



REVIEW

By Assoc. Prof. Gabriela Milcheva Yordanova, PhD,
Institute of Philosophy and Sociology at BAS (IPS-BAS)
of a dissertation for the award of an educational and scientific degree '**Doctor**'
Field of higher education 3. Social, economic and legal sciences
Professional area 3.1. Sociology, anthropology and cultural sciences
Scientific specialty 05.11.01 Sociology

Author: Bagryan Tzvetanov Malamin

Topic: 'Artificial intelligence and the creative professions: sociological projections of their present and future interaction'

Scientific supervisor: Prof. DSc. Vassil Nikolaev Kirov, IPS-BAS

1. General description of the submitted materials

By order No. ПД 09-569 of 05.12.2023 of the Director of the Institute of Philosophy and Sociology at BAS (IPS-BAS), I was appointed as a member of the Scientific Jury for a public defense procedure of a dissertation on the topic '*Artificial intelligence and the creative professions: sociological projections of their present and future interaction*' for obtaining the educational and scientific degree 'Doctor' in the field of higher education 3. Social, economic and legal sciences; professional area 3.1. Sociology, anthropology and cultural sciences, scientific specialty 05.11.01 Sociology. The author of the dissertation is Bagryan Tzvetanov Malamin – PhD student in full-time form at the 'Knowledge Society: Science, Education, and Innovations' department with scientific supervisor Prof. DSc. Vassil Nikolaev Kirov at IPS-BAS.

The presented set of paper and electronic materials by Bagryan Tzvetanov Malamin is in accordance with the Regulations of the IPS-BAS on the Conditions and Procedure for the Acquisition of Scientific Degrees and for Holding Academic Positions, and includes the following documents:

- Application to the Director of the IPS-BAS for the opening of the dissertation defense procedure;
- Protocol of a meeting of the 'Knowledge Society: Science, Education, and Innovations' department held on 15 November 2023 (based on Order No. ПД 09-476/04.10.2023 of the Director of the IPS-BAS), relating to the reporting of the readiness to open the procedure and the preliminary discussion of the thesis;

- Scientific curriculum vitae (CV) in accordance with the international standards adopted by the Scientific Council of IPS-BAS;
- Master’s degree in science and education;
- Dissertation thesis;
- Abstract – in Bulgarian and in English;
- List of scientific publications on the topic of the dissertation with full bibliographic data, accompanied by separating protocols for those in co-authorship;
- Declaration of originality of the thesis, its results and contributions;
- Reference for the compliance with minimum national requirements.

The documents submitted are precisely formatted and arranged in accordance with the enclosed list.

2. Short biographical data about the PhD student

Bagryan Tzvetanov Malamin is a Master of Economics and Industrial Management, graduated in 1993 at the University of National and World Economy (UNWE), Sofia, Bulgaria. His research interests are in the field of digitalization and creativity in communications and marketing.

As of January 1, 2019, Bagryan Malamin is enrolled in a full-time PhD program at the IPS-BAS, for a period of three years (until December 31, 2021) and is discharged with the right to defend. The results of the educational and scientific activity of doctoral student Bagryan Malamin correspond to 300 credits and significantly exceed the required 200 credits according to the Regulations of the Center for Training at BAS for Doctoral Students after January 1, 2019. Bagryan Malamin has professional experience in working on scientific projects, which he accumulated during his studies at IPS-BAS.

During the three-year period, the PhD student participated fully in four significant research projects, which was an excellent opportunity to develop his personal research potential. These include: BEYOND4.0 (Inclusive Futures for Europe BEYOND the impacts of Industry 4.0 and Digital Disruption) (2019 – 2023), funded by the European Commission, Horizon 2020; SWIRL (Slash Workers and Industrial ReLations) (2019 – 2021), funded by the European Commission, DG Employment; SHARE-ERIC Bulgaria (Research Infrastructure of the National Roadmap for Scientific Infrastructure ‘Survey of Health, Ageing and Retirement in Europe – SHARE’) (2019 – 2021), funded by the Ministry of Education and Science - Bulgaria; EUROFOUND (National correspondent for Bulgaria at European Foundation for

the Improvement for Living and Working Conditions) (2022-2025), funded by the Eurofound. He speaks English and Russian.

Regarding the minimum national requirements, as well as those defined by the Regulations of the IPS-BAS, it is impressive that PhD candidate Bagryan Malamin achieved 92.5 points against the required 80 points for 'Doctor'.

