

**METHODOLOGY for
Adjusting and/or
Reinventing Curricula for
the Era of Automated
Labor, Green Transition
and Digitalization. //Foundation and framework
for Project Result 1 of the
EIDE Consortium**

1. MAIN CURRICULUM INTERVENTIONS WE PROPOSE:

As stated in the premise of the project proposal, the alignment of teaching and learning in the area of SSH (social sciences and humanities) can take the form of either inventing new curricula or intervening in the existing one with new themes, problems and research questions that address the era we live in which is transforming into a digital continent if not world.

In spite of the differences in the country profiles and the analysis of the faculty from the different partners in the project consortium, we have established commonalities that we believe ought to be and could be integrated in the existing curricula through syllabus interventions or move toward reaccreditation with the same horizontal aspect of keeping in view the dimensions of digitalization and automation. Certainly, the same goes for the European Green deal and addressing the climate emergency, but we are analyzing it here as linked with the processes of digitalization as proposed by the European Union. Two of the partners in the project are not EU member states but they are full members of the Erasmus program and the European Higher Education Area. Thus, with minor adjustments (“minor” from a technical or administrative point of view, but the alignment with the European Acquis is a “must” for the accession countries), the same rules set by the EU apply to all project partners in this consortium.

- Processes of digitalization and rapid technological development will change our part of Europe, even if in an uneven manner compared to the richer or older member states, and this constitutes a socio-political, economic and even ideological transformation in the sense of subject formation of both physical and legal entities;
- Our departments covering the areas of SSH, cannot stick to the traditional disciplines or political discussions in an abstract and purely academic (if not scholastic) manner, but need to be able to discuss policies scientifically responsibly

- and thus address the emerging reality of digital societies; the latter refers to other key concepts of SSH curricula, such as the future of democracies, possible new social contracts, possibility of a new political-economy and the overall overhaul of what being a citizen and a human subject means (esp. in the light of labor automation, and the human subject rid of its definition in modernity as *homo faber*);
- We raise the question of whether the European Green Deal will effectively tackle the issue of climate crisis or becomes just another form of accruing surplus value detached from its use value (possible zero-net carbon footprints in European companies, at the expense of the outsourced heavily labor and carbon driven preproduction of, e.g., e-fuels, or the threat to the planetary ecosystem by way of ruthless exploitation of mineral resources); which once again proves that we cannot have political discourse in academia detached from understanding and analyzing the policy context.
 - ISSHS has produced two pilot curricula (in Macedonian) in cultural and policy studies, which it has also submitted for accreditation in front of the national authorities, in which the old programs are reworked from scratch to fit the new context of digital (and green) economy, digital democracy, digital cultural institutions and creative industries – many of the subjects have been reworked syllabi but we have also introduced some entirely new concepts (as summary of the new curricula as an example is added as an annex to this project result 1 related output – “Methodology.”)
 - We conclude that interdisciplinarity is an indispensable component even as a dimension of the more conventional fields, let alone the need to pursue interdisciplinary development of areas, with the ambition of going into a deeper integration and closer ties with STEM (as in the cognitive sciences)
 - We agree, as a consortium, that our considerations of the policy context in an attempt to adjust SSH teaching and research to the emerging era, aligned with our regional context, we will perhaps need to imagine a new political economy (deep crisis of capitalism as we know it, and what is beyond it).

- We acknowledge that experimental and theoretical go hand in hand with the practical, both in research and in treatment of academic contents: one is called upon reimagining human subjectivity in the emerging reality as it is unavoidable that it undergoes changes, and this philosophical question and a question of the interdisciplinary humanities begs the participation in the conversation of the STEM sciences too.

2. THE GENERAL METHODOLOGICAL INTRO, FOUNDATIONS OF THE PROPOSED METHODOLOGY: INPUTS FROM ALL OF THE PARTNERS MERGED INTO A UNIFIED POSITION

2.1. The Epistemic and Methodological Challenge as one of Deep Inter-Disciplinarity, Creation of Cross-Disciplinary Methodological Toolkits and Applicability: The End of Self-Sufficient Scholarship?

We would affirm that the humanities have contributed to commentarism on and perhaps in STEM and AI more specifically, more specifically in the form of a social commentary and philosophical contemplation on topics such as the Self, the post-human, ethics in AI.¹ Considerations on the self in the digital era has been carried out in the areas of humanities and social sciences, as have notions coming from the humanities, and philosophy in particular, been invoked in technological research and STEM. We argue that this exchanges have been carried out across department and disciplines, however in a manner that has never really challenged the genealogies of the notions and the use they may have in each of the major areas, namely SSH (social sciences and humanities) and STEM, and as promulgated by the EU and EC's programs, and more recently through STEAM (Science,

¹ Philippe Verdoux, "Emerging Technologies and the Future of Philosophy," *Metaphilosophy* 42, no. 5 (2011): 682–707. <http://www.jstor.org/stable/24439974>.; Nick Bostrom, "The Future of Humanity," in *The Journal Geopolitics, History, and International Relations* (2009); Rosi Braidotti and Mara Hlavajova, *The Posthuman Glossary* (London UK: Bloomsbury Academic, 2018); Olga Goriunova, Digital subjects: an introduction. *Subjectivity* 12, 1–11 (2019). <https://doi.org/10.1057/s41286-018-00065-2>, to name a few among the many.

Technology, Engineering, Arts and Mathematics).² For example, rationality, Reason, and subjectivity or the sense of a Self are used in radically different ways in the two areas: while philosophy seems to “assume” that Reason or Rationality – take accelerationists, neo-rationalists, xenofeminism, “speculative realism” in all its forms, excluding non-philosophy – are used as concepts by the sciences in a similar way to theirs, which is rooted in Western Enlightenment traditions and older metaphysical traditions, whereas the sciences seem to use the “rational” more as “efficient” reasoning and a subsequent action (a vast generalisation, we admit, however done in the name of brevity of the statement, elaboration follows below), having moved away from any remnants of the metaphysical, as Turing proposed regarding the efficient calculus as the way out of the circularity revealed through Gödel’s theorem. Thus, in order to render this conversation between the areas more productive, panels on the fundamental epistemological precepts must be continuously established and built into novel institutional infrastructures.

Societal challenges are complex and need to be addressed with the widest possible range of expertise and the input of a broad range of stakeholders from across society. Research systems need more flexible structures in terms of organisation, task description and reward processes, in order to facilitate, promote and reward active STEM-SSH involvement in the design and execution of research activities.³

However, we argue that the two major fields seem to be addressing these questions in a unilateral manner, without creating a language that could be transparent to both areas. We argue that topics such as subjectivity, consciousness, rationality, irrationality are still in operation in philosophy in manners indebted to pre-modern traditions (the opposition

² Relevant and high-quality higher education: What the EU is doing, Championing the STEAM approach, available at <https://education.ec.europa.eu/education-levels/higher-education/relevant-and-high-quality-higher-education>, accessed on 26 March 2023.

³ Towards a 2030 Vision on the Future of Universities in Europe: European Commission, Directorate-General for Research and Innovation Directorate G – Research & Innovation Outreach, Brussels: RTD-PUBLICATIONS@ec.europa.eu (Manuscript completed in September 2020; Revised/Corrected/nth edition.)

between rational and emotional, the dichotomy between idea and matter) that do not contribute to the debates in the STEM sciences. On the other hand, in cognitive sciences, and in other STEM sciences too, one operates with notions that spring from philosophy, such as consciousness or identity, but the use is spontaneous, philosophically unchecked, without it being subjected to the rigor of the discipline/s (of philosophy and other SSH), used almost colloquially as it builds on evolutionary biology and other relevant sciences, entrenched in materialist presuppositions while supplanting them with Plato's views leading to inconsistent positions. (Cf. Michael Levine and Dany Adam, *Ahead of the Curve: Hidden Breakthroughs in the Biosciences*, 2017). Thus, we argue, and this is the central premise of the proposed methodology, that the divide can be bridged via a science that may not even seem like a proper scientific field, but, if done rigorously, it is both science as well as practice that can help effectively address the problem - *policy studies in the area of research and innovation centred economy in Europe*.

The Methodology offers pilot models for such encounters among the SSH and STE(A)M, infrastructural experiments, of cross-departmental collaboration on research feeding into teaching and vice-versa – teaching and research are inherently intertwined – where we can test if the post-humanist discussions in humanities could de-center anthropocentric discussions in AI and STEM, and vice versa - if cognitive sciences could shift the underlying anthropocentrism in the traditional concepts of philosophy and humanities (Reason, Self, Consciousness and even Sublime next to Ethical). We argue that, in spite of the seeming contradiction in terms, the post-humanist turn in the continental philosophical tradition or that of cultural theory has romanticized and anthropomorphised the technology and AI, mutating it into a mimesis of (human) subjectivity. Here, we argue that the only concepts of subjectivity inherited from philosophy are based on human subjectivisation, and there is no absolute Subject(ivity) one can “apply” on AI or AGI without anthropomorphising it. The tendency to imagine AI or a purely technological Self can develop emotions, to come up with ethics of inclusion that expands the human rights bills, and similar, betray such spontaneous naivete of thought. The consequence is that when STEM is brought onto the

terrain of SSH, it is subjected to think in categories that are in conflict with its precepts – in particular on the topics of ethics, consciousness, selfhood. On the other hand, the concepts STEM operates with are looked down on by the SSH, philosophy and critical theory in particular, as instrumentalised fragments of more complex notions, “banalising” the conversation. The deep interdisciplinarity needed for this era, and aligned with the European Research Area 2030 strategy, requires mutual challenges of the fundamental concepts in the two areas, in particular those that intersect and require a common terrain of exchange.

The goal is to accomplish workable problem-centred deep integration of the social sciences and the humanities (SSH) and STEM (science, technology, engineering and mathematics) sciences organized around the following main topical preoccupation: to meet the challenges of socio-economic inclusion and equality in the post-Covid reality of Europe. Challenges in question concern the continent’s (not only the Union’s) commitment to full mobilization to achieve recovery and build resilience through full digitalization of economy and society along the lines of the so-called twin transition (digital and green). The same priorities are built into the New European Research Area (ERA) Strategy 2030 and reflected in the topics and priorities of Horizon Europe (see: European Research Area (ERA): Four strategic objectives, URL to the New ERA: https://ec.europa.eu/info/research-and-innovation/strategy/strategy2020-2024/our-digital-future/era_en). In other words, science is set against prescribed and specific priorities, based on multi-issue policy analysis, putting the deep integration of SSH and STEM at its centre. With this project we are seeking to address the deep epistemic, methodological and topical challenges of such goals and contribute to reinvention of both sciences and philosophy, as well as the rest of the SSH – examine the philosophical premises of the dominant techno-scientific paradigms as well as analyse the preconceptions in SSH, and in particular philosophy, about the prevailing processes of technological advancement: e.g., what is AI and how do the arts, humanities and social sciences believe they should and could contribute to its development and understanding of its societal effects, but also juxtapose those discussions to the

philosophical preoccupations running through debates in the sciences nowadays. However, against the background of the post-pandemic transition toward a “digital and green Europe,” this project’s tasks are more immediate as the processes of socio-economic and political transformation are unfolding while innovation and science become the prime mover of the European economy (See: European Commission, Priorities 2019-2024: A Europe fit for the digital age Empowering people with a new generation of technologies, available at https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age_en).

The intergovernmental policy goal of restructuring European economy and socio-political reality shared by all countries in the region represented in the consortium, as well as wider Europe, of an ever greater labour automation, accompanied by a boost in the small and medium enterprise (SME) sector, ought to be examined with scientific rigor of an integrative interdisciplinary perspective, i.e., in terms of what it seeks to accomplish and how it will affect the overall societal reality on the continent. It ought to be submitted to such analysis from the multifaceted perspective of economics, social sciences, technologies, cognitive sciences and STEM. The in-depth scholarly insights ought to be “translated” in terms of policy analysis based on rigorous scientific research, understanding the discipline of policy studies as a science in and of itself, as we seek to imagine and critically anticipate specific scenarios of societal change that will be deployed in our immediate or foreseeable future. At the same time, we will look at the other side of the same coin: the scholarly challenge to address the epistemological, disciplinary and other rigidities that have prevented sufficient collaboration between the STEM and the SSH in the sense of yielding discoveries that demonstrate participation on equal footing of the two major disciplinary areas.

In spite of collaborating with the STEM area, in particular, around AI and in other topics concerning technological development and social transformation, contemporary philosophy and SSH have always been an appendage to the technological and scientific enquiry usually reduced to examining aspects of ethics and offering a meta-conversation

on the issues of subjectivity and self-awareness when it comes to conceiving of the “AI selfhood.” One wonders if said type of contributions on the part of SSH affects the developments in technology and the goals of the STEM sciences and enjoins a philosophical discussion that is truly pertinent to those involved in the sciences and in society at large. On the other hand, in SSH we rarely see proper conversations with the input from the STEM on some key questions of its preoccupations such as “rationality,” “subjectivity,” “rights,” “reflexivity (of mind)”, the Cartesian mind/body dyad, except in the form of critical theory based contemplations lacking substantial engagement with the language and concepts proffered by the STEM in said array of topics (our conclusion based on the Humanities Global Conference discussions in Liege 2017). These deeper epistemic challenges need to be addressed in order to come up with a proper policy studies subfield based on humanities, social sciences and technological development in an era of an ever-greater automation and digitalization, moreover one adjusted to the goals of a green and sustainable Europe. The trajectory is therefore the following: one ought to begin with the deep scientific quandaries and interdisciplinary challenges of the era in order to arrive at a workable vision as to how the practice of sciences and higher education should be refashioned to help accomplish socio-economic and technological long-term goals of sustainability of the continent. This is what the temporal dimensions of the Covid situation have taught us.

For a while now, SSH have sought to contribute to the understanding of the changes in our global and European realities brought forth by technological advancement. We argue that what they have achieved so far is mostly to be a complement of reflection restricted to the language of its own field – either critical theory or empirical measurements of the possible effects on the society, economy and the future of democracy – hindering a two-way exchange with the sciences. We believe collaborative projects on equal footing are required to understand the transformation of socio-economic reality and new political possibilities as well as of the shortcomings brought forth by the reality of deep digitalization. Such an exchange will shape the possibilities of the imaginable, will inform

the value systems and will inform - in terms of political and economic knowledge - the choices and trajectories pursued by the sciences as well as reimagining the horizons of techno-scientific advancement. On the other hand, hands-on cooperation on project ideas with STEM scientists will inform the concepts, terminology, and topical preoccupations of the SSH. A possible deep level of interdisciplinary integration between SSH and STEM has rarely been scientifically explored from the perspective of policy studies as a scientific discipline.

To merely illustrate the state of affairs in this area, let us point to the appeal made on the record at the 2019 annual Chatham House conference by one of the fathers of AI, Stuart Russell: “we are in a pressing need of the participation of philosophy and the social sciences in the shaping of the technological near future and the future of democracy globally speaking” (a paraphrase, the video is available at the CH website: <https://www.chathamhouse.org/events/all/special-event/londonconference-2019>). On the other hand, the UNESCO global conference on the future of humanities held in Liège (Belgium) in 2017 demonstrated that points of convergence are still sought for from the point of view of the discipline(s) of humanities rather than from a problem centred perspective that would unite the two major disciplinary areas in collaborative projects. Certainly, this is our understanding of what said global conference demonstrated to be the state of affairs in the humanities, and there can be many opposing views. However, we depart here from our understanding of the state of the art, after the start of the global Covid pandemic, which can corroborate with references that speak to it. If this project gains the support it seeks, this realization will be examined with rigor and the state of the art reassessed.

Russell’s appeal illustrates that an effective and fruitful communication across the areas of SSH and STEM has not taken place thus far, certainly not the one that can help the sciences examine and define its horizon of goals and expectations. We will offer deep insight in what interdisciplinarity may mean (cf. Repko & Szostak 2021) in relation to SSH and STEM

integration. Interdisciplinarity across the academic spectrum is called “broad interdisciplinarity” in the literature (broad as opposed to „narrow” interdisciplinarity on the basis of epistemic and methodological equality within STEM and within SSH); its goal is not the dissolution of disciplines but rather the integration of their deep and rigorous knowledges and insights.

