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ABSTRACT

of a dissertation for the acquisition of the educational and scientific degree "doctor"

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

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The dissertation consists of an introduction, three chapters, a conclusion, three appendices, and a bibliography, with a total volume of 192 pages. 102 titles in Bulgarian, English, and other languages are indicated in the cited bibliographic sources. There are 10 tables and 35 figures.

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Content of the dissertation

List of figures and tables	5
Introduction	7
Hypotheses	16
Author's empirical sociological research within the framework of the dissertation	18
Dissertation Limitations	19
Chapter One. Technological change, its impact on professions, and manifestations of artificial intelligence.	22
The first three industrial revolutions	22
The Fourth Industrial Revolution	24
The digital transformation	28
Technologies of digital transformation	29
Artificial intelligence as part of Digital Transformation technologies	32
Artificial intelligence and its application in creative professions	41
Which professions are creative?	42
Artificial intelligence in marketing creativity	43
Impact of digital transformation on labour	44
It has been so in the past	44
Schumpeter's Creative Destruction	45
Job destruction	48
The threatened professions	50
Job creation	54
Impact of digitalization on jobs and professions	55
Changing professions	61

Platformisation	63
Theoretical model	71
Chapter Two. Expectations and attitudes of translators in Bulgaria regarding the impact of artificial intelligence on their profession	75
Research Questions	80
Methodology of Empirical Sociological Research	82
Attitudes of translators towards technology	88
Summary	106
Chapter Three. Expectations and attitudes of graphic designers and copywriters in Bulgaria regarding the impact of artificial intelligence on their profession	109
Evolution of the "designer" and "copywriter" professions	114
Principles on which graphic design is based	116
Where does artificial intelligence fit into graphic designers' activities right now?	117
Activities that copywriters perform	119
Where has artificial intelligence currently "settled" in the creative activities of both professions?	121
Methodology of Empirical Research	122
Results of the study	124
The attitude of designers and authors of advertising ideas and texts (copywriters) to modern technologies	129
Summary of Chapter Three	148
Conclusion	151
Bibliography	157
Applications	165
Appendix 1 Survey card. Study of the attitudes of translators in Bulgaria regarding the impact of artificial intelligence on their profession	165

Appendix 2. Survey card. Study of the attitudes of graphic designers and copywriters in Bulgaria regarding the impact of artificial intelligence on their profession 176

Appendix 3 Questions for interviewing with persons practicing creative professions 188

The abstract follows the aforementioned structure of the dissertation work.

The dissertation examines the attitudes and expectations of persons with creative professions – translators, graphic designers and copywriters¹ towards the digital transformation and the deployment of artificial intelligence based technologies into their work. The analysis is focused on the extent to which these groups of people feel threatened by the entry of digital technologies into their occupations and how these occupations are changing as a result of technology.

The 21st century began with a change that is still ongoing. This change is the digital transformation² – the integration of digital technologies in all areas of life. The digital transformation is fundamentally changing the way people live, communicate and work³. Digitalization is the application of digital technologies in all spheres of life. Industry 4.0 or the Fourth Industrial Revolution is a manifestation of digital transformation.

Regarding labour, digitalisation and the technologies of Industry 4.0. lead to four transformational processes: job destruction, new job creation, changing occupations themselves, and changing employment (Degryse, 2016). After 2013, the scientific literature began to assert the opinion that the main transformation process will be the closing of jobs. More specifically, as a result of digitalisation, work and employment are expected to radically change, as the introduction of artificial intelligence and other digital technologies will lead to massive job losses (Frey & Osborne, 2013).

¹ The word copywriter was adopted from English and was composed of two other words - copy - manuscript, text and write - write. The word has been in the Bulgarian language relatively recently, with the advent of the market economy and the emergence of the need to create advertising messages. The old name of the profession, used among advertising specialists in socialist Bulgaria, is *texter - lyricist*, again borrowed from English. A copywriter is a specialist who convinces about the qualities of various products, services or ideas by means of text. The activity that the copywriter performs is called copywriting.

² In the dissertation, the term digitization is used as a synonym for digital transformation.

³ i-SCOOP. (n.a.). What is digital transformation ? The essential guide to DX. <https://www.i-scoop.eu/digital-transformation/>

Until recently, the main interest in the impact of digitalisation was focused on routine tasks and professions, whose activities and tasks can be optimized through automation and the application of one of the technologies of Industry 4.0 - artificial intelligence. However recently this interest has also been directed to the creative spheres. Many authors predicted the total disappearance of some professions, for example, translators (Poc, 2017).

Within sociology, many studies have been conducted on the replacement of routine activities and tasks by technology, but their emphasis has rarely been placed on creative activities and occupations. So far, no empirical evidence has been presented in the literature that these creative professions are disappearing. Moreover, in Bulgaria, there is a lack of research on the impact of digitalization on creative professions, and this is one of the reasons why the current dissertation seeks to fill this gap - namely, to examine the attitudes of three creative professions in Bulgaria towards technological change.

There is a view in the literature that the creative professions of translators, designers, and copywriters will be seriously affected by the advent of digitalisation and artificial intelligence (Moorkens, 2017) (Poc, 2017). The specific dimensions of these changes are numerous: new tools are constantly emerging that automate their activities, and help them to perform their tasks faster. Also, new ways of finding work and tasks are increasingly entering, for example through the so-called online platforms, which also leads to an increase in freelance work, at the expense of permanent employment (Kirov & Yordanova, 2020).

