compare: Kamensky, 2017; Spitzer, 2012). The important question, however, is: "What is the right criterion for deciding the level of admissibility which is going to be enough?"

Despite the respect for the technological prowess, intelligence and complexity of many technologists who create advanced robots (real, but also software), issues of morality, ethics, culture, emotions and values fall into the hands of fields other than ICT. But even this still sovereign area of humanity is affected by advancing technology.

"The growing technological complexity in the context of Industry 4.0 technocratic capitalism is in inverse proportionality to the spiritual sphere which is simplified in the postmodern tradition of misconceptions of

consumer society and a mass actor-consumer's false sense of involvement in the innovative development of techno-environment and knowledge economy (Kamensky, 2017, p. 9)."

Technologies that surpass a person's physical or volitional cognitive abilities have always had and still have a major impact on the transformation of society.

It is true that many technologies surpass man in his physical and volitional cognitive abilities. However, it is important to point out that the phrase is volitional cognitive. In addition to thinking, memory, and a variety of mental operations (analysis, evaluation, combining, decision-making), there is a wide range of what our brain and nervous system can do, but we ourselves are not in control of these processes and they remain hidden from our direct consciousness. As Jostein Gaarder says: *If our brain were so simple that we could understand it, we would have to be so constrained by its simplicity that we could not understand it* (compare Gaarder, 1995). This is by no means to question the level of technological progress, because that is definitely respectable. However, when an electronic device can calculate something faster and more accurately than a human at the same time, and when a computer can beat even a chess grandmaster in a game of chess, this still does not change the fact that, at least for now, even the most powerful computers and so-called Artificial Intelligence have come into existence, as far as we know, thanks to humans, not the other way around. This, of course, may change in the future. However, the question is whether we are becoming dependent on technology because of our reluctance to give it up rather than the simple fact that we need them in our lives. Even a complex nuclear power plant is controlled by computers, not because people as biological creatures need it, but because they want it. If technologies are used in the future to avert huge natural, man-made disasters, it will not be because of the will of the machines, but because of the potential that people have given them in the beginning. So far, however, the question whether humanity has improved through technology is often still an open one.

The use of digital technologies and artificial intelligence has a huge impact on

traditional job models and forms of work collaboration. The ability of many digital professions to work anywhere is almost unlimited. From one point of view, this option could make people who can do it more independent. On the other hand, there are several complications for the current employment system and existing labor law rules. Protecting employees with local laws is complicated in different countries, and it does not matter if we are talking about an independent state in our region or a country on the other side of the globe. Thus, under what law will an Austrian-based programmer be employed for a Mexican company in the Bahamas? How will compliance with any such laws be monitored, and how will they be possibly enforced? The problem of working in conditions of spatial flexibility is much more complex and therefore cannot be reduced to the question of supply and demand or the speed of connection to the global information network "internet" (Kořen, 2019).

CONCLUSION

Fear of progress has accompanied mankind since time immemorial. The unknown, the incomprehensible and the uncontrollable have been, are, and probably will always be a source of frustration arising out of feelings of imperfection, inadequacy and helplessness. No matter how these fears have manifested themselves, they should not be a reason for trivialization or "positive" manipulation. This applies both to adherents of technology and the global market, and to those who look at their accompanying phenomena with more concern and reservations.

It cannot be disguised that this essay is a critique, but it would be unfair to assess it as primarily or even purposefully critical. Its main purpose is to relativize techno-optimism and provoke a debate that will be broader and deeper than just the constant social discourse dominating the proclamation of new, better tomorrows that will guarantee technological progress for humankind. Progress, like science, does not readily lend itself to value judgments such as good, bad, beneficial, unhelpful. It is necessary to apply broad, purposefully unreduced knowledge and consistent critical

thinking of its impact. In the society of knowledge, if it really is such a society, that is what it is about.

"A society that defines itself through 'knowledge' could be understood as a society in which reason, judgment, balance, foresight, long-term thinking, clever reasoning, scientific curiosity, and critical self-reflection, gathering arguments, and hypothesis research finally outweighed irrationality, ideology, superstition, conceit, greed and ignorance (Liessmann, 2009, p. 22)."

The current discourse over the changes that accompany, follow or sometimes even provoke the technologization of society is quite significantly dominated by states that are highly uncritically optimistic. This is due to the overly one-sided focus of modern social engineers, who, and hopefully unintentionally, create pressure for change without a deeper insight into the broader social context (compare Širůček, 2017, 2018). This focus is a partly purposeful - and, it should be noted, often very sophisticated - promotion of the ideology of the need for technological development in all areas of human existence, which conspicuously becomes an ideology accepted and supported by society as a whole. Modern technocracy has the strong potential to influence social opinion through the astute control of the information space. Anyone who is not always ready for transformation becomes a renegade who does not understand the needs of the current time.

"Today, it is necessary show willingness to reform, a person who resists reform is bad. Reform is good, it is a defense against evil, the world is divided into supporters of reforms and enemies of reforms. And like any good ideology, the reformist spirit does not have to justify itself (Liessmann, 2009, p. 110)."

Paradoxically, the use of the term "knowledge reform" exposes the limited knowledge of the reformers themselves, because to reform means to return to the original form, meaning, purpose. Thus, the reformer, in the true sense of the word reform, is not the one who abandons the original forms and establishes others, but the one who returns to the origin and its basic values (Liessman, 2009). However, it is not for us to stagnate in an old-fashioned manner, complain about a bad future, and dream

about the past. We cannot forget that in assessing the past, moreover, uncritical remembrance optimism plays an important role. It would be enough to respect existing knowledge, at least until it is refuted in Karl Popper style.

Zygmunt Bauman said that one of the fundamental changes associated with fluid modernity that is a hallmark of the post-industrial and postmodern eras is the loss of faith in long-lasting truths and goals. This is an accompanying phenomenon of emancipation, but it can, and often does, cause a completely

different kind of limitation. Whereas in the past we used to be paralyzed by the path that someone else chose for us, today we are paralyzed by the need to constantly move and constantly catch up and, above all, to constantly make choices. Our choices are no longer permanent, so as a result of our knowledge and changes around us, they are constantly changing. However, our own responsibility for them remains (Bauman, 2020). It is therefore in our own interest not to succumb to the delusion of the absence of other possibilities and ideas. This would be irresponsible to ourselves.

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