There are publications of the sort as well as research programs that have moved the conversation further. As for the latter consider Utrecht University’s special interest group “AI in Cultural Inquiry and Art: Thinking and Making in the Algorithmic Condition,” including staff of the research team “Subjects of Interdisciplinary Learning and Teaching” (SILT), and other projects of this world level top ranking university when it comes to research in the humanities. Beyond Europe, consider the Center for Philosophical Technologies of Arizona State University, one of the top 10 universities in the US when it comes to innovative research, as well the research taking place at the Department for Architecture Theory and Philosophy of Technics ATTP at Vienna University of Technology, Leuphana University of Lüneburg, as well as many other projects completed within EU grant schemes proposing curricula of deep integration (e.g. the Erasmus+ project Intersecting sciences and humanities consortium consisting of Utrecht University, Institute of Social Sciences and Humanities-Skopje, and Sofia University which thematically precedes our current project, EIDE; or the H2020 project Ethics of Coding consisting of aforementioned ATTP and SILT as well as the University of the Arts London) or some graduate level informal, international and experimental study programs such as the School of Materialist Research, a global platform engaging in across disciplines innovative conversations on mathematics, philosophy, scientific models of thought established by several European HE institutions and one American (Arizona State, to be more precise). There are noteworthy recent publications that signal the necessity of an integration based on a “flat ontology” between the SSH and technology and the exact sciences, such as a recent issue of *Philosophy Today*: Volume 65, Issue 2, Spring 2021: Philosophy after Automation, or initiatives like the recently established *Technophany* journal or important publications from a couple of years ago

such as *Subjectivity* volume 12, pages 1–11 (2019): Digital Subjects Special Issue, recurring topics at *E-Flux* journal, etc. The appeal of established names in the STEM, and in AI in particular, such as Stuart Russell for the philosophers and social scientists to join actively the projects led by technical sciences is expressed in publications too, and not only at conferences as mentioned above (consider Russell’s *Human Compatible* monograph from 2019). A detailed list is available in the literature section below.

All of the mentioned processes and products (publications, networks) have contributed to a deeper integration between the SSH and the STEM. However, all of these initiatives have also demonstrated (and raised the problem) of the limits of disciplinary constraints, the need to build a language that will be shared across the disciplinary walls in question and arrive at a situation where these walls will be taken down as stated at a recent conference by Yuk Hui, the editor of the aforementioned issue of *Philosophy Today*. Our goal will be therefore to respond to this epistemic challenge and finally arrive at a socio-political vision translatable in a policy vision too. As the principle of “effective calculus” has served the Occam’s razor in mathematical disputes leading to computability as we know it now, in the era of AI, so effective – applicable to societal change and improving the collective and individual wellbeing of society – socio-political, economic as well as philosophical discussions of “digital ecosystems” should amount to a change that is tangible, measurable, realizable and possible to advocate for. The Network of Proposers shares the conviction that there is no hierarchy between theory and practice, knowledge and societal productivity – this philosophical premise undergirds both the SSH and the STEM scientists participating in this project.

3. DESCRIPTION OF THE CHALLENGE (MAIN AIM)

To define the starting points of a topical epistemic paradigm which will enable collaborative investigation of the phenomenon on the rise of full digitalisation of the society and economy and an ever greater automation of labour and “greening” of the economy and exchange, tackling several key questions. Thus, the main aim is hereby presented as a

break-down of several research questions: 1) will a deeply digital society enable equal access to all and what are its challenges of possible exclusion, along the lines of gender and its socio-economic dimension? 2) Will a fully digital Europe of AI be a place of democracy, what are the dangers of sliding into totalitarianism or autocracy? 3) What is the future of environmentalist activism once the “green transition” is mainstreamed into the hands of the nation-states and corporations, where in the society can it position itself as a proper watchdog of the policies underway? 4) What will be the status of physical labour in an ever-greater automation of labour and mushrooming of SME”s in Europe, and, in this context, what will be the status of Southeast Europe as it is currently lagging behind the rest of the continent? 5) Can STEM and SSH envisage a society in a mutual effort and formulate its priorities such as the question of rights and agencies, differences between subjectivities and means of production (when it comes to machines and AI), can a vision of a democratic, inclusive society and on true industrial productivity set the parameters and goals of technological advancement? 6) Are ethical dilemmas questions of philosophy only or a bottom-up approach of social consensus? In order to be able to produce knowledge that changes the lived realities of the Europeans – EU or not, achievers or under-achievers in terms of science – we intend to distil the main findings into a policy analysis to be shared with the major national and EU level policy makers and other stake-holders beyond academia.

We seek to set the approach to the challenge by proposing the following institutional innovations in the HEI’s that constitute this consortium as well as propagate the model wider, on our respective national and European scenes:

1) through *assembling* scientists, philosophers and social scientists who are prepared to “merge” (i.e., integrate) knowledges, concepts and methods from their respective fields in order to address the questions stated above.

Their experience with communicating across the boundaries of not only disciplines but areas of study too (“areas” as used in Frascati’s classification), in addition to the

demonstrated ability to produce studies where sciences and humanities represent a continuum will provide the model of collaboration. Such examples are provided by Yuk Hui's *Recursivity and Contingency* more recently (2019) or *Primate Visions* by Donna Haraway published back in 1989, or works in science where philosophical consequences are an inevitable product of study, e.g., Turing's *Entscheidung's* problem paper from 1936 or Paul Cockshott's et al. *Computation and its Limits* from 2012. The design of research or the epistemic model, on the other hand, will be a research challenge integral to the project itself. Therefore, it is not part of the approach to the challenge but an intrinsic element of the original research to be produced as part of this project. In other words, grappling with the issue at hand that currently seems as a series of unproductive one-sided pronouncements from across areas, we will try to establish the epistemic frame and a possibility of a shared language engendering novel and fresh approaches to said deep interdisciplinarity. It is for these reasons that we have assembled researchers that have been productive in both sciences and philosophy and are capable of forging adequate communication.

2) *Through establishing a fully experimental approach, be it to empirical data or concepts, and reworking a vocabulary shared by the different and mutually estranged fields in order to produce knowledge in response to the questions that constitute the main aim.*

The challenge to the state of the art will be a challenge in its own right: terminology will be as generic as possible in order to be able to traverse through the variety of fields of the SSH and the STEM. The bridge to provide the grounds and assign some specificity to the “generic – or inter- or even transdisciplinary – terminology” will be provided by the criterion of applicability. The notion of applicability we invoke here is twofold, it concerns industrial applicability as well as social applicability in the form of policy analysis that we propose here as the conceptual thread weaving in and out of disciplines, keeping the tapestry they constitute together. A terminological apparatus is, evidently, something interior, immanent

to the research process itself and is different from the communication issue tackled in approach (1) above.

3) Through *engaging in a dialogue with policy makers, industry and other non-academic stakeholders that will give the contours of the policy analysis which will ensue from the academic research and its solid scientific grounding*, with the purpose of creating a policy vision that will shape the socioeconomic transformation but also the techno-scientific ambitions of the continent, with a special focus on South-Eastern Europe and other (including the rest of Group 3 and Western Balkans countries; note: Greece belongs to group 2, but by its connections with said groups are impossible to disentangle). This dialogue has already started, as an example, at Utrecht University in the “Leadership in Culture” programme (see: <https://leiderschapincultuur.nl/english/>), a programme that will be enriched not only with SSH but also with STEM; following that and other similar examples, we can enrich the models we are proposing here.

4) Through *accepting the premise that SSH could be a collaborative equal partner in a joint study endeavour with STEM* instead of meta-commentary or an ornamental addition to the conversation about sciences. SSH and STEM should engage in a shared attempt to established a unified vision of the socio-economic transformation that is underway, including that concerning the environmental crisis.

5) Through *engaging in a critical exchange, as well as including activists in the research project itself and in that way enable an activist, political dimension to the process of study from its very onset*. Activisms we have in mind are already intimated in the above sections: environmentalists, activists for social inclusion and socio-economic equalities, advocates for gender equity, unions which will deal with the status of physical labour as cheap labour, in particular, in the peripheries of Europe Objectives

Objectives of the proposed epistemological and methodological restructuring

a) Successful collaboration between SSH and STEM in identifying the main forms of social transformation due to deep digitality and increasing automation: what givens, and presuppositions exist in our understanding of how a developed and democratic society functions; e.g., how are we to understand the notion of freedom in such a context, marked by the post-Covid acceleration of the processes underway, or are the universal human rights to be reformulated, are we in need of a new definition of democracy adjusted to the deep and green digitalisation, are ecosystems still only natural systems and how do we explain their interaction - or disruptions and continuities – with technology?

Interdisciplinary SSH-STEM group will identify the main categories to work on;

b) A working group composed of SSH and STEM scientists should be set up across universities – at least in the participating countries/institutions - to identify how the social, political and philosophical changes that our continent is about to undergo in the upcoming decade, accelerated by the post-Covid transition, will influence shaping the direction of how techno-scientific discoveries and innovation will assume based on the underlying presuppositions of: what “progress” is, what the tacit consensus about the purpose of sciences (and the position of humanity with respect to it) seems to be on global scale and in Europe more specifically, how does science define its role and responsibility in society and will that change in the context of the post-pandemic transition? These questions are to be addressed in dialogue with the set of categories identified in objective (a), and thus a set of research priorities in the STEM sciences will be identified.

c) A group of issues and possible scenarios around them will be identified and addressed concerning the socially excluded, based on economic vulnerability, gender and other forms of vulnerabilities. Within the same research coordination group, we shall identify a major subset concerning the socio-economically vulnerable spaces in Europe, South-Eastern Europe more specifically, and other areas that could be identified as the margins of Europe.

d) Ensuing from the results of (c) group of issues, a special group for socioeconomic enquiry into the effects of the deep digitalization, boosting of SME”s and automation of

labour on the region of South-Eastern Europe (and other marginal areas) will be established. It will identify, anticipate and recommend interventions against possible vulnerabilities including the possible transformation of the region into an area of cheap physical labour while the economies are simultaneously trying to catch up with the ever more automated industry and society of the rest of Europe. The answers to such possible challenges are to be given in socio-economic, political and technological terms, but also in terms of policy recommendations.

e) A group of academics, policy makers, politicians and activists will address the question as to how the projected societal transformation will affect activism as we knew it until 2020, in particular as it concerns the environment, human rights and gender as a socio-economic category (including reproductive labour). A set of themes will be identified, addressed in a manner that is grounded in empirically founded projections which is something that not only does not impede – but quite to the contrary, encourages – theoretical experimentation with new possibilities for activism, new priorities and areas of actions. A set of new categories, redefinitions of the old categories and avenues of action should be established.

3.1. Capacity-building Objectives of the Methodology

a) Epistemological workshops that would build the “transversal intellectual skills” across SSH and STEM to unite under a shared epistemic paradigm built for the purposes of this project’s Output: breaking down a specialist argument to a statement that can be legible to other disciplines, representable in narrative/textual form as well as by way of more formal representation that is closer to the expression of the exact sciences, as something that lays out the theoretical presuppositions and methodological approach – these “empty” structures of conceptual grids can be filled with different semantics, adjusted to the specificities of the disciplines but can also serve as a model to unite the interdisciplinary content of the findings, in an integrative manner; the main transversal skills of deep interdisciplinarity to be undertaken here are:

- 1) Identification of the meta-language of a paradigm of thought: chief philosophical premises, presuppositions and problem-solving approaches to the problem/s;
- 2) Building a shared methodological approach or epistemic stance that is not discipline bound: the status of empirical data, the relation of empirical proof to the purely formal argument or proof.
- 3) Skill of translatability of scientific knowledge into policy knowledge and vision.
 - b) Building the capacity of the SSH for formal expression and getting acquainted with the main theoretical debates in the STEM, identifying similarities in philosophical preoccupation between sciences and SSH; building the capacities of the STEM for transposition of their philosophical concerns onto the level of an informed philosophical discussion, social sciences theories and contemporary critical theory. Thus, exchanges of relevant competencies for a proper teamwork of the two types of scientists participating in this project.
 - c) Enhancing digital competencies and models of reasoning (digital competence) for both groups, not only at the level of skills aimed at the use of digital technology but also for building a deeper understanding of how digital reality operates and exploring its potentials for addressing the climate change and other societal and environmental concerns, as well as for activist mobilisation (digital active citizenship). Understanding the digital ecosystems as the reality of scientific research will be embedded in the post-2020 Europe.
 - d) Building capacities for computing and coding as tools that can enhance the research process and accelerate its results in measurable terms that will reflect the potential for change in the society but also a breakthrough in the field (the two things are intertwined in our understanding of this project's goals), equally useful for the SSH and for the STEM.

In the next section of this epistemological (and general intro into the methodological challenges), we will address the already evident or easily predictable injustices toward the

more poor regions of the continent, such as Southeast Europe, but also their gendered dimension as well as that of the socially disadvantaged groups. Thus we are opening the discussion of deeper and effective inclusion or inclusion beyond the mainstream political notion of “inclusion” into the *status quo*, but also rethinking the *status quo*.

3.2. Epistemologies for digital justice? Addressing inequalities in the digital economy

This project sets out to explore how digital economies and their concomitant sociocultural formations and practices impact labor conditions and configurations of education in the Southeast Europe. The study of these ongoing societal transformations in the context of increased labor automation and digitalization challenges the ways we consider temporal and spatial connections within globalized capitalism and the ways we interpret technology, connectivity, embodied subjectivity, gender, infrastructure, technology, and the human-machine relations within social sciences.

Therefore, new interdisciplinary epistemologies are needed to delve into these shifts in global political economy, taking into consideration the ways in which the sped-up temporality of im-material labor problematizes and complicates what is recognized as “work”, “workplace” and “workforce”. Feminist thought has importantly challenged essentialist descriptions and conventional categorizations of “work”. Also, such epistemologies need to account for digital geographies and situated encounters through which digitalization becomes a constitutive aspect of the gendered and minoritized contours of invisible/unpaid labor and precarity. In order to do so, they pose questions concerning the relationship between labor and the social production of knowledge; a relationship bound up with power asymmetries in relation to class, gender, and ethnicity.

In order to account for the challenges posed by a digitally transformed present in a Europe of intense structural inequality, we need to bring forth epistemologies of digital education that remain committed to the principles of gender and intersectional equality, democratic administration, and equally accessible public services and resources of care and education.

Therefore, these epistemologies need to reconsider and rearticulate the promise of democratizing work that digitalization has held out.

Does the ongoing digital transition add new impetus for improving gender equality? Or does it expand gender, class and citizenship disparities in Europe? How could we shift from a gender-blind digital economy to enabling and promoting gender transformative policies? How could such democratic management be even possible insofar digital economies are driven by profit? To what extent are digital social rights and fair digital economies possible in the algorithmic milieu of digital capitalism?

In a Southeast Europe of intense intersectional inequalities and precarization of labor, and at a time when the most jobs likely to be displaced by digital automation (especially in a platformizing labor market) belong to women (and) migrants, how can we imagine and implement socially just (digital) economies? How does digitalization account for the “feminization” of remote work? How is algorithmic discrimination to be combatted? And how are equal pay, occupational safety, social security, workers’ rights, collective bargaining, and a fair work environment to be ensured in an increasingly digitalized labor market?

Guided by such questions, we seek to generate knowledge on research methods, concepts, and sensitivities able to counter “epistemic oppression”⁴ and to bring forth alternative social imaginaries of digital connectivity and education.

As the world of work is rapidly digitalized and reshaped, especially in the context and in the aftermath of the COVID-19 pandemic which has accelerated this process without affecting everyone equally, we need to make better sense of how this transition disproportionately impacts groups at risk of being marginalized in the digital economy, including women, ethnic minorities, people with disabilities, as well as refugees, displaced people and migrants.

⁴ Kristie, Dotson, "Conceptualizing epistemic oppression." *Social Epistemology* 28.2 (2014): 115-138.

More research is needed on the gaps between regions in terms of digital employment. Also, the ways in which digital work is outsourced from the global North to the global South need to be addressed and analyzed.

Southeast Europe, considering its power asymmetry compared to the Northwest of Europe as well as its economic underpinnings, is concerned with designing and supporting higher education learning and research projects focused on the study of platform-mediated working arrangements, in all their local, translocal and regional specificities. However, epistemological and institutional endeavors to equip students with digital skills should enable them to critically grasp complex aspects of emerging digital realities, including, notably, the uneven ways in which digital subjectivities are produced, distributed, and culturally mediated.

From this standpoint of acknowledging differentially situated subjectivities within digital(ized) landscapes, epistemologies to prompt critical reflection about barriers and asymmetries in terms of access to education, devices, infrastructure, and skills should be developed and updated.