In this context, it is necessary to understand how this relates to those working within the creative professions in Bulgaria and what their expectations are - for example, how worried they are about their future, what activities and tasks would disappear as a result of the digital transformation, what new would appear and in what form. In other words - how they see the future of their professions.

Digitalisation has been a fact for nearly 20 years, and one of its manifestations in recent years is the entry of artificial intelligence into all spheres of life, including creativity. It is one of the main technological characteristics of the Fourth Industrial Revolution (Shwaab, 2016), and the combination of machine-man-computer is a description of its manifestation: virtual reality, computer games, computer assistants - Siri (Apple), Cortana (Microsoft), smartphone applications that recognise speech, smart watches, searching for information through voice recognition, etc. Examples of this are also Google and Amazon's home assistants, text prediction when writing messages, etc. In the last couple of years, it has become more and more common in the media to appear sensational rather than analytical publications about artificial intelligence that can draw pictures, compose music, enhance images, write essays, etc. n.

That is why the two author's empirical sociological studies, carried out within the framework of this dissertation project, fill this gap in the Bulgarian academic literature - regarding the processes of digitalisation and its impact on creative professions. For example, the professions of translators and/or advertising creative professions are generally not sufficiently researched in Bulgaria. Since our country is not aside from the processes happening around the world - the digital transformation is also happening in our country, but it does not enter all spheres of life at the same time - it is important to understand what its specific dimensions are and how the workers experience them.

Creativity is one of the human abilities that is believed to be the most difficult to be usurped by artificial intelligence. Creative professions use creative thinking and require a non-standard approach when dealing with a task, therefore the topic of artificial intelligence and its entry into creative professions is significant and relevant. Artificial intelligence (computer technology that deals with simulating intelligent behaviour in computers, the

ability of a machine to imitate and/or perform intelligent human behaviour⁴) as a technology of digitalisation will change the way of work, will have an impact on employment, on skills, on education, on the demand and supply of creative services. Knowledge of the impact of artificial intelligence on creativity will help predict economic processes related to employment, culture, the economy in general, and the implementation of national policies related to employment.

Artificial intelligence, in turn, is one of the most important technologies of digital transformation. Artificial intelligence is the ability of a computer or computer-controlled robot to perform activities normally performed by intelligent creatures, i.e. people⁵. According to the Encyclopaedia Miriam-Webster, “Artificial intelligence is a branch of computer science that deals with simulating intelligent behaviour in computers. The ability of a machine to imitate and/or perform intelligent human behaviour.” The term was first used in 1956 by John McCarthy⁶ during the Dartmouth Conference on Artificial Intelligence in 1956. This conference marked the beginning of artificial intelligence research and gave subsequent generations of scientists the first insight into the potential of information technology to be of great benefit to people.

The dissertation **aims** to reveal, define, and describe the views and attitudes of people with creative professions about the entry of artificial intelligence into their professions. The purpose of the dissertation is to answer the question of why the study of artificial intelligence and the projection of its future interaction is important for the creative industry's attitude to digital transformation.

⁴ Artificial Intelligence - Definition taken from here: <https://www.merriam-webster.com/dictionary/artificial%20intelligence>

⁵ Artificial Intelligence - Encyclopaedia Britannica publication, <https://www.britannica.com/technology/artificial-intelligence>

⁶ Dartmouth Artificial Intelligence (AI) Conference | LivingInternet . (2021, April 27). LivingInternet . https://www.livinginternet.com/i/ii_ai.htm

The research tasks of the dissertation are to determine possible problems in the practice of creative professions arising from the digital transformation, to hypothesize and describe future new activities and requirements for creative professions, to determine the place of artificial intelligence in the practice of the professions of translators, graphic designers, and copywriters.

The subject of the dissertation research is the impact of artificial intelligence ⁷on creative professions. More specifically, the research interest is directed to how much Bulgarian translators, designers, and copywriters are aware of the introduction of thinking machines whether they feel threatened by its development and entry into their professional sphere, and how it would affect their future activities.

The object of research interest is representatives of several creative professions – translators, graphic designers, authors of advertising texts, and creative concepts in marketing agencies or freelancers.

The three examined professions were chosen for two reasons - the first is the author's commitment to all three professions - 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. The second reason is related to creativity, which is at the core of the three professions, and what distinguishes them is the specificity of each of them.

Artificial intelligence is starting to create content⁸, compose music⁹, write scripts, and create art¹⁰. Since content is organically generated by humans, artificial intelligence creates media content based on a given title only¹¹. For

7 In the literature, thinking machine is used as a synonym for artificial intelligence.

8 An AI- Written Novella Almost Won a Literary Prize , Smithsonian magazine , March 2016,
<https://www.smithsonianmag.com/smart-news/ai-written-novella-almost-won-literary-prize-180958577/>

9 The Artificial Intelligence composing emotional soundtrack music

10 Midjourney : Art in the Age of Artificial Intelligence . <https://www.midjourney.org/>

11 Generate unique text with THE AI article writer . <http://ai-writer.com/>

example, the Russian design bureau of Artemiy Lebedev uses artificial intelligence to create trademarked characters and images, presenting him as an employee to the company's customers¹². This employee is still imperfect, and its existence is more an argument for the technological advancement of the desk than a true generator of graphic ideas. Another example is Turkish home appliance manufacturer Beko, which used artificial intelligence to create one of its latest TV commercials¹³.