3. Relevance of the topic and appropriateness of the aims and objectives

The European Commission considers Artificial Intelligence (AI) as one of the main drivers of digital transformation in Europe and a significant factor in ensuring the competitiveness of the European economy and a high quality of life. I congratulate Bagryan Malamin for the forward-looking choice of topic for his dissertation, which he made at a time when Bulgaria is just beginning to work more deeply on the issues by preparing some of the first strategic documents (Concept for the Development of Artificial Intelligence in Bulgaria by 2030, Artificial Intelligence for Smart Growth and Prosperous Democratic Society, 2020). In this context, Bagryan Malamin's dissertation is extremely topical because it focuses on the digitalization and the penetration of AI in selected creative professions (translators, graphic designers and copywriters (authors of advertising texts)), thus contributing to filling the knowledge gaps about the observed professionals in Bulgarian society, their attitudes and expectations from the penetration of digital technologies in their professions and how these professions are changing due to technology.

4. Knowledge of the problem

The PhD student has carried out a theoretical analysis and review of a total of 102 sources, of which 91 foreign language titles (English and Russian) and 11 titles in Bulgarian. The results obtained by a significant number of foreign and Bulgarian authors are correctly cited. The dissertation thesis is the result of a thorough research of the considered issues and creative application of the acquired knowledge and skills. It is also important to emphasize the PhD student's personal commitment to the problem. All three professions observed in the course of the dissertation research are close to Bagryan Malamin - he worked for many years in an advertising agency, where he performed the activities of a copywriter and translator, and the profession of a graphic designer is directly related to advertising work. Bagryan Malamin demonstrates theoretical and practical skills to independently conduct a comprehensive scientific study.

5. Research methodology

The aim and tasks, subject and object, as well as the hypotheses in Bagryan Malamin's dissertation are correctly formulated. The scientific work traces a phenomenon in dynamics - the digital transformation started in the XXI century, which is still ongoing. The research focuses on three professions that are expected in the scientific literature to be seriously affected by the advent of digitalization and artificial intelligence (Moorkens, 2017; Ross, 2017). The methodology is in accordance with the professional characteristics of the persons under study and is subordinated to the theoretical statements. Respondents are divided into 3 /three/ groups, according to the specificity of the creativity involved in each of the professions under study: *„What unites all three professions is creativity, and what distinguishes them is the way of ‚consumption‘ of creativity. These are the reasons why they are chosen - a creative re-creation of someone else's work - for translators, creative creation of images that aim to convey some message - for graphic designers and creative creation of textual content that should lead to persuading people to take any actions or to change their user behaviour - with the copywriters‘* (p.16).

The empirical information on the topic of the dissertation is gathered through two authors' empirical sociological studies. For the group of translators - a quantitative study, by means of a web-based survey containing 37 closed and 7 open-ended questions, covering three topics: use of new technologies, attitudes towards artificial intelligence, effects on the profession due to its use. For the group of graphic designers and copywriters, a mixed mode approach was successfully used - a quantitative (web-based survey) with a qualitative method (in-depth interview, implemented in a virtual environment using online meeting software). For the second group, the questionnaire consisted of 45 questions, 39 common to respondents from both professions and six specific to each profession, while the scenario (guide) for the in-depth interview consisted of 27 questions divided into three themes: research questions related to the understanding of automation and digitalization; those related to the definition of AI; and questions on how the profession is practiced, in the field of marketing. The chosen research methodology allows achieving the set aim and obtaining an adequate answer to the tasks solved in the dissertation. The results of the conducted studies (among 188 respondents from the group of translators and 41 from the group of designers, and copywriters (of which 35 respondents and 6 interviewees through in-depth interviews) are analysed, summarised in 10 tables and illustrated with corresponding 35 figures.

6. Characteristics and evaluation of the dissertation

The dissertation of Bagryan Malamin 'Artificial intelligence and the creative professions: sociological projections of their present and future interaction' has a total volume of 192 pages (introduction, three chapters and a conclusion – 155 pages, three appendices – 27 pages, references – 8 pages, list of appendices figures and tables – 2 pages).

In the introductory part the PhD student discusses the actuality of the topic, subject, object, research objectives, tasks, thesis, hypotheses, research questions and the structure of the dissertation. The author's sociological empirical studies implemented within the dissertation are described in general terms (they are presented at length in chapters two and three, respectively). The limitations of the dissertation are also outlined.