Following this line of inquiry, rather than narrowly economic and depoliticized worldviews of digital transformation, we might instead promote epistemologies of digital education that focus on the social and public values, impacts and potentials of the digital. Contrary to top-down norms of innovation, we need to generate epistemological approaches that reorient attention to local, participatory, and community-based experiments of socially just and environmentally sustainable connectivity and knowledge production. Instead of individualization of digital rights according to the neoliberal paradigm (i.e., “individual data protection”, “privacy”, etc.), it is vital to promote epistemologies that take into account sociocultural aspects of connectivity, including just working conditions, inclusive welfare infrastructures and equally accessible public services.

In trying to make sense of aspects of digitalization such as algorithmic thought, automated cognition, and computability, this epistemological and conceptual work needs to enable ways to reflect on the complex intersections between the sensible, the affective, and the cognitive, without reducing the complexities of social and cultural processes to technological determinism.

Through this perspective, we might need epistemologies that ask under what conditions, for whom, and at what cost particular systems come to be perceived as “intelligent”. In this sense, we might follow the lead of Elwood and Leszczynski (2022) who argue for “glitch epistemologies” to call attention and analytical focus toward moments of disorder, disorientation and performative failure in processes of perceiving digital systems.⁵ This requires rethinking (and unlearning) much of what we often take for granted, such as science, technology, economy, labor, and education. Finally, it requires working across multiple differences for plural and multidisciplinary epistemologies of collaboration and positionality to open up dominant epistemic regimes to different ways of knowing, re-knowing and un-knowing.

Another epistemic and philosophical aspect of the policy overhaul at stake is the new regime of subjectivation. A new regime of subjectivation

An apparatus of security as the market of negative risks is not a despotic machine. It does not dictate conduct, it merely conducts the conduct of the economic actors by regulating the costs of different choices, by increasing the costs of high-risk choices, by drawing dividing lines between 'us' and 'them', between our allies and enemies. Such a regime of governmentality can work only if the social and economic actors make responsible

⁵ Agnieszka Leszczynski and Sarah Elwood (2022) “Glitch epistemologies for computational cities”. *Dialogues in Human Geography*. See also: Elwood S and Leszczynski A (2018) “Feminist digital geographies”. *Gender, Place & Culture* 25(5): 629–644.

choices. Because of that, the market of negative risks needs a regime of subjectivation. The strategic documents insist that social and economic actors should be constituted as subjects of responsibility (see for example EU 2019, 22-23; EU 2018, 15). In the context of the green transition, however, responsibility is acquiring a new meaning: the governmental and economic actors are supposed to recognize themselves, one one hand, as subjects of ambition (perhaps one of the most frequent words in the communications by the European Commission); on the other hand, the social and economic actors are constituted as subjects of responsibility for the environment and, to the extent that the environment has been already devastated, as subjects of guilt. As in liberal and neoliberal markets, subjectivation is going to rely also on the dividing line between the rational actors and the irrational, mindless voices who are unable to speak responsibly, to make rational choices and hence forfeit their right to choose (Foucault 2007, 65-66). As long as one can judge on the current European documents on disinformation, that dividing line will increasingly define the realm of rational discourse and, just as the borders of the European market, is going to be constituted as a frontier, a frontline that has to be protected by an apparatus of information security waging an endless war against conspiracy theories and fake news.

3.3. Unintended effects

3.3.1 General effects

If the Green Deal succeeds, the ecological crisis will be averted and the European economy will enjoy explosive growth, perhaps comparable to the growth generated by the reconstruction of public infrastructure after World War 2 (although many climate activists, including Greenpeace, criticize the deal that is not ambitious enough to cancel out global warming). Yet until the Green Deal succeeds, even if it fails, it will bring about important effects: it will create a new market, a market for environmental risks conquered by capital; on the new market, the entrepreneurs will be able to convert research and development of clean technologies into public subsidies, public investments and publicly guaranteed

credit; the technologies however will remain in private hands, they will be protected against competition as intellectual property, and since the technologies will be developed by public investment, the private property on them will amount to privatization of public assets, to a new wave of private enclosure of public goods, a new wave of accumulation of capital through dispossession (Harvey 1996, 91).⁶

The dispossession, however, will be indirect. Instead of enclosing public goods, it will generate inflation and public debt. The inflation will erode the value of labor and social benefits. The need to service the debt will stimulate austerity, particularly if growth fails to meet the expectations. The combined effects of inflation and austerity will make it necessary to limit the access to public goods. The governments can do that by curtailing social rights or by rejecting the demands of segments of the population such as migrants, foreign or precarious workers. As the postsocialist transition has demonstrated, however, the access to public goods can be more efficiently restricted by reinventing the governmental functions of the market (Foucault 1997, 373). If public goods are transformed into a market, the market will exclude the social groups that are unable to pay the cost of access, not only in monetary terms but also in terms of time, effort and knowledge. As long as such social groups are not excluded by a decision of the government, as long as the market is believed to be a mechanism of free and fair distribution of wealth, the curtailment of access will not constitute a discrimination or a violation of social rights, it will be as free and fair as market liberalism; the social rights of the excluded groups will not be denied, they will merely turn into manifesto rights that cannot be actually enforced. The operation of the market as a mechanism of exclusion can be further refined if it provides a differential access to public goods reflecting the different capital of the social actors. Then the access will be stratified in a manner that reflects social inequalities. The postsocialist reforms of healthcare or education provide a good illustration of the function of the market as a mechanism of unequal distribution of public goods: the socialist state recognized universal

⁶ A detailed analysis of dispossession caused by EU-funded renewable electricity projects in India see in (Dwivedi and Munshi 2021).

rights of free access to healthcare and education that is still enshrined in the Bulgarian constitution; in the 1990s, both rights have been transformed into markets that effectively exclude the lower classes and provide services of graded cost reflecting the different purchasing power of the social actors; the stratified access to healthcare and education has brought about a graduated distribution of health and unemployment risks condensing in the case of minorities, unskilled workers, rural areas, and elderly.

Under the combined pressure of austerity, deindustrialization and inflation, the future market of environmental risks can bring about similar effects. If the Green Deal conceives of clean environment as a public good and transforms it into a market, that can bring about social exclusion, stratification of the access to public goods, transformation of social entitlements into manifesto rights (in the sense of recognized but unenforceable rights) progressive condensation of excessive risks in social danger zones as the migrants, the city underclass, the rural or the underdeveloped regions. The funds allocated to just transition will be hardly able to compensate for that because they are currently intended for alleviating energy poverty and lowering the costs of unemployment. Even if the just transition policies are extended so as to inject more purchasing power in the most vulnerable social groups, that will help the new markets run more smoothly, but it does not seem plausible to expect that it will remedy social exclusion, loss of social rights or deeply stratified access to public goods. It is perhaps because of this implausibility that the translator of the European Green Deal website into Bulgarian has made an unintentional mistake, a paraphrasis, and translated the slogan of just transition 'no one should be left behind' by 'никой не трябва да не бъде изоставен' ('no one should not be left behind').

3.3.2 European Twin Transition and the Socio-Economic Transformation of the Continent and the Region: What should be addressed in our curricula and teaching approaches to address the context?

The European Green Deal (EGD) was formally introduced in 2019 by the European Commission in order to simultaneously combat the devastating effects of climate change

across not only the EU, or the European continent, but across the globe as well.⁷ In terms of the economic scope, the EGD intends to mobilize at least €1 trillion over the next decade alone.⁸ Along with a wide range of measures and policies aimed at reducing emissions and bolstering innovation, the EGD also seeks to decouple the growth of the economy within the EU from resources, or, in other words, from resources which produce CO2 emissions, or emissions which themselves cannot be recaptured through various (although costly) technologies. This is all in an attempt to reach climate neutrality by 2050 and reduce emissions by 55% by 2030.⁹ The EGD is also directly tied to the concept of the circular economy, and the EU single market, including the digital market, and attempts to both grow the EU economy, while creating larger forms of economic and social equality in line with the 20 principles of The European Pillar of Social Rights. The EGD is thus inextricably tied up with a massive digital transformation, which is meant to usher in a new form of industrial revolution, which in turn is meant to lead to sustainability, growth, and equality.

To determine the viability and equity of the EGD, there are several key aspects to consider. Firstly, there is the raw cost, or in other words, the total amount budgeted and in proportion to the change meant to achieve. As we have already stated, there is a least €1 trillion which will be mobilized over the next decade alone. While this number itself is rather large, the immense cost of transforming the EU economy as a whole will inevitably take much more than this, especially considering the price of carbon capture technologies alone, which constitute a tiny fraction of the total cost of the deal.¹⁰ However, it should be noted that the

⁷ See: European Commission: 2019: Communication from the Commission to the European Parliament, the European Council, the council, the European Economic and Social Committee and the Committee of the Regions the European Regions: The European Green Deal, URL: <https://eur-lex.europa.eu/resource.html?uri=cellar:b828d165-1c22-11ea-8c1f-01aa75ed71a1.0002.02/DOC_1&format=PDF>

⁸ European Commission: 2019: Communication from the Commission to the European Parliament, the European Council, the council, the European Economic and Social Committee and the Committee of the Regions the European Regions: The European Green Deal, URL: <https://eur-lex.europa.eu/resource.html?uri=cellar:b828d165-1c22-11ea-8c1f-01aa75ed71a1.0002.02/DOC_1&format=PDF>

⁹ European Commission: 2021: European Green Deal: Commission proposes transformation of EU economy and society to meet climate ambitions, URL: <https://ec.europa.eu/commission/presscorner/detail/en/IP_21_3541>

¹⁰ See: International Energy Agency: 2021: Is carbon capture too expensive?, URL: <<https://www.iea.org/commentaries/is-carbon-capture-too-expensive>>.

EC itself has pledged to revisit the budget. Perhaps more pressingly in this regard, as of 2019 there were not even enough projects to fulfill the budgeted demands, which is likely the result of a certain reticence on behalf of EU members to immediately begin the economic transition, especially those countries who are more economically reliant on fossil fuels.

Secondly, there is the issue of the source of the money, which is not without contention. Currently, about 500 billion is coming directly from the EU budget, and a large portion of the remainder is coming from Invest EU. According to a recent Guardian article, countries such as France and Germany, however, are incredibly reluctant to have a large joint-borrowing fund such as the one established during the Covid-19 pandemic, with Germany arguing for national subsidies according to their own regulations.¹¹ Likewise, the European Climate Law itself does not lay out any specific way in which the money must be spent, rather focusing on emissions themselves.¹² Already here, we can begin to see some of the fractures occurring amongst differing EU member states, and it should not be seen as at all surprising that two of the largest economies in Europe would prefer a scheme which would allow them to monopolize on the single market. This already calls into question the economic equity of the deal. However, the EGD does have mechanisms in place, such as the Just Transition Fund (JTF)¹³, and the Social Climate Fund, which are meant to combat inequalities between the member-states, and those most affected by the transition, including women and the economically disenfranchised. While these sorts of mechanisms are crucial, it is unclear at this point whether it will be nearly enough. This is especially true as the JTF itself, according to Matthias Ballweg et al., has also been heavily cut.¹⁴ Likewise,

¹¹ See: <https://www.theguardian.com/commentisfree/2023/feb/03/joe-biden-green-deal-eu-joint-climate-fund>

¹² European Commission: 2021: Regulation (EU) of the European Parliament and of the Council of Establishing the Framework for Achieving Climate Neutrality and Amending Regulations (EC) No 401/2009 and (EU) 2018/1999 ('European Climate Law'), URL: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32021R1119&from=EN>

¹³ See: European Commission: 2020: The European Green Deal Investment Plan and Just Transition Mechanism explained, URL: https://ec.europa.eu/commission/presscorner/detail/en/qanda_20_24.publihsed and European Commission: The Just Transition Mechanism: making sure no one is left behind, URL: https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/finance-and-green-deal/just-transition-mechanism_en

¹⁴ Matthias Ballweg, et al.: A System Change Compass: Implementing the European Green Deal in a time of recovery (2020), <https://clubofrome.org/wp-content/uploads/2020/10/System-Change-Compass-Full-report-FINAL.pdf>, 29.

the European Commission has also made a proposal (also contentious) for a “Fair Taxation of the Digital Economy,” which would see digital profits taxed in the countries in which they were extracted. For instance, streaming services, and social media companies that use data-mining for advertisements would be taxed in those countries in which the streams took place and data was extracted and sold. However, these taxes would not function on a percentage base, but rather on raw numbers of streams, or capital acquired, meaning that smaller economies would be at a disadvantage.¹⁵

Thirdly, and of crucial importance, there is the economic cost-benefit analysis in relation to both GDP and employment rates across the various member states, and thus also the issue of the varied effects of the measures on various economies in relation to their size, energy outputs, and economic drivers. All of this is directly tied to the mass digitalization and automation of the economy.

While the digitalization of society is a crucial and necessary step forward, and has a whole host of beneficial factors, it is nonetheless true that both economically and sectorally the relation between digitalization and the circular economy are not so straight forward. For instance, while digitalization techniques can be used in the construction sector to streamline and create more energy efficient and smart buildings, while simultaneously bolstering and creating new jobs in the digital sphere, it also displaces massive amounts of jobs within the same sector, through automation and advanced technologies, with an estimated 200,000 jobs being lost.¹⁶ Likewise, it is estimated that by 2030 there will be a 10% decrease in low-skilled labour job opportunities.¹⁷ Indeed, the construction sector is only one of many examples which will see mass decreases in employment rates. This is

¹⁵ See: European Commission: Fair Taxation of the Economy: URL: https://taxation-customs.ec.europa.eu/fair-taxation-digital-economy_en

¹⁶ European Commission: 2020: Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: A New Circular Economy Action Plan for a Cleaner and More Competitive Europe, URL: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2020%3A98%3AFIN>, 43.

¹⁷ Ibid., 62.

incredibly important to note when considering that the largest increase in jobs is meant to occur in the waste-management (WM) sector, which itself is in the process of being massively automated, with new and more efficient technologies, such as optical sorters, being introduced that can sort recyclables at nearly 4 times the rate of a human per minute.¹⁸ This also points directly to the discrepancy between employment and GDP. According to the “ambitious model” of the EC, GDP is meant to substantially rise across all member-states, yet, countries such as Slovakia and Croatia are predicted to still see actual decreases in employment rates despite this, and despite the fact the EC’s reports only marginally touch on and account for the rise in automation in the WM sector, meaning unemployment rates could rise more significantly than expected, regardless of GDP.¹⁹ It is worth noting here too that while EU unemployment rate has fallen over the last year, that it still sits, according to Eurostat, at 6.1% (their statistics will be updated on March 2nd 2023).²⁰ In order to combat this, the EC, in alignment with the world bank,²¹ has placed an increased emphasis on education, which also means an increase in the precarity of work (as labourers will need to constantly re-educate), and will also likely lead to massive amounts of brain drain, which is currently already occurring in many areas of Europe, especially those with weaker economies. This does not mean that digitalization and education are not crucial for economic, ecological, and democratic reasons. For instance, Estonia itself, a digital leader in Europe, is projected, according to the EC, to see the largest rise in GDP, and which, according to the EESC has already managed to save 2% of its GDP from simply changing from physical to digital signatures for its documents.²² Likewise, this digitalization allows Estonia to boast one of the highest tax collection rates in the world, and has allowed for more democratic transparency.²³ However, it does mean that it is

¹⁸ EU Automation: 2019: Can robots help us recycle? URL: <<https://www.euautomation.com/en/automated/article/can-robots-help-us-recycle>>

¹⁹ European Commission, A New Circular Economy Action Plan, 42.

²⁰ Eurostat: 2022: Unemployment Statistics, URL: <https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Unemployment_statistics#Unemployment_in_the_EU_and_the_euro_area>

²¹ See: World Bank: World Development Report 2019: The Changing Nature of Work, URL: <https://documents1.worldbank.org/curated/en/816281518818814423/pdf/2019-WDR-Report.pdf>

²² European Economic and Social Committee Employers’ Group: 2017: Advantages of digital society, URL: <<https://www.eesc.europa.eu/sites/default/files/files/qe-06-17-193-en-n.pdf>>, accessed 18 June 2023.

²³ Ibid.

necessary to decouple mere GDP from the real economy, and insist on necessary safeguards against not only brain drain, but general unemployment and precarity as well, as the creation of new industries does not necessarily lead to an increase in employment, nor job security (especially when considering Europe as a whole).