Technology has long been making inroads into language translation, too, with word processing, proofreading, translation management software, and programme software, and then with various forms of electronic dictionaries, proofreading software, and translation management software. In recent years, programmes have also appeared that can translate automatically, with high or somewhat high quality. Examples of this are Google Translate, Mem Source, and *SDL Trados*.

The dissertation defends the following **thesis**: The entry of artificial intelligence into the creative professions of translators, graphic designers and copywriters will not have a negative impact on the future of the three professions - the three professions will not disappear, but will change. Artificial intelligence is a tool that helps creatives work better and faster.

In the process of working on the dissertation, two hypotheses were formulated:

The first hypothesis - there is no difference in the attitude of all three professions regarding artificial intelligence.

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

¹² Create unique logo and brand book in seconds with neural network .
<https://ironov.artlebedev.ru/ru/>

¹³ Beko 's new ad , created with the participation of artificial intelligence. <https://redlink.bg/novata-reklama-na-beko-sazdadena-s-uchastieto-na-izkustven-intelekt-347news.html>

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.

The **second hypothesis** - is that the respondents have a negative attitude towards the influence of artificial intelligence and its entry into their creative professions.

Concerns that respondents may express regarding the impact of artificial intelligence on their professions may include:

- Fear of people being displaced by machines;
- Loss of creative control;
- Negative impact on the quality of the creative product;
- Need to acquire skills to work with artificial intelligence.

Research questions were formulated, aiming to clarify which activities practised in all three professions would disappear, which tasks performed by the subjects of research would change as a result of artificial intelligence, what are the expectations of translators, graphic designers and copywriters in terms of entry of artificial intelligence, how would each of the three professions deal with the challenges of artificial intelligence in this situation?

To gather empirical information, **two author's empirical sociological studies were conducted**.

The **first is a quantitative study** on the attitude of Bulgarian translators towards the introduction of artificial intelligence, which examines whether and to what extent Bulgarian translators know about artificial intelligence and how they assess the impact of technology on the translation profession - what lies ahead for their profession. The non-representative research, with the object of the translators in Bulgaria, was conducted according to the method of the respondents in the period August - October 2019. The questionnaire card

included 37 closed and 7 open questions, covering three topics: use of new technologies, attitude towards artificial intelligence, and effects on the profession because of its use. The survey card was created on the SurveyMonkey platform and distributed through Facebook groups of freelancers. The survey was completed by 188 respondents.

The second author's research, conducted in August - December 2021, examines the attitude of Bulgarian designers and authors of advertising texts to the development of their profession and the influence of digitalization and artificial intelligence. Empirical information about it has been collected through quantitative and qualitative research. Quantitative research was conducted using the respondent method - a survey of 45 questions, of which 39 were common to respondents from both professions and six were specific to each profession, conducted through the online polling and survey platform again on the SurveyMonkey platform. 109 representatives of the professions responded. Quantitative research is supported by qualitative research - a series of six semi-structured interviews conducted online - using online meeting software.

The analysis proposed in the dissertation also takes into account certain **limitations**.

The first limitation was related to the definition of the general population of the target groups. There are no data on the total number of translators in Bulgaria. The only available data is the number of sworn translators published on the website of the Ministry of Foreign Affairs (as of May 2023 the site is no longer active).

The second limitation was related to the definition of the set of working creative professions – designers and copywriters. The number of representatives of this target group is also unknown.

A third limitation was the conducting of the semi-structured expert interviews with professionals from the marketing creative community. In the conditions of a pandemic and restrictions on travel and physical interaction,

the willingness of specialists to respond to an invitation is very low - the unusual way of remote work and remote meetings is a major factor in their fatigue and a reason for refusing an interview. The interviews were conducted online, with the recordings subsequently transcribed.

The first study was conducted in 2019, and this means that there may be some change in the expectations and attitudes of translators due to the rapid development of technology - the entry of DeepL¹⁴ into translations and the entry of generative artificial intelligence such as ChatGPT¹⁵, Scribe¹⁶, DALL E¹⁷ and others.

Within the framework of the dissertation, representatives of the creative professions were investigated, but not respondents from the companies that employ them and use their services.

The first chapter of the dissertation presents the theoretical framework of the analysis. Here, the latest industrial revolution is examined, in the context of which digital transformation is impacting labour markets, employment and the skills of workers. Of particular interest in my analysis is artificial intelligence as one of the main technologies of the digital transformation, in the context of the Fourth Industrial Revolution (Shwaab, 2016). In the scientific literature, technological change has always been the subject of considerable social science interest. This is because of the potentially disruptive impact of new technologies, both on work and well-being, including in the context of digital transformation (Warhurst et al, 2019).

However, the digital transformation is not limited to industrial production but applies to all sectors of the economy, including healthcare, finance, retail

14 DeepL Translator is a neural machine translation service that launched in August 2017 and is owned by Cologne-based DeepL SE. The translation system was developed first within the Linguee online dictionary .