In chapter one, through a theoretical review of basic concepts, the terms dealt with in the research are derived and argued. An overview of the first three industrial revolutions is provided, with a focus on the Fourth Industrial Revolution, in the context of which digital transformation is impacting labour markets, employment and workers' skills. **Artificial intelligence as one of the key technologies of digital transformation in the context of the Fourth Industrial Revolution** is analysed in depth (Shwaab, 2016). The types of artificial intelligence are presented in detail, according to the two types of categorization - according to the functionality of artificial intelligence (including reactive artificial intelligence; artificial intelligence with limited memory; theory of mind; self-aware artificial intelligence) and according to the phases of evolution (narrow artificial intelligence; general artificial intelligence; artificial intelligence superior to human (artificial super-intelligence)). The relationship between Industry 4.0 and digital transformation is graphically illustrated (Figure 2, p.28). When exploring the impact of the digital transformation on labour, the PhD student refers to the classical XIX century theories of Emile Durkheim ('The Division of Labour in Society', 1893), Joseph Schumpeter ('The Theory of Economic Development', 1911), the classical labour theory of value advocated by Adam Smith, David Ricardo and Karl Marx, the theory of the distribution of marginal productivity, which is associated with neoclassical economics, theories of wages that are based on effort exerted by the worker (Herzberg, 1982), to focus his analysis on the concrete aspects of change due to technological change, but based on the understanding that **technology itself is not deterministic but can be moulded by social actors**, and more specifically to enrich his analysis through the transformative processes identified by Degryse (2016), Table 3, p.56. At the end of the chapter, the theoretical model of the thesis is presented, in which **the digital transformation is compared by the PhD student to a planetary mechanism** - each gear depends on the

main gear and transmits the torque in a different direction and with a different force. It is argued that **digital transformation from the macro level impacts labour down to its micro manifestations - routine tasks and how they are performed** (Figure 11, p.73).

Chapters two and three of the dissertation separately develop the research methodology among the profession of translators (chapter two) and graphic designers and copywriters (chapter three). The research problem, main thesis, aims and objectives are formulated; the subject and object of study are defined; and two main hypotheses are stated. The choice of the research approach and the applied methods for collecting empirical data (quantitative and qualitative) are argued in detail. The details related to the planning and organization of the research studies (including the period of the studies and the number of respondents/participants), as well as the limitations arising from them; the content of the questionnaires and the in-depth interview scenario (guide) are presented. Each chapter begins with a detailed theoretical overview of the evolution of the profession concerned.

In chapter two, the analysis of the empirical study focuses on translators' expectations concerning the future of their profession in the context of digital transformation. The data obtained as a result of the quantitative survey were processed statistically (using SPSS) - and presented in tabular and graphical formats. Statistical analyses for non-representative sampling, including descriptive statistics, grouping method, and multivariate distributions analysis were used in the interpretation of the results. Binary logistic regression analysis of probabilities was performed, and no confidence interval was interpreted. The main conclusion reached by the doctoral student is that **'translators do not believe that their profession will be destroyed** by the technological changes brought about by digitalization.... instead of being a 'job killer', **artificial intelligence, along with other digital technologies, is becoming an 'organizer of new activities within the profession'. Translators are becoming teachers of the system** and are not leaving their profession' (p.106).

In chapter three, the PhD student examines in detail the profession of designers and copywriters. It presents an analysis of the results of the author's empirical sociological research (using both quantitative and qualitative methods) to demonstrate the perceptions and attitudes of members of both professions about the likelihood that the future of their careers will be affected by the ongoing digital revolution. Data from the quantitative study were processed using SPSS, and statistical analyses for non-representative sampling, including descriptive statistics, grouping method, and multivariate distributions analysis were used in the interpretation of the results. A thematic analysis was conducted on the qualitative research findings. In both of these observed professions, the doctoral student comes to a similar

conclusion as with translators, ‘there is room for both - artificial intelligence and human creativity. **Machines will be ‘saddled’ with speed, organisation and efficiency, and creativity will be left to humans.** Machines will create, but within human-set limits, taking over the boring and ‘unprofessional’ activities’ (p. 150).

An important point is the fact that Bagryan Malamin at the end of each chapter draws ‘conclusions’ that not only summarize what has been said in the exposition, but also serve as a basis for the ‘transition’ to the research undertaken in the next part of the dissertation.

The conclusion contains the main findings of the field research with reference to the literature sources used in the dissertation and the formulated hypotheses of the research. One out of two hypotheses is confirmed, which is that there is no difference in the attitudes of all three groups of respondents towards artificial intelligence and its impact on professions. In this sense, **the results of the study are distinguished from views of digital transformation as ‘the end of human labour’** (p.155). The analysis of the empirical studies conducted by Bagryan Malamin does not suggest job destruction as predicted by Brynjolfsson and McAfee (2014), but rather joins the empirical findings of Bessen (2016), who rejects the view that computer automation is a source of general job loss: occupations (even high-routine ones) that are automated grow faster.

The appendices contain the quantitative research questionnaires and also the scenario (guide) used to conduct the qualitative research.

7. Contributions and significance of the research for science and practice

I accept Bagryan Malamin authorship claims for scientific and applied contributions in the thesis, which are well approbated and popularized through publications on the problem area he works on and his participation in various forums and symposia, including through media performances.