It should also be added here that the size of an economy directly impacts its ability to deal with the transition, as much of the costs can be offset by work projects and the production of constant capital, such as the production of: charging stations, factories, alternative energy generators (such as wind-mills, solar panels etc.), and the re-equipping/upgrading of already existing factories and homes, meaning that smaller economies are again at a disadvantage during the transition. Again, while mechanisms such as the JTF are meant to mitigate this, the extent to which it will allow for anything near equal footing is still in question, especially when considering that the Social Climate Fund (which is focused on mitigating costs regarding buildings and road transport) states that member-states should finance at least 50% of the total cost of their own climate plans.²⁴

Fifthly, there is the direct issue of capital fixes, or the reliance of cheap labour both from those nonmember and candidate states who are still on the continent, as well as countries outside of Europe as such. While the EGD has strong economic and ecological aspirations for member-states, it is entirely more ambiguous what the result will be for non-EU countries. As said previously, the circular and increasingly automated economy itself shows that there is a mass decrease in demand for labour jobs, especially non-skilled labour jobs. Simultaneously, however, EU member states are still relying on this very same unskilled labour for lots of the production itself. For instance, a large Tesla plant being built just outside of Berlin is massively dependent on importing cheap labour from countries in Eastern Europe, with little regard for labour rights (with Tesla rushing the project in order to

²⁴ European Commission: 2021: Regulation of the European Parliament and of the Council: Establishing a Social Climate Fund, URL: < https://eur-lex.europa.eu/resource.html?uri=cellar:9e77b047-e4f0-11eb-a1a5-01aa75ed71a1.0001.02/DOC_3&format=PDF>, accessed 18 June 2023.

skirt protections otherwise afforded by unions). According to an article in *Jacobin*, “in order to meet the demand for cheap labor from Eastern Europe, the Brandenburg Employment Agency is setting up a special office on the Gigafactory’s site to help Tesla recruit workers for its round-the-clock service.”²⁵ This is entirely disconnected from what the EGD apparently purports to stand for, and also directly goes against The European Pillar of Social Rights. Likewise, European countries outside of the EU will be immediately placed at a point of economic disadvantage in regards to the EU in terms of development. Similar issues can be seen on a more global level through the EGD’s emphasis on entirely moving away from non-electric vehicles, with a recent proposal (Feb 14, 2023) suggesting that all new city buses will be “zero-emission” by 2030.²⁶ However, these batteries are entirely reliant on rare earth elements (REE), primarily lithium and cobalt, which are in turn generally taken from poorer and less equitable countries, with the majority of the world’s cobalt coming from the DRC, and the majority of lithium coming from Argentina, Bolivia, and Chile.²⁷ In the DRC alone, according to recent estimates, there is at least 40,000 child labourers involved in the extraction process.²⁸ Likewise, these countries do not only have looser labour laws, but ecological laws as well, allowing the EU to essentially offshore its carbon footprint. While devastating the environments of other countries, countries who are in fact most effected by climate change, and are at highest risk to become climate refugees, which in turn could heavily impact global economies and supply chains (just as the crises in Ukraine already have). As a 2010 report on the decoupling of resources from economic growth, which was supported by the UNEP and the International Resource Panel, points out, if production does not radically change in the developing world, and they

²⁵ Peter Schadt and Hans Zobel: 2022: Elon Musk’s Gigafactory Shows the Hollowness of Green Capitalism, URL: <http://jacobinmag.com/2022/03/elon-musk-gigafactory-berlin-green-capitalism-climate-program-environment-electric-car?fbclid=IwAR1vsuWrnn_nBNeAQFS5sWrSY7sASeP1YpcCNsXcZcA3YS-IW-SfFxxVhOY>

²⁶ See: Regulation of the European Parliament and of the Council: Amending Regulation (EU) 2019/1242 as Regards Strengthening the CO₂ Emission Performance Standards for new Heavy-Duty Vehicles and Integrating Reporting Obligations, and Repealing Regulation (EU) 2018/956, URL: <https://climate.ec.europa.eu/system/files/2023-02/policy_transport_hdv_20230214_proposal_en_0.pdf>

²⁷ Automotive World: 2020: Risky business: The Hidden Costs of EV battery Raw Materials, URL: <<https://www.automotiveworld.com/articles/risky-business-the-hidden-costs-of-ev-battery-raw-materials/>>

²⁸ Koen Binnemans, et al: 2021: Rare-earth recycling needs market intervention, URL: <<https://www.nature.com/articles/s41578-021-00308-wr>>

continue to increase production and industrialization in order to economically compete with more developed nations, it could lead to doubling biomass use, and quadrupling fossil fuel use by 2050.²⁹ This offshoring is also very prevalent in the Agricultural and Food sectors, despite what the EC claims in their Farm to Fork Strategy³⁰, and which can be seen clearly in a recent article by Richard Fuchs in *Nature*,³¹ as well as in a 2022 study by Erasmus K. H. J. zu Ermgassen et al. on Brazil’s deforestation and Beef exports.³² While this can be slightly offset by relying on REE’s available in countries such as Sweden, Finland, and Spain, this is nonetheless non-sufficient. From a purely economic angle, it should also be noted that due to the increase in demand for electric batteries—it is projected that the burgeoning market for the batteries will rise from “US\$30 billion in 2017 to \$100 billion in 2025,³³ and that by 2035 more than “half of new passenger vehicles sold world-wide will be electric”³⁴— that their price has drastically dropped, making it in fact cheaper to produce new batteries than it is to recycle them.³⁵ Indeed, according to a 2021 BBC article, only approximately 5% of electric car batteries are recycled worldwide.³⁶ This places the EU in a position where in order to achieve its goals (and increase jobs and GDP output through recycling facilities) it must rely on heavy taxation to avoid this, however, depending on how this is carried out, it could also put them at a disadvantage in regards to other economic powerhouses undergoing Green Transitions such as the US. The EGD and the EU are thus at

²⁹ Marina Fischer-Kowalski et al., Decoupling Natural Resource Use and Environmental Impacts from Economic Growth (2011): URL: < <https://www.resourcepanel.org/reports/decoupling-natural-resource-use-and-environmental-impacts-economic-growth> >

³⁰ European Commission: 2020 : Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: A Farm to Fork Strategy for a fair, healthy and environmentally-friendly food system, URL: <<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020DC0381>>

³¹ Richard Fuchs, et al: 2021: Europe’s Green Deal Offshores Environmental Damage to Other Nations, URL: <<https://www.nature.com/articles/d41586-020-02991-1>>

³² Erasmus K. H. J. zu Ermgassen et al.: 2020: The Origin, Supply Chain, and Deforestation Risk of Brazil’s Beef Exports, URL: <[https://www.pnas.org/doi/10.1073/pnas.2003270117#:~:text=Brazil%20is%20the%20world's%20second,feedlots%20\(13%E2%80%9315\)>](https://www.pnas.org/doi/10.1073/pnas.2003270117#:~:text=Brazil%20is%20the%20world's%20second,feedlots%20(13%E2%80%9315)>)>

³³ Nature: 2021: Lithium-ion batteries need to be greener and more ethical, URL: <https://www.nature.com/articles/d41586-021-01735-z>

³⁴ Nature: 2022: Electric cars and batteries: how will the world produce enough? URL: <https://www.nature.com/articles/d41586-021-02222-1>

³⁵ Richard Fuchs, et al., Europe’s Green Deal.

³⁶ BBC News: Electric cars: 2021: What will happen to all the dead batteries? URL: <<https://www.bbc.com/news/business-56574779>>

a critical juncture, which can only be resolved through an emphasis on the real economy, which takes into account the various cross-sectoral displacements which arise from the deal. The EGD and European Climate Law must also fully expand to incorporate those countries on the periphery of Europe, as well as non-member states in order to achieve an equal transition. Likewise, long-term dependency on REEs does not appear as either economically, nor environmentally, sustainable. Meaning that even greater moves towards diversification are necessary. It is not enough to simply decouple growth and the economy from resources, how the economy functions as a whole, and how it relates to those more marginalized must be heavily emphasized.

4. REGIONAL PERSPECTIVE EMBEDDED IN THE WIDER EUROPEAN PERSPECTIVE

In the literature overview we have included the documents that illustrate N. Macedonia's policy context as part of its overall reform processes of alignment with the European Acquis in the areas of digitalization and the green transition. Several ministries have implemented complete digitalization of their services, the most developed being the Ministry of Justice, the Ministry of Finances (in particular its key institutions such as the Public Revenue Office, and the Central Registry). Sadly, the Ministry of Science and Education is lagging in a truly worrisome manner as well as the legislative setup in the area of higher education, affecting precisely the issue of mobility, be it physical or digital. We argue that a minimal digitalization in ECTS qualifications and degree recognition will open the country both to foreign students as well as to nationals that are potential returnees. Quite to the contrary, our analysis of the Macedonian Law on Higher Education adopted in 2018, which deprives the HEI's (higher education institutions) from conducting recognition and equivalence for academic purposes laying all authority into the hands of the Ministry (the ENIC/NARIC center being merely its department), is fully "analogue." One needs to be physically present to submit a recognition request, along with all the physical copies of the documents notarized, apostilled, including the originals, etc. There is no procedure that can be initiated or completed from abroad and no digital form of submission, check, and at least preliminary recognition so that the potential student's trip and the shipments of the

originals make sense and do not pose unnecessary risk and cost to the applicant.³⁷ Here, we would say, digitalization itself is the precondition for proper implementation of the Bologna Process, as well for opening up toward the rest of EHEA (European Higher Education Area) and allowing for mobility of students, academic staff and labor, as well as advancing distant learning and employment as a mode of networking, internationalization and digital mobility. We argue that the digital mobility should complement not supplement physical mobility, even accelerate it. In 2020, two thirds of the population above 16 had daily access to the internet, most of them via phone, whereas thanks to the fact that since 2014 TV in N. Macedonia is only digital and via broadband (each household with a TV set receives it through broadband internet and thus has access to broadband and highspeed internet).³⁸ This is a potential for fast adjustment to the digital economic and social transformation should the right policies be put in place.

The digital transition in Bulgaria is currently in its initial stage. The relevant strategic documents of the Bulgarian government declare that 2/3 of the labor force lacks digital skills (Council of Ministers 2020, 15), most users limit their activity to social media and online calls (Council of Ministers 2017, 13), only 6% of the companies sell their products online in the country, and only 3% are active on the global markets (the EU average is 17%, Council of Ministers 2022, 80); additionally, in 2020 85% of the households lacked access to broadband and 41% to high-speed internet (the EU average is respectively 66% and 23%; Council of Ministers 2022, 134). The government of Serbia is planning to address the challenges of digital transition by investing in infrastructure, by providing support for upskilling and by relaxing the regulation of start-ups. One major concern is the potential for the digital divide to widen, particularly between urban and rural areas and between different socio-economic groups in the wider region of Western Balkans. The high cost of digital infrastructure and

³⁷ Katerina Kolozova, *De-Capturing Academia, Combatting Braindrain* (Skopje: ISSHS, 2022).

³⁸ Снежана Трпевска, *Мапирање на нивоата на медиумска писменост во Република Северна Македонија кај популацијата на возраст над 16 години* (Организација за безбедност и соработка во Европа – Мисија во Скопје, 2020); North Macedonia Ranked 25th for Fastest Internet in the World, available at <https://www.speedtest.net/global-index/north-macedonia>.

devices, as well as the lack of affordable and reliable internet access, could lead to further marginalization of already vulnerable groups.

At this point, it is difficult to predict the effects of digitalization on the labor market. Thus we will limit the discussion to three hypotheses: (1) It seems plausible to expect that digitalization will develop at an incongruous pace in different sectors. It will probably be slower in labor-intensive sectors such as agriculture due to the dispersed ownership of land impeding the large-scale investments necessary for the transition to smart farming. (2) Additionally, the efficiency of many enterprises depends on bricolage to which the future AI can turn out to be incapable.³⁹ (3) Even if we assume that a significant share of the work tasks will be automated by 2040, the earliest moment of time predicted by experts (Roser 2023), the effects of automation will be ambiguous. Perhaps automation will shrink the available jobs. From the perspective of the employer, however, the price of labor essentially amounts to the costs of replacing the laborer. The automation of production will open up jobs that require a significant investment in upskilling, and such skilled workers will be more difficult to replace. Furthermore, work in an automated environment is going to require intense alertness (Negri and Hardt 2001, 423) that can lead to a faster amortization of the labor force. Due to the combined effect of decreased supply and increased amortization, one can expect the price of skilled labor to rise. That can have unpredictable effects on the Bulgarian labor market which is currently shaped by the pressure of a substantial reserve army of labor pushing the price of unskilled labor below the costs of reproduction of labor power. If the digital transition shrinks further the labor market and increases the cost of entry due to the increased demand for human capital requiring a substantial investment in education and skills, that can additionally increase the economic overpopulation and bring down the price of unskilled labor to a point at which employment will become irrational, or it can even amount to a self-sacrifice on the part of the workers. In

³⁹ We conceive of bricolage as a surplus of labor that is not associated with pre-designed equipment, stable procedures or fully defined functions and hence produces situated, tactical innovations (for example, one of the crucial advantages the Bulgarian international transport is the ability of the drivers to maintain and repair typical problems in their trucks by themselves which saves a considerable amount of time and money to the companies).

effect of the digital transition, however, the reserve army of labor will be actually working, it will be reproducing its labor force, in the process of its reproduction the surplus population will be producing consumption without which the markets would come to a halt, and it will be producing life that will sediment as a general intellect commodified and marketized as AI technologies. If that turns out to be the case, digital transition will actually lead to increasing exploitation of labor that, precisely because of being devalued, will produce commons that will be enclosed, privatized and alienated by the digital companies. In effect, digital transition will deepen the exploitation of labor, and generate poverty and precarity that will be only partially compensated even by a universal basic income. However, it is important to note that digitalization of public administration is a EU long term strategy, accelerated by the European Green Deal as it is seen as the other side of the coin of combatting climate emergency. It removes the unnecessary carbon footprint from a sector that is not economically productive. Namely, public administration “services” should be treated more as commons easily accessible to anyone than service proper. Its digitalization does not need to entail unemployment as long as there is labor demand in the productive sector. Bulgaria, North Macedonia and Serbia are at a similar level of digitalization as Greece, but we will present the Greek case as one of the oldest member state represented in the EIDE consortium.

From the point of view of the State and the public administration

Digital transformation has been one of the key promises of all governments in the current millennium. In the 2000s, however, there was little implementation of projects in this area. It was mainly limited to the creation of Information Society SA which has as its main objective 'the implementation of Information and Communication Technologies (ICT) projects in the public sector, as well as state aid actions in ICT, assisting in the implementation of the Digital Transformation Bible in Greece. The company participates institutionally in the specialization of the digital strategy of the country, implements ICT projects financed by the EU Structural and Investment Funds, the Public Investment Program, the Recovery Fund, or through Public-Private Partnerships, supports the

identification of needs in ICT projects and provides specialized support to organizations throughout the life cycle of the ICT projects they have been called upon to implement." This was followed by the digitization of the ERT archive, and in a particularly problematic way. The digitized archive was open access; however, Greek citizens could not download the material and use it to create derivative works. For this to happen, citizens had to obtain specific licenses, often for a fee. This meant that citizens had to pay again for something they had already paid for through taxation.

The most important breakthroughs regarding digital transformation started to take place with the beginning of the economic crisis, from the 2010s onwards. Since the causes of the crisis were primarily attributed to the irrational structure of the public sector and its redundant staffing, the main digital transformation actions focused on the creation of the Diavgeia platform, which is described as follows: "The Diavgeia Programme (Law 3861/2010) aims to achieve the maximum possible publicity of government policy and administrative activity, to ensure transparency and to consolidate responsibility and accountability on the part of the bodies exercising public authority." Similarly, the tax administration has been digitized through the Taxisnet platform. This was followed a few years later by the construction of digital platforms relating to social security. In 2015, the Ministry of Digital Policy, Telecommunications, and Information was established for the first time, which was later renamed the Ministry of Digital Governance. During the COVID-19 pandemic, digitization processes were intensified. According to Gov.gr, the single digital portal of the public administration, dozens of projects in many sectors are currently being implemented or are about to be launched as part of the digital strategy. While digital transformation has served as a focal point of the current government's rhetoric, and while some projects have been well received by citizens (especially those that have helped bypass face-to-face presence in public services and thus overcome bureaucracy), according to the Digital Economy and Society Index (DESI) 2022, Greece is ranked 25th out of 27 EU Member States.