15 ChatGPT is a chatbot developed by OpenAI . Based on a language model, it allows users to refine and direct the conversation to the desired length, format, style, level of detail and language. ChatGPT stands for Chat Generative Pre-Trained Transformer

16 Scribe is an artificial intelligence tool that documents workflows and guidelines in organizations.

17 DALL-E 3 are models for generating digital images from natural language descriptions. It was developed by OpenAI , the creator of ChatGPT .

and transportation, among others. Digital transformation involves not only technological but also cultural change that requires organizations to embrace innovation and continuous improvement and adapt to changing customer needs and market dynamics. Industry 4.0 and digital transformation are closely related concepts that share a common goal of using digital technologies to drive innovation, improve operations and create new value for customers.

The technologies most often involved in digital transformation:

1. The Internet of Things. By connecting devices, machines and objects to the Internet to share data and communicate with each other.
2. Analysis of big data. Big data refers to the large and complex data sets that are generated by machines, sensors and other devices.
3. Artificial intelligence. The key is developing computer systems that can perform tasks that normally require human intelligence, such as image and speech recognition, natural language processing, and decision-making.
4. Additive manufacturing (three-dimensional printing).
5. Cloud Computing. Cloud computing involves providing computing services such as storage, processing power, and software applications over the Internet.
6. Cyber Security. With the increasing use of digital technologies, cybersecurity has become a critical concern for businesses and organizations.
7. Augmented reality and virtual reality - create immersive digital experiences that combine the physical and digital worlds. Augmented reality overlays digital information in the real world, while virtual reality creates a simulated digital environment.

Artificial intelligence is one of the most important technologies of digital transformation. Intelligence is the ability of a computer or computer-controlled robot to perform activities normally performed by intelligent creatures, i.e. people (Copeland, 2020).

Categorization of artificial intelligence according to phases of evolution includes "narrow artificial intelligence" and "general artificial intelligence". "Narrow AI" specializes in one area, in the solution of one problem. This is the only kind of artificial intelligence that exists today; no matter how complicated it seems to us. The machine performs tasks for which it is pre-programmed, and performs them so well that it gives the impression of an intelligence comparable to that of a human (Kumar GN, 2018). A characteristic of general artificial intelligence is that it learns, perceives, reasons and functions like a human (Joshi, 2019). It is still spoken of in the future tense. He will perceive the environment as humans perceive it. No examples can be given for him now. (Todorova, 2019, стр. 96 - 97). The literature also speaks of artificial intelligence as superior to humans (Artificial Super-Intelligence) - Again in the future tense - a software-based system with intellectual abilities beyond those of humans in an almost exhaustive range of categories and fields of endeavour.

Considering the development of society, the digital transformation, the development of media and technologies of expression, entertainment (part of the creative industry) and defence (virtual reality, augmented reality), it can be said with certainty that this human activity does not remain overlooked by the entry of artificial intelligence.

Creativity influences and uses emotions. In this context, artificial intelligence will reflect in many aspects related to creative professions. In this case, we are talking about a general artificial intelligence that will replace people in creative work, not a tool that helps people create or express their creativity better, but no matter how much we want to talk, we won't be able to, because we can only we guess what will happen in the future. To date, there have been created works of artificial intelligence, but with a narrow "speciality", there is still no completed interdisciplinary work - a combination of several creative disciplines. For now, AIs perform simple creative tasks, however difficult they may seem to us, they are difficult because of the programming and training, not because of the tasks they perform.

It is important to note that human creativity is an invention of the modern age. Premodern human societies do not know creativity applied to any other than "divine" activity. Creativity as a creative human activity - the creation of new, previously non-existent forms, appeared during the Renaissance (Gornev, 2000).

The study of the impact of technological change has been a major topic in sociology since the 19th century. To understand contemporary realities, it is necessary to look to the classics of sociological science.

In his 1893 book *On the Division of Social Labour*, the French philosopher Emile Durkheim (Durkheim, 2002) analysed the maintenance of social order through the division of labour in society. He argued that the division of labour is a fundamental feature of modern societies and plays a crucial role in promoting social order.

According to him, rapid economic development precedes the creation of adequate norms and rules for regulating human behaviour. In traditional societies, individuals perform similar tasks under the conditions of a limited division of labour, while in modern societies there is a high degree of specialization and interdependence between different occupations and social roles.

When the division of labour becomes too unbalanced, according to Durkheim, the so-called anomie - a state of abnormality and moral confusion. This opens the way for deregulation in society. In this context, Emile Durkheim believed that morality, not economics, should become the main social problem.

Overall, Durkheim's analysis of the division of labour provides insight into how societies are organized, the role of specialization, and the importance of social solidarity in maintaining social order.

In his book "The Theory of Economic Development", published in 1911, Joseph Schumpeter examined innovations and emphasized their main role in economic development - according to him, they are not limited to

technological inventions, but create new business models and new ways of organizing production and new marketing strategies. The introduction of innovations by entrepreneurs leads to a process of creative destruction in which established relationships and industries are replaced by new ones.