I would like to explicitly highlight one of the contributions of the dissertation, specifically the focus of research on creative professions (rather than routine ones), which in Bulgaria (and in Eastern Europe in general) remain outside the field of scientific analysis. I appreciate the doctoral student’s efforts to illuminate precisely the views and attitudes of the representatives of these groups of artists, for whom there is a lack of even up-to-date and reliable official statistics on their number and structure.

8. Evaluation of publications on the dissertation

In the competition for obtaining educational and scientific degree ‘Doctor’ Bagryan Malamin participated with 3 /three/ publications, 2 /two/ of which in co-authorship with the scientific supervisor – one of them, published in scientific journal, refereed and indexed in world-renowned databases with scientific information (Scopus and Web of Science); and one independent publication – chapter, published in an edited volume with scientific peer review. For the co-authored publications, separation protocols are provided, which make it clear that Bagryan Malamin has equal credit for the development of the joint texts.

The independent publication of the PhD student confirm his own position and serve as evidence of his personal contribution to the researched issues.

Two of the three publications are in English and one is in Bulgarian, which ensures good promotion of the results in the country and abroad.

One of the publications co-authored with the scientific supervisor is cited 7 /seven/ publications, most of which are refereed and indexed in world-renowned databases with scientific information (Scopus and Web of Science).

Bagryan Malamin’s participation in international forums and symposia (a total of 4) also contributes to the dissemination of his scientific results within his PhD in Sociology and recognition among the academic community abroad.

I find it important to add the doctoral student’s media performances on the topic of his dissertation at the Bulgarian National Radio (BNR) - the program ‘Labyrinths of Knowledge’ and at the Bulgarian News Agency (BTA) - within the initiative ‘Bulgarian Voices for Europe’, which further testify to the public interest and bringing the results of his research to a wide audience in the country.

9. Abstract

The submitted abstract consists of 45 pages, is prepared in accordance with the requirements and correctly reflects the content and structure of the thesis, presenting the main results achieved in the dissertation research. It also describes the links between the aims, objectives, contributions, exposition and publications of the dissertation. Self-assessment of scientific contributions is presented.

10. Critical comments and recommendations

The PhD student Bagryan Malamin critically points to the lack of the perspective of the representatives of the labour users of the creative professions as a limitation of his thesis. I encourage the PhD student in his future sociological searches and research interests, to track

the expectations of corporate and individual contracting authorities regarding artificial intelligence. Moreover, according to the results of the surveys carried out in the field, the opinion is shared that *'it is the business that will determine to what extent these professions will exist in the future. Once businesses start doing without them, the need for their existence will disappear and they will disappear at the expense of artificial intelligence'* (p.154).

I recommend that the dissertation be published as a monograph, taking into account the revision of the bibliographic reference, which contains some inaccuracies and Fig. 6, p. 51 (Job loss according to scenarios, by occupation. Source: Technequality, 2020) to be revised in Bulgarian. The text should be edited to remove spelling and technical errors.

11. Personal impressions

I have known Bagryan Malamin since his enrolment as a full-time PhD student in the 'Knowledge Society: Science, Education, and Innovations' department at IPS-BAS in 2019. I have had the opportunity to observe his work on several major international projects as well as one national project. At the time, Bagryan Malamin was working on his PhD thesis and despite his busy schedule, he showed exceptional professional commitment and conscientiousness. He was able to establish good collegueships and develop his potential as a researcher. The consistent efforts of Bagryan Malamin to form a rich sociological culture and research skills have made a strong impression over the years. Bagryan Malamin is distinguished by perseverance, self-discipline, high self-criticism and initiative.

Conclusion

The dissertation *contains scientific and applied results that represent an original contribution to science* and **meet the requirements** of the Act on Development of the Academic Staff in the Republic of Bulgaria (ADASRB), the Regulations for the Implementation of the ADASRB, the Regulations on the Conditions and Procedure for the Acquisition of Scientific Degrees and for the Occupation of Academic Positions at the BAS and the Regulations of the IPS on the Conditions and Procedure for the Acquisition of Scientific Degrees and for the Occupation of Academic Positions.

The dissertation thesis shows that the PhD student Bagryan Tzvetanov Malamin **has** in-depth theoretical knowledge and professional skills in the scientific specialty 05.11.01. Sociology by **demonstrating** the qualities and skills to independently conduct scientific research.

In view of the foregoing, I confidently give my *positive evaluation* of the research presented by the above-reviewed dissertation, abstract, results and contributions, and *propose to the Honourable Scientific Jury to award the educational and scientific degree 'Doctor'* to Bagryan Tzvetanov Malamin in the field of higher education 3. Social, economic and legal sciences; professional area 3.1. Sociology, anthropology and cultural sciences, scientific specialty 05.11.01 Sociology.

08.02.2024

Prepared the review: .

Assoc. Prof. Gabriela Yordanova, PhD