Serbia's lens and specific context are discussed further in this same chapter, embedded in the discussion on the Western Balkans, where there is more details analysis of the Macedonian context as well. As for the regional aspects of the Green deal, North Macedonia is linking it with the digital transition but there is significant gap between legislation (cited in the literature overview below) and implementation. As the European Union develops its strategy for a Green Deal that would prepare its members for a transition to a more sustainable economy, some key assumptions and mechanisms for economic development are bound to repeat and exacerbate the damages from past transitions. Most importantly, these mechanisms deepen a course of social transformation the beginning of which was set through the 1989 Transition to free market capitalism in the East. We are narrowing down the regional focus on Western Balkans themselves, through the lens of Serbian perspective, which should be read combined with the input on North Macedonia already given, while keeping in mind that N. Macedonia has been an EU accession state for almost a decade longer (since 2005) than Serbia and its alignment with the Acquis is far advanced. However, Serbia has been negotiating much longer than N. Macedonia (namely in 2012). Nonetheless, in terms of level of EU integration, the situation in the two countries is not significantly different. Thus, this input is on Western Balkans is indeed indicative of the administrative region as part of the wider SEE region.

4.1. The Western Balkans Common Regional Market and Labor Automation

Efforts to enhance regional economic integration in the Western Balkans have been ongoing for several years, with the establishment of a Common Regional Market being agreed upon by the leaders of the Western Balkans in 2020. Serbia has been an active participant in regional cooperation and integration efforts, but it remains very difficult to determine its progress towards achieving the goals of the Common Regional Market.

Serbia has a long history of engagement with regional economic integration efforts, including membership in the Central European Free Trade Agreement (CEFTA) and the Regional Cooperation Council (RCC). The Western Balkans Common Regional Market is supposed to

build on these efforts. Aim of digital integration should be to create a more seamless and integrated regional market with common rules and regulations. Main idea that stands behind the Common Regional Market is that it provides a framework for the creation of a unified regional market, including the creation of a single customs union, the elimination of non-tariff barriers to trade, and the harmonization of regulations and standards across the region. So the question remains - Has Serbia made (significant) progress in this process? That would include goals such as the harmonization of laws and regulations with those of other participating countries, the establishment of regional investment funds and business associations, and the facilitation of cross-border trade and investment.

The Common Regional Market claims that it has already resulted in tangible benefits for Serbia, including increased trade and investment flows with neighboring countries, and improved access to regional infrastructure and markets. However, challenges remain, such as the need to improve infrastructure and reduce non-tariff barriers to trade.

While the Common Regional Market initiative is still in the process of being implemented, there have been some early indications of tangible benefits for Serbia, such as increased trade and investment flows with neighboring countries and improved access to regional infrastructure and markets. However, it is important to note that these benefits are not necessarily solely the result of the Common Regional Market initiative, as there are many other factors that can affect trade and investment flows and regional integration.

Nonetheless, there are also challenges that need to be addressed in order to fully realize the potential benefits of the initiative, such as the need to improve infrastructure and reduce non-tariff barriers to trade. Improving infrastructure, such as road and rail networks, is crucial for facilitating cross-border trade and investment, while reducing non-tariff barriers to trade, such as differing technical standards and regulations, can help to create a more seamless and integrated regional market.

Overall, while there have been some tangible benefits for Serbia from the Common Regional Market initiative, continued efforts and collaboration will be needed to address the challenges and fully realize the potential benefits of regional economic integration in the Western Balkans.

So, Serbia's integration with the Western Balkans Common Regional Market and the EU Single Market has been a long-standing goal for the country's government and economy. However, progress towards achieving deeper economic integration has been slow and hindered by a range of factors. We should highlight the main obstacles and challenges that have impeded its success in order to think of a way to make them better.

4.1. Possibilities?

To mitigate these risks and ensure sustainable development, Western Balkans, but also major parts of Southeast Europe (SEE), should focus on leveraging automation technologies to enhance productivity and competitiveness. By investing in research and development (R&D), fostering innovation, and promoting the acquisition of advanced technical skills, Serbia can position itself as an attractive destination for higher value-added industries. Investing in R&D is crucial for developing and implementing automation technologies tailored to specific needs and industries of the EU accession countries and Western Balkans as a whole. By allocating resources to R&D projects, Serbia and North Macedonia, as well as the entire region of SEE, can drive innovation, create new opportunities, and enhance its overall competitiveness in the global market. This investment should be accompanied by policies that support collaboration between academia, research institutions, and businesses to facilitate the transfer of technology and knowledge.

Furthermore, fostering innovation is key to unlocking the full potential of automation in the region. Encouraging entrepreneurship, supporting startups, and providing incentives for companies to adopt automation technologies can stimulate economic growth and diversification. Promoting a culture of innovation can also help attract foreign direct

investment (FDI) in high-tech sectors, leading to the creation of high-quality jobs and the transfer of advanced technologies.

A critical aspect of Region's (SEE including WB) transformation should be the development and implementation of comprehensive education and vocational training programs. These programs should focus on equipping the workforce with the necessary skills for the jobs of the future, which will increasingly require advanced technical knowledge and adaptability. By investing in education, SEE can ensure that its workforce remains competitive and resilient in the face of automation. Our concern here about increased social inequality and job displacement is valid, in particular when it comes to WB and SEE. To address these concerns, it is crucial to implement appropriate mitigation measures. This includes establishing mechanisms for retraining and upskilling workers whose jobs are at risk of being automated. By proactively identifying and supporting affected individuals, one can minimize the negative impacts of automation and ensure a smoother transition to new employment opportunities, but also by way of equipping the population to join the new industry of the era of digital transformation.

Over the next decade, automation is expected to advance rapidly in Europe. Technological advancements, such as artificial intelligence, robotics, and automation systems, will drive automation adoption across various sectors. While the exact consequences are uncertain, projections suggest that automation could lead to job displacement, particularly in industries involving routine and repetitive tasks. However, automation also has the potential to create new jobs, particularly in fields requiring advanced technical skills and creativity. According to recent analyses, the automation and robotization of various job sectors are anticipated to render hundreds of thousands of individuals unemployed in the forthcoming decades. Whether this development will result in a surplus of free time or a surplus of people depends primarily on the overall nature of our political and social systems. Presently, one proposed solution to address potential unemployment caused by technological advancements is the reduction of working hours to six hours or less. However, if this

reduction is accompanied by a corresponding decrease in wages due to fewer working hours, it could lead to individuals seeking multiple employments, potentially resulting in work overload once again. Nevertheless, this outcome is not guaranteed either, as it remains uncertain whether existing economic systems, built upon their current foundations, can generate job opportunities that align with the hypothetical new demand.

The automation of labor in Europe presents a dual landscape of opportunities and challenges. The Region of Western Balkans should concentrate on its own transformation processes. By investing in research and development, nurturing innovation, and promoting education and vocational training, the Region (SEE and/including WB) can bolster its productivity and competitive edge. To avoid becoming a destination for low-cost physical labor, the Region of SEE must prioritize the acquisition of advanced technical skills and position itself as an appealing hub for industries that offer higher value-added. By proactively addressing the potential implications of automation, Serbia can chart a course toward sustainable and inclusive socio-economic development.

It is vital to emphasize that maintaining the connection between living standards and employment is crucial to prevent our societies from acquiring dystopian characteristics. This scenario would entail a minority engaged in high-tech and highly productive work at one end of the social spectrum, while the "superfluous" masses would face exclusion from employment and subsequent marginalization in other aspects of society. The prospect of economic stagnation is becoming increasingly realistic. The swift and aggressive concentration of wealth from lower strata to upper echelons poses a significant obstacle to achieving a society with reduced work. The conditions for reshaping our world exist not only in terms of technological prerequisites but also because the current societal order lacks a cohesive vision of our desired destination and accomplishments.

2.3. The EU Single Market and the Integration of Western Balkans

One of the main challenges facing Serbia has been bureaucratic obstacles and delays, which have hindered the implementation of the necessary reforms to align with the common regional market's regulations and standards. In addition, Serbia has struggled to adopt EU regulations and standards, which are essential for deeper economic integration with the EU Single Market. Moreover, corruption and organized crime continue to be serious concerns, limiting Serbia's progress towards deeper regional cooperation and coordination.

The EU Single Market is one of the world's largest and most advanced markets, offering numerous opportunities for trade and investment. Serbia has been working towards integration with the EU Single Market since the 2000s, but progress has been slow and uneven. Accession to the EU Single Market is a key long-term goal for Serbia and North Macedonia, as it would provide access to a larger market and greater opportunities for trade and investment. One of the main challenges facing Serbia has been the slow pace of regulatory alignment, which has hindered its ability to compete with other countries in the region.

The agenda of EU-imposed "digital transformation" refers to the set of policies and initiatives aimed at promoting the adoption and use of digital technologies across various sectors in the Western Balkans region, including Serbia and North Macedonia. The EU sees digital transformation as a key enabler for economic growth and competitiveness on planetary scale, and as such, competing with players such as China and the US, it has been a major focus of the EU's enlargement strategy. The EU has identified digital transformation as a key priority for the region, recognizing the potential for digital technologies to drive innovation, productivity, and growth. Serbia has made some progress in this area, including the development of a national strategy for digital transformation and the establishment of a Ministry of Innovation and Technological Development. North Macedonia has also adopted a strategy covering the same area for the 2020-2025 period, which, in spite of constant reference to full digitalisation of all aspects of socio-economic life does not use the more recent rhetoric of digital transformation or twin transition (the strategy is cited below).

Based on the report for the year 2022, it has been determined that Serbia has made noteworthy progress in terms of the digitalization of public administration and has been ranked among the top 10 countries worldwide in this regard. Serbia's eGovernment Development Index (EGDI) has been rated as 'very high' and has surpassed other nations in the region, securing the topmost position in eGovernment. The country's ranking has significantly improved, climbing 18 places compared to the 2020 report, which marks the eighth-largest advancement in the global rankings. Currently, Serbia stands at the 40th position globally as per the index value. North Macedonia has been lagging, ranked 80.

One of the key objectives of the EU's digital transformation agenda in the Western Balkans is to promote the development of a digital single market in the region, which would facilitate cross-border e-commerce and online services. This would involve harmonizing regulations, removing barriers to trade and investment, and promoting the use of digital technologies to streamline and automate business processes. The EU has been pushing for a comprehensive digital transformation agenda in recent years, which aims to enhance competitiveness, innovation, and growth in the digital economy. Serbia has recognized the importance of digital transformation but progress towards this goal has been perhaps moderate, yet most advanced in the region of Western Balkans.

However, challenges remain, such as the need to improve digital infrastructure and increase digital literacy among the population. Additionally, the COVID-19 pandemic has highlighted the importance of digital technologies in enabling remote work and education, further emphasizing the need for investment in this area. A number of citizens have found the eGovernment portal to be a valuable resource, particularly during the COVID-19 pandemic, where some of the most frequently utilized e-services were related to testing, vaccination, certificate issuance, and health cards. The pandemic's pervasive influence on daily life over the past two years has resulted in many of the most popular e-services being pandemic-related, such as scheduling appointments for vaccinations or PCR testing and obtaining a

digital green certificate. The situation in North Macedonia is easily comparable, and one can say that throughout the pandemic N. Macedonia has been copying most of the Serbian policies including the use of digitalization which was remarkably successful once mass vaccination was underway. Limited progress in promoting innovation and entrepreneurship has hindered Serbia's and North Macedonia's potential to create new businesses and compete in the digital economy. Another important aspect of the EU's digital transformation agenda is the promotion of digital skills and literacy among the population. The EU recognizes that the adoption and use of digital technologies requires a certain level of digital literacy and skills, and as such, it has been investing in various initiatives aimed at promoting digital education and training.

So, while the EU's digital transformation agenda has the potential to bring about significant benefits for Serbia and the wider Western Balkans region, it is not without its challenges and criticisms.

Furthermore, there are concerns that the EU's digital transformation agenda could exacerbate existing socio-economic inequalities, particularly in terms of employment. The widespread adoption of digital technologies has the potential to automate and eliminate certain types of jobs, particularly those that are low-skilled and routine-based. This could lead to further unemployment and social exclusion, particularly for those who lack the necessary skills and education to adapt to the changing labor market. However, we have also warned that there is a possibility of developing the new EU and prospective EU member states into industries for cheap labor in tech, from coding to production of chips, and otherwise.⁴⁰

⁴⁰ This statement was made by two high ranking EU experts and advisors of the EU decision makers on digitalisation at the event of Berggruen Institute Europe, at 3-5 June 2023; statements were made under Chatham house rules. Thus they remain unattributed but they stand as one of the authors participated at the event.

In conclusion, the Western Balkans Common Regional Market has been promoted as a key factor in advocating economic integration and paving the way for the EU Single Market. However, the implementation of the market in Serbia has been slow and faced numerous challenges, particularly in regard to the agenda of EU-imposed "digital transformation". Despite the efforts to promote digitalization in the country, progress has been hindered by inadequate infrastructure, limited funding, and a lack of coordination between stakeholders. As a result, Serbia, N. Macedonia, Western Balkans and, as demonstrated [Bulgaria.. Greece?], i.e., the wider region of Southeast Europe, continues to lag behind the other EU countries. Moreover, the EU's approach to digital transformation has been criticized for being too prescriptive and neglecting the specific needs and priorities of the region. This top-down approach risks exacerbating existing inequalities and widening the digital divide between the EU and the Western Balkans.

To address these challenges, it is essential to adopt a more collaborative and inclusive approach to digital transformation, with a focus on building local capacity and developing tailored solutions that address the unique challenges faced by the region. This includes investing in digital infrastructure, promoting innovation and entrepreneurship, and improving digital skills and education. Overall, while the Western Balkans Common Regional Market holds great promise for promoting regional economic integration and alignment with the EU Single Market, progress will depend on addressing the significant challenges posed by digital transformation. By adopting a more collaborative and inclusive approach, the region can unlock the full potential of digitalization and realize the benefits of closer economic integration with the EU.

4.2. Automation in Western Balkans. the Region of SEE and the Context of Europe

This document aims to provide an in-depth analysis of the strategies and level of labor automation implementation in Europe, focusing on its impact on social inequality within the European Union (EU), but also within countries that are not members of EU. Specifically, it examines Western Balkans context, primarily through the lens of Serbia and North Macedonia, and its current position in relation to these strategies and socio-economic

transformations. Additionally, the document addresses concerns about Serbia potentially becoming a dumping ground for cheap physical labor, even if it is not an EU member.

Automation of labor has the potential to affect social inequality within the EU. On one hand, automation can boost productivity, economic growth, and create new job opportunities in industries associated with automation technologies. On the other hand, if not managed effectively, it may lead to job displacement and exacerbate existing inequalities. Automation often replaces routine and low-skilled jobs, while demanding higher skills from workers. This could result in a skills mismatch, leaving certain segments of the workforce unemployed or underemployed, as elaborated in detail. To mitigate these effects, investments in education and training programs are crucial to equip workers with skills for the jobs of the future. In contemporary times, the economic progress of nations is heavily reliant on their ability to embrace and adapt to digital transformation. This dependence has been further amplified by the advent of the internet and the advancement of information and communication technologies. With the arrival of Industry 4.0, conventional limitations such as time, geographical boundaries, and market size are no longer impediments to conducting business. Instead, these barriers have been transcended, thereby offering unprecedented opportunities for enterprises. By harnessing the power of information and communication technologies, the efficiency and effectiveness of business processes have experienced exponential improvement. As a result, the creation of business prospects and the attainment of operational success have reached an unparalleled level of ease and accessibility.