In 1943, Joseph Schumpeter further developed his theory of economic development in his work "Capitalism, Socialism and Democracy" (Schumpeter, 2006). According to him, economic progress is primarily driven by the introduction of new products, processes or business models. These innovations disrupt existing industries, technologies and market structures, creating new economic opportunities and displacing old ways of doing things.

In 2013, based on a complex analytical approach (occupational analysis, task analysis, labour market analysis and expert research), Frey and Osborne created an Occupational Vulnerability Ranking by calculating the average automatability for each occupation (Frey & Osborne, 2013, p. 37). Occupations with higher average scores are considered more susceptible to automation and those with lower scores are less susceptible. By applying the assessment of each occupation to the historical employment data of those practising that occupation, they predict potential job losses due to digitalisation. According to Frey and Osborne, 47% of jobs in the US in 2013 were at risk of being replaced by digital computing technologies (Frey & Osborne, 2013).

A benchmarking analysis commissioned by the Organization for Economic Co-operation and Development (OECD) (Arntz, Gregori, & Zierahn, 2016) affirms that on average only 9% of jobs in OECD countries could be replaced in the process of digital transformation. Specifically, it argues that "the share of 'jobs at risk' should not be equated with actual or expected employment losses from technological advantages for three reasons: first, the use of new technologies is a slow process due to economic, legal and societal obstacles, so that technological substitution often does not take place as expected; second, even if new technologies are introduced, workers can adapt to changing technological conditions by changing their assigned work tasks, thereby preventing technological unemployment; third - technological change

also creates additional jobs through the search for new technologies and through higher competitiveness. The results of the analysis applying this approach show that in the US only 9% of jobs fall into the "highly automatable" category, much less than the 47% estimated by Frey and Osborne. In the last few years, other studies have been published that are based on a similar methodology, and that make predictions about what and how many jobs will be destroyed in certain countries and/or sectors, with their authors gradually becoming more moderate in their predictions.

As with all technological revolutions to date, there is a perception that workers will lose their jobs, but what turns out to be the case is that while this is true for some occupations, it is not for others, more so new activities arise and the effect can be completely reversed. The author is more inclined to support the camp that believes that digitalisation provides opportunities to create new jobs. According to a key 2018 article: "*the net labour demand effect exceeds the employment effect by 1 million jobs, suggesting that even more jobs would be created* (Salomons, Gregory, & Zierahn, 2019). "

According to them, the expectation of job losses due to automation is not happening - as a result, over the last 10 years, 1.5 million new jobs have been created in 27 European countries. As a result of robotisation and digitalisation, 1.6 million manufacturing jobs were lost between 1999 and 2010, but three times as many new jobs were created. On the other hand, the application of computers and robots makes goods cheaper to produce – so consumers buy more and create new jobs. Companies generate more profit, which also leads to higher consumption and, in turn, more jobs. In this way, three million new jobs were created - twice as many as lost (Salomons, Gregory, & Zierahn, 2019).

According to Brynjolfsson and McAfee (Brynjolfsson & McAfee, 2014) computer technology is destroying jobs at an increasing rate, thereby creating technological unemployment and growing economic inequality. Certain occupations may become obsolete or disappear due to technological advances. However, it is important to note that while some occupations may

disappear, new ones often emerge in response to changing needs and technological innovation.

In his article "How Computer Automation Affects Occupations: Technology, Jobs, and Skills" (How Computer Automation Affects Occupations: Technology, jobs, and skills) (Bessen, 2016), James Bessen disputes the views of Brynjolfsson and McAfee. He examines the basic relationships between computer automation and occupations and, using a general model of occupations and tasks, examines occupations in detail since 1980 to examine whether computers are associated with job losses or other sources of wage inequality.

Empirically, Bessen shows that computer-based occupations are growing faster, not slower—even for highly routine occupations. His estimates run counter to the view of computer automation as a source of significant overall job loss. Thus, within this model, employment grows significantly faster in occupations that use more computers. However, computerized occupations are replacing other occupations, changing employment and requiring new skills.

Within these debates, the voice of social scientists is growing louder, challenging their colleagues' visions of job destruction and the "end of work." Indeed, technologies themselves are not deterministic because they do not possess inherent qualities or outcomes. The impact and consequences of technologies depend on how they are designed, developed, implemented and used. Digital technologies, and technologies in general, can be shaped and influenced by social, economic and cultural factors (Warhurst et al, 2019).

Understanding the non-deterministic nature of technology is important because it highlights the role of human factors and decision-making in shaping the outcomes and consequences of technological progress.

In a study on the digitalisation of banking services in Europe – the United Kingdom and the Grand Duchy of Luxembourg, Andreas Kornelakis, Vassil Kirov and Patrick Thill argue that “the driving force behind job losses is still

offshoring ¹⁸ (Kornelakis, Kirov, & Thill, 2022), not automation and digitalisation, at least for now. They also agree with the view that expected job losses due to automation are exaggerated (Grimshaw, 2020).

Christophe Degryse identifies four possible effects of digital transformation in the report "Digitalisation of the economy and its impact on labour markets" (Degryse 2016):

1. Creation of new professions in new sectors, new products and services.
2. Changing professions - new forms of worker/machine interaction; new forms of work - the so-called "uberisation" - which lead to new risks (work intensification, health and safety, an increasingly blurred line between private/work life, training mismatches, discrimination, etc.); managerial level effects (new digital management).
3. Job Destruction: The jobs at risk from computerization, automation, and robotisation over the next ten to twenty years are increasing. Although there is no consensus on how many jobs will be lost, it is clear that the numbers will be very high.
4. Changing activities: the development of digital platforms where workers from countries with high levels of social protection are placed in a competitive environment with those from countries with low levels of protection and developing countries. Transfer of services facilitated by "sharing economy" platforms is also applicable to highly skilled jobs such as accounting, finance, etc.

Degryse clearly describes the effects of digital transformation on professions. Based on these four effects, and following Frey and Osborne's views on the effect of digitalisation on occupations, he presents three types of activities - activities that may disappear, i.e. are at the greatest risk, the least threatened activities and the third type – new activities that may arise (Degryse, 2016).

¹⁸Transfer of business activities - production or services, to a country other than the country in which the company is located, through outsourcing .

Scientists are still divided on the issue of job losses. The work of Frey and Osborne is considered a cornerstone of theories of job loss, but as it turns out, it has received many criticisms. It should also be borne in mind that Frey and Osborne's prediction is from 10 years ago – and that is a long time given the current dynamic digital environment. The opinion of the author of the present work is that the pessimistic forecasts will not come true in the coming years. Just as the Luddites in the First Industrial Revolution broke the looms because they would take away their jobs, now there are movements against technological change characterised by nostalgia, but rather because of human nature and its resistance to the new. Industry 4.0 will certainly affect employment, but this does not mean that people will be out of work. Usually, and in previous historical periods, the pessimistic predictions of "technological" job theft do not come true, as demonstrated in the International Labour Office's 2019 report, *Technological Change and the Future of Work: Let Technology Work for All* (ILO, 2019). The research and analysis discussed in this chapter suggest that there is no reason for this to be any different.

In fact, as with previous technological revolutions, there is a view that workers will lose their jobs, but subsequently, this turns out to be true for some occupations and not for others, and new activities also arise, and the effect can be quite the opposite, and namely, related to the emergence of new professions and jobs.

In the context of changing jobs and the tasks that are performed within individual professions, it is important to refer to the works of the German sociologist, Sabine Pfeiffer, who conducts sociological research and analysis of the impact of automation and robotics on labour activity in the context of digital transformation (Pfeiffer, 2016). In her research, she examines collaboration between humans and robots in the context of assembly work. Rather than replacing humans, robots can be integrated into manufacturing processes to complement human capabilities, increasing efficiency and quality. This symbiosis involves the development of interfaces and technologies that enable effective interaction between humans and robots.

Pfeiffer emphasizes the complex and skilled aspects of assembly work tasks and argues that human-robot collaboration is essential, not a complete replacement of one by the other (Pfeiffer, 2016).

Thus, the literature review reveals that digital transformation has a significant impact on jobs and professions. In particular, it affects the nature of work, skill requirements and employment opportunities. The main ways in which digitalisation can change occupations are summarized:

1. Automate routine and repetitive tasks. This may lead to the elimination or reduction of demand for jobs that primarily involve such tasks.
2. Creation of new tasks - new ones arise because of technological progress.
3. Modification of existing jobs. Digitalization transforms existing work tasks by integrating digital technologies into work processes.
4. Increasing the importance of digital literacy. As digitalisation advances, digital literacy becomes critical to success at work.
5. Platforms offer flexible employment opportunities. Freelancers use digital platforms to find work and connect with clients.
6. Lifelong learning and skill development. Digitalisation creates a demand for courses and opportunities to improve qualifications.

Based on the critical analysis of the literature, **the theoretical model** of the dissertation was created (which is presented graphically in Figure 1). At a macro level, digital transformation refers to the impact of digital technologies on various aspects of life, leading to changes in the way work is done. At this level, digital transformation has the potential to drive economic growth and productivity. By using digital technologies, companies and organizations can streamline operations, increase efficiency, save costs and thus improve their competitiveness.

- Digital transformation technologies are disruptive because they destroy already established industrial relations, traditional work methods and production chains. This leads to the emergence of new players, new business models and market dynamics.
- Digital transformation affects work - specifically, it changes jobs, changes required skills, work activities and employment patterns.

At an intermediate level, the dissertation examines how and to what extent the digital transformation scares professions, how it will change them, and whether some will disappear or new ones will appear. Will the translation profession disappear, as Alec Ross predicts, (Poc, 2017) or will it change?

- Changing work - digital transformation often leads to changing tasks and responsibilities.
- Digital transformation requires workers to develop and improve their skills and qualifications.
- Remote work - digital transformation facilitates virtual communication and interaction.

At micro level, the dissertation focuses on three professions that are affected by digital transformation. What exactly is the impact of artificial intelligence on creative professions - translators, graphic designers and copywriters? The topic of artificial intelligence and its threat to creative professions is trendy right now. ChatGPT enters not only as a text writer, but also as a conversation topic.

The own empirical sociological research in the dissertation aims to reach an answer to the research questions - to what extent Bulgarian translators, designers and copywriters are worried about the future of their professions, what activities from their professions would disappear, would change and what new tasks would be appeared, how they see the way of work in the future, what they expect from the introduction of artificial intelligence.