4.3. Serbia's and N. Macedonia's Position and Concerns

Serbia and North Macedonia, as EU negotiating countries, possibly full members by 2030,⁴¹ is actively undergoing its own socio-economic transformation. The country has made progress in certain areas, but it must be cautious about the potential risks associated with becoming a destination for cheap physical labor. The acquisition of comprehensive

⁴¹ European Parliament, Press Releases: A strengthened enlargement policy is the EU's strongest geopolitical tool (23 Nov., 2022), available at <https://www.europarl.europa.eu/news/en/press-room/20221118IPR55710/a-strengthened-enlargement-policy-is-the-eu-s-strongest-geopolitical-tool>, accessed on 20 Sept. 2023

information regarding the extent of digitalization across different sectors of the Serbian and Macedonian economies presents a significant challenge. Additionally, the scarcity of studies evaluating the impact of digitalization on the labor market further complicates the matter, leaving room for only indirect inferences. As an example, the ICT Cluster's report of Vojvodina, a province in Serbia, from the previous year disclosed that more than 10 percent of investments in information and communication technology (ICT) were concentrated within four sectors: manufacturing industry, information and communication, public administration, and activities of households functioning as employers and producers of goods and services for their own requirements. In addition to the widespread but unlawful practice of exceeding the standard eight-hour workday, there exists a legal framework that promotes flexibility in work arrangements and working hours, including the implementation of remote work. However, those familiar with these adaptations are aware that they often result in a reduction of genuine leisure time. The younger generation, predominantly engaged in freelance or non-traditional employment lacking the protection of conventional labor rights, bears the brunt of these changes. Attaining regular working hours may appear unattainable to them. The disparities and challenges associated with this issue are particularly amplified during and after the COVID-19 pandemic, with a specific focus on the burden of unpaid labor, which predominantly falls upon women. The increasing integration of digital technologies within organizations is evident through the growing involvement of IT personnel in traditional companies. According to data provided by the Infostud Group's "scanner," there has been a notable decline in the number of job positions advertised by employers primarily engaged in the information technology sector. Conversely, there has been an upward trend in the number of job advertisements for IT positions in other sectors, as highlighted in the press release issued by the initiative. Similar to other respondent groups involved in the study, a majority of traditional companies indicated that the COVID-19 pandemic had a detrimental impact on their sales of products and services. Notably, preliminary research findings revealed that even two-thirds of startups experienced a significant decline in sales exceeding 60 percent, while half of digital companies and freelancers witnessed revenue drops surpassing 30 percent.

On the other hand, the message from the Initiative highlights that only a mere 10 percent of actors in the digital economy are currently observing revenue growth. This suggests that the digital economy, despite initial anticipations, is encountering substantial challenges and adverse effects. Automation does not necessarily make work easier but rather serves to reduce labor costs, even though it may come at the expense of the sustainability of the entire economic model.

The primary goal of automation is often to increase efficiency and productivity by replacing human labor with machines or software systems. While this can lead to increased profits for businesses and potentially lower prices for consumers, it can also result in job displacement and income inequality. It is crucial to consider the broader implications and effects of automation on the workforce and society as a whole, including the need for sustainable economic models that address the potential challenges posed by widespread automation. According to French sociologist Henri Lefebvre, the essence of the true reality lies within the ordinary and non-mysterious aspects of everyday life. He contends that everyday life is paradoxical in nature, as it is both inherently evident due to its daily occurrence and yet challenging to comprehend, analyze, and derive meaningful insights from. Through depictions of the lives of workers, it becomes apparent that the authentic reality of their circumstances can be better apprehended and comprehended through an exploration of their everyday experiences rather than relying solely on statistics, legal frameworks, and similar sources.

5. THE COMPLEXITIES BEHIND THE EUROPEAN TECHNO-OPTIMISM

The first two sections of the report describe the imaginary horizon of Transition in post-socialist context and in the context of the Green Deal. The third section summarizes the main features of the emerging market of environmental risks. The following sections discuss the function of the market as a security apparatus, the nexus between green and

digital transition, and the regime of subjectivation that should support the shift to clean energy. The last section suggests hypotheses about the general and the local effects of the green transition with a special emphasis on upskilling and outsourcing in the IT sector.

5.1. The logics of Transition with a capital T

The notion of transition established in the aftermath of 1989 is still a powerful motor of imaginaries that determine the limits of political action. Srećko Horvat and Igor Štiks (2012) talk about “the desert of transition” – the notion of transition as a purgatory that has to be endured and suffered through in order to get to the other side, a story similar to the wandering of Moses in the desert and the suspended temporalities of cleansing and perish on the journey to the “promised land” of capitalist prosperity.

Conceived thus, Transition works not just as a series of social, political, and economic transformations but also as a discursive tool that shapes and limits ideas of justice in the post-socialist world by mobilizing the ghost of “zombie socialism” (Chelsea and Druță 2016) as a scarecrow and explanatory framework for any failures of the new regime. Moreover, the narrative of Transition negates the transiency of all instances of political consensus, shared horizons, and political programs and hence, last but not least, blocks out the notion of “transitions without a telos” (Mezzdra 2011) where struggle, renegotiation, and contestation are still possible.

In short, Transition works through erasure, denial, and the tyranny of an idealized model, which are exercised both through discursive power and through the mechanisms used to transform and establish new institutions, infrastructures, and routes of the constitutive flows of socio-economic spaces – money, commodity, people and, increasingly, data.

It is still commonplace in political discourse to regard the socialist period as a stagnant and monolithic temporality dominated by deficits, shortages, and totalitarian power (Thelen 2011). This perception has largely justified the need for Transition (with a capital ‘t’) – a

policy framework in which the coupling of liberal democracy with neoliberal capitalism is considered quasi-sacred and thus remains unquestioned.

Yet, the socialist period was a changing and self-reinventing time that, towards its end, had introduced many of the principles that the capitalist transition claimed to promise: increased trade and collaboration with non-socialist countries, nascent forms of private property and managerial governance, a growing opportunity for political pluralism and some possibilities for critique of the regime (Nakova 2003). Towards its end, socialism in Bulgaria was slowly taking a shape that resembled a vision of “capitalism with a human face” where the state was trying to navigate economic reforms with protection of the social rights for workers.

Ecological movements were an important part of this nascent internal critique of the regime, together with artistic critiques of alienation in industrial societies and denunciation of power inequalities. The ruptures of 1989 not only dismantled the institutions and infrastructures sustaining social security and communality, they also interrupted the growth of such internal critique that evoked the ideological principles of communism in striving for social, ecological and political justice.

This context of the Transition that has shaped the post-socialist space and Europe as a whole situates the European Green Deal in relation to three important questions. What discourses are being erased and silenced through the narrative of a green transition? What mechanisms are being used? And what are the effects of layered Transitions that each generate its own horizon of idealized and reductive futurity?

5.2. The European Green Deal, and its Unexplored Complexities?

Recently, the discourse of “green” transition has disturbingly aligned itself with past Cold War dichotomies and has managed to once again construe the image of (neo)liberal capitalism as the only viable option for our future, an ideological narrative that brazenly

borrowed from the myth of the Transition. On a geopolitical plane it has once again juxtaposed the progressive West to the authoritarian and regressive East. While the REPowerEU plan links energy transition to geopolitical positioning against Putin’s Russia, there are indications that the plan includes too many provisions and exclusions that would allow oil and gas giants in the EU to still import Russian fossil fuel (Corporate Europe Observatory 2022).

At the same time, the programme for a “green” transition continues to draw on the pillars of free market development introduced through the structures of international aid, infrastructure grants, and fantasies of upskilling labor. The key mechanism for implementing the Green Deal transition remains the EU’s Cohesion Fund (EC 2020), a scheme for the redistribution of capital that has helped foster dependencies between political and economic power in post-socialist countries like Bulgaria (Hristova 2021). The Cohesion Fund, which is seen as instrumental for the implementation of a just transition, sets the ideological and political apparatus for transforming the territorial structure of the European Union into different categories of regional units. The poorest units are reinterpreted as vehicles for the circulation of capital through policies privileging foreign direct investment, tax cuts, and redistributing public funds to private companies. This logic of development through private capital was established as the core element of Transition in Eastern Europe and, ironically, the mechanisms outlined in the just transition plan have already been put in practice and have consistently failed in the region. We argue that the same dynamics, value principle and “European gaze” underpins processes of “transition” in the entire region discussed here.

5.3. Destituteness or Prosperity or a Messy Combination of the Two: The Near Future of Southeast Europe

Dispossession triggered by the Green Deal will be particularly salient in the case of the Bulgarian economy which is heavily dependent on fossil fuels. The government has already committed to closing down the coal-based power plants. Depending on the level of

ambition for phasing out coal, the country will need to import electricity instead of exporting it, as it is currently the case. According to the current estimates, which do not take into account the fact that the green transition is expected to significantly increase the demand for electricity on the European markets, the annual costs of electricity for private consumers will rise by about 500 mln EUR on an annual basis (Szabó et al. 2020, 35).⁴² Additionally, phasing out coal is expected to lead to loss of 43000 to 54000 jobs (Primova, Vladimirov and Trifonova 2022, 37; Szabó, László et al. 2020, 38). The scale of the dispossession, however, will be more considerable. Since it is difficult to make a detailed estimate, we will limit the discussion to five hypotheses: (1) If the European Union bans combustion engines, that will eliminate the bulk of the Bulgarian cars, 86% of which are more than 10-year old (AAP 2018) with a high level of carbon dioxide emissions of 133 g/km for 2021 (the EU average level is 108.2 g/km; Iliev 2020). The Bulgarian population, however, buys second-hand cars not because they dislike the new models. Many will be unable to afford an electric vehicle, and as the public transport beyond the cities is limited, they will be effectively immobilized. (2) If the market of electricity for individual consumers is liberalized, as the government has already made a commitment to do, the costs of energy will escalate additionally. The increasing price of energy combined with a significant loss of jobs and competitiveness will bring about more poverty. The population of rural areas will be particularly vulnerable. About 50% of the Bulgarians rely on wood for heating (Rangelova et al. 2021, 26), and if the price of energy sources reflects their carbon footprint, that cheap alternative to electricity will no longer be available.⁴³ (3) The plans of the European Commission to stimulate renovation by blocking the sales of buildings that do not comply with the standards of energy efficiency will deepen dispossession because it will turn the main asset of many families into a frozen capital which can lead to a rapid growth of

⁴² The experts insist that the costs can be covered by the funds that are currently used for direct or indirect subsidies for the coal power plants. That optimistic outlook however does not take into account that some of the power plants are owned by global companies enjoying long-term contracts with the National Electric Company, and if the companies choose to sue the government, a significant share of the subsidies will be used to compensate for their cost profits.

⁴³ After 1989 the energy companies minimized the outlays on maintenance and development of the electricity grid in the rural areas, and without a significant investment the population can simply lack access to enough electricity.

unserved credit. The renovation funds will be hardly able to remedy that, at least judging on the experience of the projects already implemented in the framework of the cohesion funds because the access to funding involves a substantial amount of latent costs. It does not seem plausible that families unable to afford healthcare would be able to spend on an energy passport, to register as a legally recognized entity, or to put time, effort and knowledge into applying for grants. (4) The Balkans are already an exporter of human capital. The official estimates suggest that between 1989 and 2011 more than 830.000 of the Bulgarian population emigrated (NSI 2014, 4), and after 2011 migration has not slowed down significantly (Stoyanova 2018); such estimates, however, do not take into account temporary migration.⁴⁴ A significant share of that export is unskilled labor. The combined effect of digital and green transition will limit the market of unskilled jobs in the EU, and the new jobs opened by the development of clean technologies will require skills that most migrant workers do not have. The unskilled temporary migrants will hardly have access to reskilling programs because it will be available for employees with a legal status that unskilled workers usually lack. More importantly, the new jobs will involve more intensive communication, including with machines, and hence they will require a digital and foreign language competence the costs of which migrant workers cannot afford. Additionally, due to the increasing need to control the risks of unclean economic activities, the market of unskilled labor will be subject to regulations and monitoring that will increase the risks for both employers and workers. In effect, the cost of unskilled labor will decrease to reflect the increased cost of risks, and a large share of the market will recede into the gray zone of the economy thus leading to reduced employment, shrinking capital flows to the country and more poverty. (5) The Bulgarian industry is energy intensive. A significant increase in the energy prices will make it less competitive and cause an additional loss of jobs. The subsidies for clean technologies can compensate for that only to a limited extent because the Green Deal will generate a strong demand for clean technologies, and since the market

⁴⁴ 54.1% of the respondents in a 2017 survey on migration declared that they have worked more than 6 months in another European country (Kalfin 2018, 12). The money transfers of emigrants to their families in 2021 were 1168,8 mln. EUR and amounted to 76% of 1601,1 mln EUR the direct foreign investment in the country (BNB 2022).

of clean energy will be still emerging at the initial stages of the transition, it will have a limited effect on the competition; the choice of entrepreneurs where to develop and implement innovative technologies will be shaped by the access to subsidies, as the effects of the US Inflation Reduction Act are already demonstrating. Bulgaria will be hardly in a position to offer substantial subsidies, and the main, certainly lamentable advantages of the Bulgarian economy - cheap labor, cheap energy, weak regulations - will be immaterial. Even though some parts of the production will be outsourced to Southeastern Europe, the role of the region will be limited to manufacturing cogs for the engine of future European growth, and it will reap only a limited share of its benefits. (6) The increasing costs of energy will stimulate the development of a gray market of energy. The gray market will nevertheless produce a carbon footprint that will be detected by the European monitoring mechanisms and transformed into additional costs for the Bulgarian economy.

The environmental risks of the gray market of energy will be further amplified by poverty driven pollution by old cars and wooden stoves that has been contributing to low air quality in the country in the last decades. If the European Commission responds to such excessive risks by the most used strategy – sanctions – instead of normalizing the risk, the EU intervention will be merely punishing the country with the additional effect of socializing losses while not threatening private gains. In effect, the individual consumers in the country will bear the costs of the risks of the transition exorcized from the green to the gray market. The risks of such a development are already discernible in a current investigation of the European Public Prosecutor's Office against nine coal power plants and an auditing company for a fraud which essentially consists in declaring false data about the carbon footprint in order to avoid buying greenhouse gas emission permits that the plants actually cannot afford (Nikolov 2023). Furthermore, the combination of uncompetitive industry and expensive energy will bring about more risks of failure, unemployment, poverty that will spill over into health and environmental risks. The region will become a point of condensation of excessive risks, a zone of ecological danger.

5.4. Ukraine, clean tech, and the violence of outsourcing

What kind of landscapes do these mechanisms produce? One of the less talked about consequences of Russia’s invasion of Ukraine has been the reshuffling of the market for digital services in the East of Europe – an industry that is consistently hailed as an essential part of the Green Deal.

Ukraine has consistently been cast among the top outsourcing destinations in the region and in the whole of Europe with its cheap labor and a wide pool of educated IT specialists. Big companies like SAP, EPAM and Grammarly are struggling to pull out of the country and retain their cheap workforce in Eastern Europe. Ukraine is representative of a trend across the post-socialist region where a new tech industry has grown out of outsourcing – an economic activity that is simultaneously affirming and challenging the postulates of transitional mechanisms.

Outsourcing, which has been hailed as a vehicle of foreign direct investment in Eastern Europe, creates uneasy dependencies between their low wages relative to the rest of Europe and the local aspirations for economic progress. Kalindi Vora (2015) argues that outsourcing is, at its core, an extractivist endeavor that turns certain populations into a source of vital energy for others, extracting “from areas of life depletion to areas of life enrichment.”

These populations in the Third World and, increasingly, in the Second World, are seen as providing support, maintenance, and care labor for both customers and production facilities in the Global North.

5.5. Upskilling: a vehicle for the “green” transition

Outsourcing produces even within the context of national economies new geographies of life depletion and extreme income inequalities. In 2022 the median salary in Bulgaria’s IT

sector, an industry that had grown quickly on the back of outsourcing projects and enterprises, is around 2500 euro (Dimitrova 2022). In contrast, the minimum monthly wage is 350 euro and, according to one of the main trade unions, 2/3 of workers receive below the country median salary which is still three times lower than the median wage in IT (Petkova and Popova 2021).

Still, this increasing inequality is obscured behind the omnipresent rhetoric of human capital and high skilled labor in the European Green Deal as well as in national economic policies. The EU sees upskilling as a vehicle for the “green” transition – a vehicle that promises an unclear future for the ones whose jobs are deemed low skilled and which positions the Union in a new wave of extractivist politics: one that leans heavily on the extraction of biocapital from its peripheries and its outside. The ambition to attract migrants from so-called “third countries” to fill in high skilled jobs is clear in the programs of the EU and has been adopted by its members (Huckstep, Kenny and Dempster 2022). In the first week of Russia’s Ukraine invasion the Bulgarian Association of Software Companies quickly offered assistance for software engineers leaving Ukraine in an attempt to attract skilled labor to the country. Driven by the calculative logic of the political discourse of human capital, people in Ukraine, even in the context of war horror and cross-border solidarities, were seen through the lens of desirable skills. This logic reproduces the geographical inequalities of the European Union within the post-socialist space where the convergence of visa and labor regimes determined by the membership in the Union lead to multiple heterogeneous possibilities for the extraction and depletion of biocapital.

5.6. Reproducing or countering inequalities?

While the EU strategy for extracting skilled labor from third countries is explicitly clear, what remains unclear is the fate of low skilled workers. The strategy of the Union consistently promises an increase in the share of skilled jobs in various industries. But the existing practices of the Union suggest that its developmental policies privilege a capital-centric logic (Hristova 2021) that deepens rifts between winners and losers. These policies have

already nurtured and exploited the inequalities between East and West through the figure of a highly mobile low skilled labor force from the post-socialist space (Hristova and Apostolova 2021).