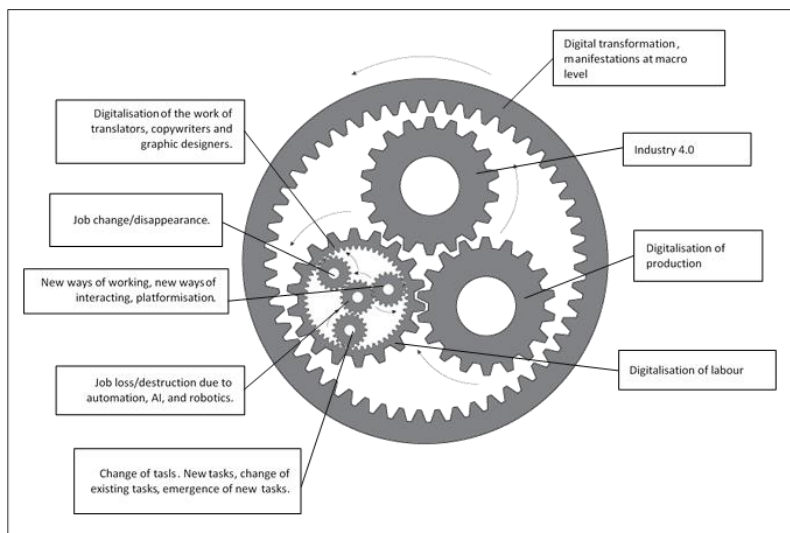


Figure 1. Graphical representation of the theoretical model of the dissertation. Own development

The **second chapter** of the dissertation presents the results of the conducted empirical sociological study of the attitudes of translators in Bulgaria regarding the impact of digital technologies and artificial intelligence on their profession. An important focus of the research is to analyse the extent to which translators in Bulgaria are afraid of automation and the introduction of artificial intelligence. It also looks at how worried they are about their future as a result of digitalisation. The future of their profession is also a subject of research. The question is whether it will disappear, as Alec Ross (Poc, 2017) and Frey and Osborne predict (Frey & Osborne, 2013) or new, previously unknown activities will arise, the characteristics of which could be reasonably guessed.

The non-representative survey with the subject of translators in Bulgaria was conducted using the respondent method in the period August - October 2019. 188 questionnaires were filled out online. The subject of research is the attitude of translators in Bulgaria towards machine translation - the automation of processes and the application of artificial intelligence. The purpose of the research is to understand to what extent the entry of

digitalisation into this sphere of life is perceived as a threat to the profession by translators. The questionnaire was created on the SurveyMonkey platform and consists of 44 questions. The card contains 37 closed and 7 open questions, covering three topics: the use of new technologies, attitude to artificial intelligence, and effects on the profession as a result of its use. Included are questions about translator specialization, age, and seniority, place of residence, age and income. The survey card was distributed to the respondents online - through professional Facebook groups (Translators-editors-correctors¹⁹, Translators Bulgaria - everything about translations and languages²⁰, Help from translators for translators²¹, Professional and freelance services²²), it was sent to translators in the professional social network LinkedIn, was sent by e-mail to individual translators and translation agencies.

The research is non representative and is limited by the fact that the exact number of people practising this profession in Bulgaria is not definitively known - that is, there is no information on the volume of the population of translators. The only available information about the number of people practising this profession is the information published on the website of the Ministry of Foreign Affairs, and this is the number of sworn translators in Bulgaria, registered with the Ministry - 2,595 as of December 2019, and this number is not known as of currently – January 2023²³, as the information is no longer publicly available.

It is important to keep in mind that the survey was conducted before the pandemic, and at this time, it is possible that some of the responses on computer technology use are not valid, as COVID-19 accelerates the use of many digital tools for both communication and facilitating work processes.

19 <https://www.facebook.com/groups/583548005040823/>
20 <https://www.facebook.com/groups/prevodachiBulgaria/>
21 <https://www.facebook.com/groups/1571467746404093/>
22 <https://www.facebook.com/groups/bgfrelancer>

²³An up-to-date list of sworn translators in the Republic of Bulgaria can be found on the website of the Ministry of Foreign Affairs: https://apostille.mfa.bg/MFAL/apostille_certificates.nsf/cert1.xsp. As of May 2023, the information is not publicly available.

In the context of digital transformation, certain technologies have the potential to transform work and employment. Such is the case with artificial intelligence: it starts to be applied in routine activities but gradually enters creative professions as well. The analysis made based on the empirical sociological research among translators in Bulgaria clearly shows that taking into account the results of the article, pessimistic scenarios (Frey & Osborne, 2013) of the mass disappearance of jobs in this case are not justified.

At least translators do not think that their profession will be destroyed by the technological changes brought about by digitalisation. They are not justified, because instead of a "killer" of jobs, artificial intelligence, together with other digital technologies, is becoming an "organizer of new activities within the profession". Translators become teachers of the system and do not leave their profession. Routine activities are being "taken over" by artificial intelligence and at the same time new jobs are being created in response to the demand for new activities (Salomons, Gregory, & Zierahn, 2019), for example, routine translations are being automated, but the demand for editors of texts translated by artificial intelligence is increasing, as well as teachers of AI. Another example of professional transformation due to the application of artificial intelligence can be the change in the medical profession. It helps with diagnosis and recommends treatment, but doctors, who can use AI recommendations as a second opinion, make the final decision²⁴. Expectations of quality degradation because of digitalisation have also not yet been confirmed.