There are already anxieties about the geopolitical implications of the Green Deal with regards to trade and energy (Leonard et al. 2021), but the self-centeredness of this pan-EU strategy extends beyond fuel and trade. It exploits rather than attempting to mend the injustices and inequalities produced through the politico-economic projects of the East-European Transition and global colonialism (Truong 2021). The ambition to import skilled labor from the outside and consistently marginalize low-skilled workers is extractivist in its logic of absorbing productive labor power and outsourcing the cost and toil of its social reproduction to social and geographic peripheries.

Envisioning a shared sustainable future, we will need to search for alternative pasts and models that offer other frameworks relating to issues of environmental justice, ones that link together environmentalism, social reproduction, and popular sovereignty against the interests of extractivist capitalist policies. This is where the post-socialist experience provides important lessons – not just ones that are critical of the narrative of Transition but also examples of practices of popular environmentalism and a compendium of destitute spaces and broken lives that will need to be cared for and mended on the path to any meaningful transition to a better future.

5.7. A new market: How Far Ahead Are We in Rendering it “Green” if We do not Move Away from the Capitalist Mode of Production?

The logic of the Green Deal consists in transforming environmental risk into a component of value, surplus value that circulates as part of finance capital at the expense of utter disregard for the economic inequality it is premised on and will perpetually re-produce on

global scale.⁴⁵ Furthermore, the “green transition” as per the European Green deal is conditioned by the limited mineral resources and will only continue to ravage the Earth and in fact exacerbate the climate crisis.⁴⁶ That will make the market more governable, and it will allow the economic actors to profit from the production of less risk, of risk that is reduced below the threshold of the normal distribution which in this report we will call negative risk. However, that will devalue a substantial amount of capital in Southeast European economies for which the funds allocated to just transition will be unable to compensate. In effect, the Green Deal will increase social inequalities, aggravate poverty and stimulate further loss of human capital in Southeastern Europe.

To explain how risk is going to define value, let us take as an example e-fuels. They are produced from water and air, potentially by captured CO₂ emissions, by means of clean electricity so that they do not have a carbon footprint. Since e-fuels can be used just as fossil fuels, their differential value consists in the fact that they are clean, they generate not only energy but cleanliness, a negative environmental risk (although studies suggest that they can be harmful to the environment in other ways⁴⁷). Presently, e-fuels are uncompetitive because their production is very energy intensive. The projected cost of e-fuels produced in the EU is at least double the price of petrol, and even if the production is outsourced to countries less committed to the green transition, it amounts to more than 150% the price of petrol (Krajinska 2021,34). Thus e-fuels do not have an actual use value on the energy market.⁴⁸

The Green Deal has nevertheless commodified e-fuels as a technology. Although the technology is not actually productive, it constitutes an intellectual property that can attract

⁴⁵ United Nations: 97th Session, 4TH & 5TH MEETINGS (AM & PM) Developed Countries Must Deliver on Climate Change, Finance Commitments, Delegates Stress, as Second Committee Continues Its General Debate.

⁴⁶ Thomas Nail, Theory of the Earth (Stanford University Press, 2021).

⁴⁷ Ironically, the potential of synthetic fuels can be used to avoid the ban on the sales of new automobiles with combustion engines planned for 2035.

⁴⁸ Although companies like Bosch or ExxonMobil have already opened the first e-fuels plants, the production is expected to become marketable by 2030 or 2050 (Searle 2020).

grants, subsidies, investment, it can generate capital and therefore it has an actual exchange value independent of the use value of its product. That exchange value, however, depends on the potential of e-fuels to replace fossil fuels, to power combustion engines, particularly in aviation or in maritime transport where batteries are not an option as well as to significantly lower the costs of developing a clean energy infrastructure. The investment that the technology currently attracts is essentially an advance on its potential use value and in that sense it functions as a fictitious capital (Marx 1959, 282). If the potential of the technology is exhausted, if it turns out to be imaginary, then investments in synthetic fuels will amount to a frozen, perhaps even wasted capital. The potential value of e-fuels, however, is vulnerable to risks: the development of the technology can run into problems; it can be abandoned as a fruitless invention; the marketization of the product can be infelicitous; a competing technology can turn out to be more successful; other economies can attract the companies owning the technology by more generous subsidies as in the case of the US Inflation Reduction Act; the product of economies that are not committed to green transition can shrink the market for clean energy; finally, there is a risks of an incomplete, unambitious or failed green transition. To avoid the devaluation of capital invested in clean technologies such as e-fuels, risks have to be controlled.

5.8. A new security apparatus and the socio-economic autonomy

To control a risk does not mean to fight off a threat. In contrast with danger, risk represents the probability of a loss and hence it cannot be eradicated because even if the probability is extremely low, it never amounts to zero (Ewald 1991, 202-204). Since annihilation of a risk is impossible, to control it means to normalize it (as we are going to explain below, that does not capture negative risk because it implies a reduction of the probability of damages beyond the normal levels rather than normalization).

To calculate the probability of a loss, one needs a mass of cases. If the mass is large, and if it is registered for a long period of time, the probability usually turns out to be normally distributed. To normalize a risk means to reduce it to its normal distribution (Foucault 2007,

58-59). That, however, cannot be done by prescribing norms. Let us take as an example shortages. If the authorities try to reduce the risk of a shortage by controlling the prices, that can discourage the producers and in the long run the risk can actually increase. In the perspective of liberalism as a governmental technology (Foucault 2010, 63), it can be reduced more efficiently if the authorities refrain from intervention because the free play of market prices will balance supply and demand. The free market, however, brings about second-order risks such as monopolies, cartels or unfair advantage. The authorities should control such second-order risks by identifying the points at which they significantly exceed the normal levels, by identifying the factors correlated with the excess, and by acting on the factors so as to reduce the risks for competition or at least to prevent it from escalating into a crisis in which the normal distribution will be no longer valid (Foucault 2007, 90-91).

The Green Deal has inherited that mechanism of risk control from neoliberalism (Foucault 2010, 132, 162; 2007, 34-37); but to be able to control the risks for the fictitious capital generated by the green transition, that mechanism needs to be transformed. (1) The normal level of the environmental risks posed by fossil fuels is already unacceptable. Therefore the strategic documents provide a new definition of danger: it is no longer considered an intensification of risks beyond the threshold of the normal, it is rather defined in terms of a deviation from the norm of a net-zero economy; since the mass of actual cases differs significantly from the norm, the normal distribution of risks already amounts to a danger, to a crisis which suspends the application of a norm that is nevertheless valid thus opening up a zone of indistinction between facts and norms (Agamben 2008, 40), bringing forth a state of exception that necessitates a new form of sovereign power (already indicated by the emergency powers claimed by the European Commission ranging from the standardization of energy markets to the collection and redistribution of the income from the future tax on carbon footprint that is supposed to gradually replace the older forms of taxation). (2) In the context of the Green Deal, one can no longer expect that competition is going to normalize the risks by itself. Since many clean technologies are still not competitive, competition

against fossil fuels poses a risk for their development and marketization. The Green Deal plans to reduce the risks of competition by a series of interventions:

(a) In order to cancel the advantage of fossil fuels, the European Commission plans to make fossil fuels more expensive by taxing the carbon footprint, by obliging the end consumers to buy greenhouse gas emission permits compensating the environmental risks of their behavior, by introducing regulations that will increase the administrative costs of unclean energy, by imposing standards that will sanction or ban combustion engines consuming too much energy or leaving a heavier footprint. On the other hand, the Green Deal is supposed to make clean energy less expensive by providing subsidies as well as cheap and publicly guaranteed credit, by offering funding that makes development of clean technologies lucrative before their marketization, by making the investment into clean technologies risk-free, by creating a stable demand due to the shift of the European institutions to clean energy, by setting goals for reduction of carbon footprint that will progressively turn fossil fuels into a problem for the national and local authorities. Additionally, the risk of clean technologies is reduced by crises such as the war in Ukraine which made natural gas much less economically efficient than renewable electricity reinforcing the trend that emerged in the period of the Covid-19 pandemic (IRENA 2021, 35-36).

(b) The focus on value chains reframes competition as a contest between modes of production rather than between products (see for example EC 2023, 1-6; EC 2022, 1516; EC 2019, 7-8; EC 2018, 19; That makes possible a more detailed and comprehensive identification of risks at any step of the production process, and hence more detailed and comprehensive control. (c) The scale and the expediency of the transition necessitate a regulation of the global environment that the European Union can regulate only to a limited extent. The Green Deal hopes to solve that problem by reconceptualizing borders: they are supposed to function as a membrane that modulates the flows of goods, technologies and capital, blocks the inward flows considered high-risk in terms of carbon footprint, digital,

economic or political security, and prevents the outward flow of clean technologies.⁴⁹ (d) The European Commission hopes that the modulation of flows of capital, goods and technologies by extensive border control will bring about a new type of capital - access to the European market - that can be exchanged for the implementation of regulations and regimes of standardization beyond the borders of the EU, particularly in partner countries that are to a significant extent integrated in the European economy (but also on a global scale due to the size and the relative centrality of the European market). (e) The borders of the European Union are supposed to be permeable to flows from countries that are considered allies, friends or partners sharing the European values. In that case, the access to the European market will function as an empty signifier marking the dividing line between 'us' and 'them', and in effect it will reproduce political antagonisms. To sum up, the Green Deal rearticulates competition as a zone of condensation of risks that need to be controlled. In the context of the green transition, therefore, competition can work only if it is coupled with a security apparatus.

6. TRANSFORMATIONS OF WORK AND TECHNOLOGY

6.1. Processes of labour automation and they historical trajectory throughout the 20th and 21st centuries.

The digitalization of great parts of labour, which has been taking place in the last decades, has significantly contribute to the transformation of work and of the workplace and the geography of production globally. Here, we are planning to look at these processes in the region, in their interrelation with global dynamics.

In exploring aspects of the digitalization and automation of parts of the production one needs to take into account politics and practices related to global mobility and their intertwinement with divisions and taxonomies of gender, ethnicity and class. Global

⁴⁹ It is unclear though how boundary control can protect the economy from the flight of economic actors to countries such as the United States.

mobility is often characterized by restriction in relation to peoples' mobility and freedom of capital mobility. As such, restriction of peoples' mobility significantly contributes to the (re)production of workers inequality in the global context while capital mobility enables the extraction of value regimes in different localities.

For example, as Ursula Huws (2003) demonstrates, computer operators in India work for remote companies in the US, and while the salary of an operator in Bangalore is much smaller than that of a computer operator in the US, nevertheless, it may be much larger than a salary obtained in an Indian state job (eg. school teacher salary). Such mobilities of capital have enabled complex global and local inequalities, especially since the 1980's and the intensification of flexible regimes of production and labour. The geographical fragmentation of work production does not only contribute to the deepening of old and new class, gender and ethnic inequalities but it also offered the ground for new technologies of discipline at the workplaces globally. The fear of capital flight has a longer history throughout the 20th century and it has been used as a managerial technology of discipline in workplaces as historical and anthropological accounts.

Intense changes in production and in the organisation of labour in Bulgaria have been part of a broader shift in capitalism since the 1980s, which has triggered a variety of scholar analyses. Blim has underlined how fragmented interconnections within workplaces may be seen as constitutive of the "global factory" (Blim 1992), which is characterised by investments across national borders, intense mobility of people and mainly capital, new technologies of communication and the significantly growing number of transnational corporations. This global shift of capitalism has been characterized by different scholars as "disorganised capitalism" (Offe 1985; Lash and Urry 1987), "flexible specialization" (Piore and Sabel 1984), "flexible accumulation" (Harvey 1989), globalisation, or flexible capitalism. Despite the differences in these approaches, all agreed that there has been a great shift towards flexibility and that flexibility became both a production practice and an ideological tool.

Moreover, flexible capitalism has been followed by processes of financialization, a condition that strengthens financial markets over workplaces and spaces of production. Work and workplace transformation occurred in this context of the parallel process of flexibilization and financialization of capitalism. The combination of both flexible and financial capitalism seem to deepen workers inequalities and pay-gap globally in various complex ways, while it also enables conditions of personal, household and company debt. One might say that employees, especially at the lowest hierarchical positions, are employed with flexible and precarious contracts, while their financial indebtedness to formal and informal debtors is gradually deepening. While this is not a condition relevant only to those working in sectors that may be characterized as those belonging to the “automation of labour”, it is important to take this historical context of the global political economy into account, in making sense of the complex forms that employment flexibility and precarity may take.

The automation of labour that is taking place in the last couple of decades, seems to share characteristics with previous forms of technological changes throughout the 20th century in various sectors of work, labour and production. One of the most prominent ones is that technological changes enable new forms of skilling and deskilling to take place (Blum 2000; Prentice 2008). As anthropological and historical studies of work have demonstrated, skill as a category is historically informed and socially constructed. Moreover, the category of the unskilled, may create different types of hierarchies at work. For example, migrant workers in difference factory’s globally are classified as “unskilled” for jobs that classify local workers as “skilled” (Linhard 1985).

Taxonomies and processes of skilling and deskilling in relation to digital labour takes also class, gender and ethnic characteristics which, in their turn, may inform different global class inequalities. For example, a variety of remote workers who can work online are conventionally characterized by the media as digital nomads. Those are mostly considered

skilled workers in various sectors of software programming and services and may work from anywhere in the globe. They often move mainly from Western and Northern countries to Southern and/or to Eastern countries, forming not only a growing number of mobile employees globally but also a significant community of consumers who affect housing markets globally. This seems to form a new shift in relation to the example by Huws mentioned above. Those relatively well-paid workers may live side by side with less privileged workers, such as those who work remotely and in digital forms of labour, yet they are not allowed to cross borders, according to the companies. This is the case with several call centers and online service companies operating in Greece and in other countries in the region.

Therefore, in responding to one of the questions of this report, about how the automation of labour may affect the countries of the Balkan region, one might suggest that the digitalization and the automation of labour may intensify changes in multidirectional ways. One of the current conditions suggests that old global (and colonial) hierarchies and inequalities seem to be reproduced by such labour practices. Those seem to be also informed by different forms of freedom and restriction of mobility, similar to those in the past decades.

Therefore, in summing up this first part of the paper, there are historical continuities in relation to work and changes in technology, in skilling and deskilling, in mobilities and immobilities coupled with gender, ethnic and class relations. Before entering into a discussion about automation and contemporary forms of labour, we will briefly present some questions that we take into account in this exploration.

Ethnographies of gender and work have underlined the importance of taking into account relations of labour at home. A body of literature on work, gender and home (eg. Narotzky 1997; Goddard 1996; Vaiou 2021) has shown how invisible labour, including production happening at homes via outsourcing, is gender related. “Working from home” is often

coupled with relations of patriarchy and with unpaid and undocumented labour. Moreover, it is also connected with muted resistances, due to workers inability to collectively respond. Nevertheless, studies of these forms of labour have also contributed to nuanced views of everyday forms of resistance. Moreover, they have also contributed in problematizing the notions of labour, work and workplace as well as the notions of labour time and free time. The period of the pandemic has intensified practices of work at home which further blurred the boundaries between home and workplace, as well as the working and the non working time.

In the next section we are looking at various different forms of work and labour that are related to the automation and digitalization of labour. We are looking at different forms of digital, immaterial, flexible forms of labour which invite us to think about the concept of work and push the limits of our current understandings of labour. The example of gamers and of new media users, invites us to think about the boundaries of the workplace, of the notion of work and as well as the relations between work, production and consumption. Furthermore, it invites us to think about various forms of the “entrepreneurial self” in relation to automatic labour.

6.2. Automation of labour and techno-social transformations

The automation of labor constitutes a set of techno-social processes and transformations that crystallize in many different fields of the social. It confronts the social sciences and humanities with challenges and questions concerning the loss of jobs/professions, the opening of new jobs and the emergence of new professions, the emergence of new forms of entrepreneurship, new forms of precarity and unpaid or underpaid labor, new forms of commodity and new articulations of labor relations.

The first part of this paper presents approaches from the international literature concerning the transformations arising from automation in the context of different manifestations of capitalism such as creationist capitalism, platform capitalism and sharing economies, big

data, and surveillance capitalism, or, in general, digital capitalism. Some relevant examples from the Greek case are also given. The automation of labor and the economy today has led to the emergence of new forms of capital accumulation. Fuchs identifies different models of capital accumulation such as the digital content as commodity model (i.e. software, games), the digital finance model (i.e. PayPal), the hardware model (i.e. computing hardware), the digital network model (i.e. Verizon), the online retail model (i.e. Amazon, eBay, Alibaba), the online advertising model (i.e. Facebook, Google), the sharing economy model (i.e. Uber, Airbnb), the digital subscription model (i.e. Netflix, Spotify), and mixed models (combination of different commodities) (2021: 81). "The international division of digital labor is a complex network that involves globally inter-connected processes of exploitation, such as the exploitation of Congolese slave miners who extract minerals that are used as the physical foundation for ICT components that are manufactured by millions of highly exploited Fordist wage workers in factories such as Foxconn, low-paid software engineers in India, highly paid and highly stressed software engineers at Google and other Western software and Internet corporations, or precarious freelancers in the world's global cities who are using digital technologies to create and disseminate culture, and poisoned eWaste workers who disassemble ICTs and thereby come into contact with toxic materials, and so on (Fuchs 2014a, 2015a)." However, the focus of this paper is primarily on the users of these platforms. The text, in other words, does not cover the range of subjects involved in the various forms of digital labor and capital accumulation models listed above.

Although unpaid labor is not a new phenomenon in the context of capitalist socio-economic organization, the diffusion of digital technologies, algorithms, and the resulting automation has contributed to the emergence of new forms of unpaid labor. We can identify two different transitions, two sets of techno-social transformations linked to two different economic crises. The first concerns the advent of Web 2.0 and is connected to the collapse of many online start-ups in the context of the dot.com financial bubble in the late 1990s, and the second is linked to the definitive establishment of Web 2.0 and took place almost in parallel with the outbreak of the global financial crisis of the late 2000s. "Web 2.0

is the network as a platform, spanning all connected devices; Web 2.0 applications are those that make the most of the intrinsic advantages of that platform: delivering software as a continually-updated service that gets better the more people use it, consuming and remixing data from multiple sources, including individual users, while providing their data and services in a form that allows remixing by others, creating network effects through an "architecture of participation", and going beyond the page metaphor of Web 1.0 to deliver rich user experiences." (O'Reilly 2005b).

However, in the critical international literature Web 2.0 is not seen primarily as a set of new technologies but as a set of new promises to investors to attract new capital after the dot.com bubble. The second juncture that coincides with the 2008 crisis, which had a huge impact on Greek society, concerns the definitive transition to the Web 2.0 model, which was accompanied by the great diffusion of the use of social media platforms and the increase in the number of users both in Greece and internationally.

Many of the first relevant studies came from the field of autonomous Marxism. In this context, an important concept is that of 'immaterial labor' (Lazzarato 1996). This is the form of labor required to produce the informational and cultural content of the commodity, which becomes dominant from the 1970s onwards. The informational aspect of the commodity implies the demand for increased knowledge of workers in the field of cybernetics and computers; while the cultural aspect refers to the activation of practices that are often not perceived as labor. These practices include the identification and formation of cultural and artistic trends, fashions, tastes, consumption patterns, attitudes, and, above all, the determination of public opinion (ibid.: 133-134). Immaterial labor is the dominant form of labor in the context of cognitive capitalism where production and accumulation of capital are concerned with immaterial products such as knowledge, information, communication, relationships, and affective responses (Hardt & Negri 2004: 108).

Inextricably linked to immaterial labor is 'affective labor' which is a subcategory of the former (Hardt 1999). Sectors such as spectacle and advertising aim to produce and manage affects in anticipation of gaining the attention of the audience, creating a sense of excitement, familiarity, interest, comfort, a sense of belonging, etc. At the same time, affective labor forms a constitutive condition of communities and collective subjectivities since production itself has been identified with communication and affect (ibid.: 89). Immaterial and affective labor produce social networks, forms of community, and biopower since economic production has been unified with the communicative action of human relations (Hardt & Negri 2002: 394). In the context of digital platforms, the cultural and creative industries are primarily oriented towards producing enjoyment, entertainment, and contexts for interaction, communication, proximity, identification, and the constitution of a sense of belonging - ultimately, sociality itself.

In this context, affects are understood as the basic 'raw material' of social workers [...] which already constitutes the most important engine of biopolitical production (Prada 2010). Perhaps this explains why the most successful products of modern industries are characterized by flexibility and the ability to personalize and adapt to the needs of the individual user or consumer, hence to the individual identity and desire. Affects, in other words, are perceived as sets of abilities that, together with physical and intellectual capacities, can produce value. Indeed, emotion has never been merely private (see Ahmed 2004), but in the context of digital platforms where users share experiences, opinions, inclinations, preferences, and feelings, the process of making them public, interacting, and interconnecting them is radicalized and intensified in terms of convenience, scope, and speed. At the same time, all the above, and especially the data and metadata that the users generate, can be used for economic purposes by the companies owning the platforms, through their surveillance, classification, measurement, and quantification by automated algorithmic systems and their subsequent sale to advertisers to return personalized advertising and content. In 'affective capitalism', the systems for organizing production and distribution are based on the abilities of different bodies - human and non-human

(algorithms, interfaces, devices) - to meet each other. These encounters and relations are surrounded by a vast array of technologies that produce them, capture them, commodify them, and, ultimately, attempt to turn them into capital (Karppi et al. 2016: 10).

The fact that users of digital platforms contribute to the production of value but are not paid has led to the emergence of concepts such as 'free labor' (Terranova 2000) and 'immaterial labor 2.0' (Coté & Pybus 2007, 2011). Free labor refers to that form of work that is both voluntary and unpaid, which offers pleasure to those who perform it, but which is at the same time exploited (since it generates economic value without providing remuneration). It is primarily concerned with digital creation (game modification or modding, website creation, the construction of potential social spaces and games) and is central to the cultural and creative industries (Terranova 2000: 33). Drawing on the notion of the social factory, new media theorist Tiziana Terranova argues that the removal of boundaries between producer and consumer, work and creation, leisure and working time, results in the diffusion of labor-management arrangements and logics throughout the social body (ibid). Free labor develops mainly in sectors of cultural production (arts, MME, academia) which are articulated with the information industry where knowledge and information play the dominant role.

The term 'immaterial labor 2.0' is used by Mark Coté and Jennifer Pybus (2007, 2011), having as a field of investigation first MySpace and later Facebook to characterize the intensified and unpaid form of labor performed on digital networks. Forms of labor based on the production of ideas, images, knowledge, communication, collaboration, and affective relations are now becoming the dominant paradigm of economic organization (Pybus 2011: 403-404). At the same time, the digital construction of subjectivity within social networks is a constitutive practice of this form of labor, and its learning is a central process for the (re)production of cognitive capitalism (Coté & Pybus 2011). Essentially, the term 'immaterial labor 2.0' refers to all those practices such as the formation of social networks, tags, likes, the posting of images, music tracks, and videos, and the creation of

links to products and services, which create economic value for network providers without remuneration to the creator(s).

All practices aimed at creating content and maintaining a social media profile are a form of labor exploitation, since without users these companies would have to hire workers for this work (see Fuchs 2009). In critical theories of social media, the interest lies in how users' online practices, opinions, inclinations, emotions, and preferences are monitored, recorded, and transformed into economic value (Andrejevic 2002, 2007; Cohen 2008; Fuchs 2011). The emotional relationship of users to these new regimes of surveillance and control (what Shoshana Zuboff calls 'Surveillance Capitalism') is also important. While users may feel uncomfortable and/or offended by the awareness of being recorded, these forms of surveillance become desirable and are perceived as empowering in that they provide access to knowledge and information, facilitate the management of the volume of information, and unite users with common interests.

A significant part of these studies has focused on digital gaming. Given the continuous increase in immaterial and affective labor and the consequent cultivation and exploitation of gaming as a productive force, cultivating the work-as-play ethos has been a key strategy of the gaming industry (de Peuter & Dyer-Witthford 2005). Indeed, the term playbour has been employed to analyze the practice of modding since, on the one hand, it leads to the advent of innovations used by the gaming industry, and on the other hand, this practice is perceived by modders themselves as a leisure activity and an extension of gaming (Kücklich 2005). 'Playbour' (Kücklich 2005, Goggin 2011), 'ludocapitalism' (Dibell 2007, de Peuter & Dyer-Witthford 2009), and 'creationist capitalism' (Boellstroff 2008) are concepts that while starting with video games and virtual worlds as a reference point, are mobilized to bring to the surface the appropriation of creativity as a productive value in contemporary (affective) capitalism.

The distinction between leisure and work, play and work is therefore blurred. For instance, in Second Life virtual buildings, clothing, vehicles, and the entire virtual world are created by the players. Players, as creators of their world, are not conscious that they are selling their labor. In an even more ironic way, players produce content for a commodity they consume. This is a trope of capitalism, dominant in the context of neoliberalism, which flourishes more than anywhere else in the context of creative industries and practices such as crowdsourcing: labor is perceived as a kind of creativity, and production is perceived as creation (Boellstorf 2008: 206-209).

More specifically, the anthropologist Tom Boellstorf (2008), studying the political economy of the game Second Life, argues that creationist capitalism constitutes a dominant mode of production under neoliberalism. After all, virtual worlds and networks emerged precisely within the historical context of neoliberalism and the value attributed to the mechanisms of the market, competition, and individual responsibility. The distinction between leisure and working time is broken down and workers are not perceived as someone who sells their labor power but as creators of their world. In other words, the self is perceived as a source of creation.

Boellstorff (ibid.) reports that the utterance of terms such as creation and creativity was particularly frequent during his ethnographic research, to the extent that the value attached to them by his interlocutors tended to make them almost biological necessities. The players of the Second Life placed a premium on creativity over money. When they spent days and nights creating something, they claimed they were not doing it to earn L\$ (the game's monetary unit), but to bring something into existence. The game world itself consisted of user-generated content. More than 99% of the in-game items, which numbered over a million, were created by them. The company encouraged users to create their videos of in-game footage and the one that was rated the best would be used to promote the game. Here, the consumer again becomes a prosumer who provides his/her

labor for free to produce promotional material for a product he/she has already purchased. Under creative capitalism, labor becomes valuable as a form of leisure.

This investment in the 'creativity' of the subject has permeated several aspects of the 'new entrepreneurship' (i.e. Google): at the level of business management, playful and fun activities have been introduced in many workplaces to increase productivity, employee loyalty, and job satisfaction. Elements of the mechanics and rules of games (such as leveling up, point accumulation, and rewards) are diffused in social media through gamification techniques to regulate consumer behavior and increase emotional loyalty and attachment to specific products and services (Petridis 2019).

However, over time, the field of study will broaden beyond games while new forms of labor (not necessarily unpaid) will come to the fore. For example, in Greece and elsewhere, many content creators and influencers are active within the gaming industry. These users are not unpaid but are remunerated in various ways (by companies whose products they promote in their videos, by advertising embedded in their videos, by user donations and subscriptions to their channel). Nonetheless, in my study of the practices developed by gamers in Greece, almost none of my interlocutors ever made a living from the revenue they generated from the content they created on platforms such as Twitch. tv, and YouTube. The job of a content creator and influencer is probably a promise and a hope that rarely materializes. As Christian Fuchs argues, this kind of "labor is hopeful. It is based on the hope that they will one day be paid for some or all the time they have invested. It is hope labor, 'an ideological process' based on 'un- or under-compensated work carried out in the present, often for experience or exposure, in the hope that future employment opportunities may follow'" (Kuehn and Corrigan 2013, 10 in Fuchs 2021). This does not mean that there are no successful influencers and content creators in Greece. It means that these successful Influencers usually tend to be already-known celebrities and are boosted with investment capital to promote well-known brands.

As far as platform users are concerned, gradually most analyses started to shift the focus from user creations to their data and metadata. In this light, the capital accumulation model established over the last 15 years has focused on harvesting data and metadata from digital platforms (Google, Facebook, etc.) generated by user prosumers. Behavioral data and metadata generated by users from their social interactions within the platforms are sold to advertising clients to send targeted content or advertising. This process is not only a form of unpaid and therefore exploited labor (since users' data is capitalized but they are not paid), but also an inversion of the very notion of commodity fetishism. In contrast to the Marxist approach in which commodity fetishism hides the social relations (class, production process) behind the commodity perceived as an object, in the case of big data capitalism the commodification of subjectivity itself (the commodity of big data) is hidden behind the social relations and interactions of users in social media.

Indeed, in the Greek case, the state itself was involved in an illegal transfer of personal data to Cisco. During the pandemic, the Webex platform was used for distance learning. Objections from various sides about the transparency of the contract between the Greek state and Cisco led to an investigation by the Hellenic Authority for Communication Security and Privacy, and according to its findings, the personal data of students and teachers were provided to the company without the prior consent of the subjects of those data.

Another area of digital labor and automation of the economy is the sharing economy. Currently, in Greece, Airbnb and Vrbo have 155,000 properties registered, while efood and Wolt (delivery) are estimated to employ more than 10,000 employees in total. In addition, Uber, which currently operates in the capital, recorded 5.8 million requests for rides in 2022, according to an interview with its director in Greece. Most of these sharing economies entered the daily lives of Greek citizens in the past decade and were perceived as a way out of the crisis. This new model of entrepreneurial self has contributed to the growth of Airbnb residences in the country, however, at the same time it led to conflicts

with other sectors of the economy (hotels) since in the first years no taxation was foreseen on the revenues of those involved. At the same time, combined with the reduction in construction activity (both due to the crisis of the previous decade and the increase in the cost of building materials due to inflation resulting from the energy crisis in the current phase), the cost of buying and renting in Greece is currently exorbitant. According to a Commission report, over 70% of those who rent a house spend at least 40% of their total income on rent.

In the sector of delivery and taxi routes, conflicts between different social groups have also erupted in recent years, as well as the creation of trade unions demanding better working conditions and wages for workers. These are forms of extremely precarious labor, which follow the model of turning oneself into an entrepreneur. On Wolt's official website we read: "The more distributions you make, the more you earn", "Unlike full-time and part-time jobs, you decide when and for how long you distribute" and "You can fit distribution into your life - while combining other work, study or rest". There is, of course, no mention of the wages and fixed costs that workers have to cover themselves. These platforms are not just limited to harvesting and managing data and metadata but exploit the property of others. Another sector inextricably linked to automation and digitality is the workers in fact-checking and content moderation. Over the past decade, the 2016 US elections, the explosion in the production and spread of fake news, and the Cambridge Analytica scandal contributed to the spread of the term algorithm, which has since become part of the everyday discourse of citizens, the media, academia, science, and the corporate world. When Google and Facebook were criticized for their non-interventionism in matters of fake news on the grounds of 'freedom of expression and speech' the first official statements were about the malfunctioning of algorithms. Thus, the companies' policies were 'washed out' to a certain extent, and the whole phenomenon was presented as a kind of 'software failure' that with a few technical improvements could be overcome once and for all. In short, the path usually preferred by these companies in similar cases was chosen, that of technological solutionism. However, these are issues that require radical social and not

only technological transformations and changes. These tasks should be undertaken by people and not by automated algorithmic systems. Also, fact-checkers and content moderators should be well-paid and have a research background.

In the Greek case and especially amid a pandemic crisis, to combat conspiracy theories and fake news, content moderation, and fact-checking have been undertaken primarily by companies and websites such as Teleperformance and Ellinika (Greek) Hoaxes. These organizations have received considerable criticism from activists and sections of the press. Teleperformance, which was set up as a call-center company with the main focus on debt collection, and Greek Hoaxes, which the opposition press has described as an organization that supports the positions of the current government, do indeed help to prevent this work from being left to automated algorithmic systems, but they bring new problems to the fore that again touches on the construction of the truth itself. It is not known exactly what the working conditions are in these institutions, but call centers often tend to be regarded as predominantly precarious workplaces.

7. SOME CONCLUSIVE REMARKS

The goal of this study is to come to educational policy solutions that address the complexities presented above, and, in conclusion, we are proposing the following:

- 1) Active promotion of deep integration between SSH (Social Sciences and Humanities) and STE(A)M by creators of national educational policies to prepare Region's society for the political-economic transformation of the Continent aligned with the global 2030 goals.
- 2) Creating institutional infrastructure for innovation-based social entrepreneurship, allowing for a variety of models including associations of workers, aspiring toward optimal inclusion of the disenfranchised groups.
- 3) Deep overhaul of legislation in countries less aligned with the Bologna process, in particular its core value – mobility, seeking to allow maximally flexible and

accessible intra-European mobility among students but also labor force and researchers.

- 4) Allowing for digital mobility to complement and accelerate the physical mobility as described in recommendation (3).

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