The conducted sociological research shows that Bulgarian translators have a positive attitude towards the application of new technologies in their professional work. Many of them already use specialized translation software, and some of these programs are based on artificial intelligence. The above statement corresponds to the results of recent international studies, which show that the use of machine translation is increasing, but not yet widespread

²⁴ Technological innovations of AI in medical diagnostics : <https://www.healtheuropa.eu/technological-innovations-of-ai-in-medical-diagnostics/103457/>

even in technologically advanced countries such as Denmark (Christensen & Schjoldager, 2016). Although the technological changes occurring in their profession are dynamic, the translators surveyed could not differentiate between artificial intelligence and automation; therefore they do not have a clear idea about the subject. Most translators do not feel threatened by artificial intelligence because they think that it is only about automating some aspects of the translation process. Moreover, he is perceived more as a helpful assistant than as a thinking, self-learning machine that could threaten the very existence of their profession.

On the other hand, respondents expect that thanks to artificial intelligence, their work will be eased and they will be able to do it faster, thanks to the automation of various routine activities, for example, inserting already translated text, typing text, and translating specifications. In this sense, the results of the present analysis show that digital change is also associated with positive consequences such as the elimination of routine work, something that is already observed in the industry (Butollo & Krzywdzinski, 2018).

According to respondents, artificial intelligence will not affect the quality of work or employment conditions in their professional activities. One of the aspects expected to change the most will be their assignments. In this way, translators will become educators of artificial intelligence and editors of machine-translated routine texts; the implementation of work tasks will be significantly accelerated and the need for translators for simple texts and templates will disappear.

The results of the study show that the current predictions of the disappearance of this profession are quite hasty, for example, those of Ross:

"I imagine a reduced number of professional translators working with the machines to account for the jargon and abbreviations that always enter the living system that is language" (Poc, 2017, стр. 181).

At the same time, it is important in future research to examine not only the attitudes of translators but also the expectations of corporate and individual users regarding AI-generated translations.

In addition, the conclusions of the present analysis create prerequisites for directing the attention of translators' professional organizations and individuals to the challenges facing the profession, including the need to develop new skills and predict future trends. Additionally, these findings have the potential to prompt further research into the impact of artificial intelligence on other creative professions.

The third chapter of the dissertation presents the results of the analysis based on the author's Empirical Research conducted among Bulgarian graphic designers and copywriters ²⁵in 2021. The purpose of the research is to analyse their understanding of the characteristics of artificial intelligence and the possible consequences of the introduction of artificial intelligence and digital technologies in their professional life in general, as well as what impacts are expected in this context.

109 people were surveyed. The largest share of valid surveys is the share of those aged 30-40 (43%), followed by 40-50 (40%). 63% of respondents are women. 85% live in Sofia, 13% in a regional city and only 3% in small towns. 63% have a master's, 28% bachelor's and only 9% have secondary education. All respondents who graduated from design or other art education work as designers, of the responding respondents who are designers, mostly those with a completed art education (67%).

²⁵ A copywriter is a person who writes texts in advertisements. The first professional copywriters appeared in Bulgaria after 1929. Doganov D., Boyan Durankev, Bulgarian Advertising Encyclopedia, Siela, 2001.

The small number of respondents is the reason to proceed to conduct semi-structured interviews with representatives of the two investigated professions. The interviewed respondents have different working experience, from 8 to 30 years. The copywriters work in agencies and as freelancers (they also accept orders outside their workplace), and two of them are also heads of creative departments (creative directors) in advertising agencies. Two designers work in their own design offices, one in a web design studio, and freelance.

Both occupations are characterized by both creative tasks and tasks that can be defined as routine. The advent of artificial intelligence will take away some of the repetitive tasks and changing occupations. Research on graphic designers and copywriters shows that pessimistic (Frey & Osborne, 2013) job-killing scenarios will not come true anytime soon. The reason is that from a destroyer of jobs, artificial intelligence will become a helper, an organizer of new activities or a performer of boring time-consuming tasks. Artificial intelligence will assist, not replace, humans performing these occupations. Routine activities are "taken over" by artificial intelligence, and at the same time, new jobs are created due to the demand for new activities (Salomons, Gregory, & Zierahn, 2019).

The impact, valid for both considered creative professions, is related to the fact that incoming new software solutions will take away routine work, and creatives will be able to focus on the purely creative part of their activity. The difference is that designers, as greater users of automation in their work, are more aware of the dynamics of change and the development of digital work tools. They know computers, their architecture and specialized software well. In this sense, a graphic designer can currently be perceived as a semi-IT specialist. This is probably why graphic designers are more aware of digital technology developments than copywriters are. Designers are forced to use them to work, as much as copywriters are not.

Content creation with the help of artificial intelligence is used by businesses (to describe products for e-shops, and to compose posts for social

networks by advertising or marketing agencies) and frees copywriters to indulge in creative thinking to create a suitable concept or creative strategy. It can be said, however, that the future of both professions also depends on the business that uses them - if they become unnecessary as professions, they will disappear at the expense of artificial intelligence - the fears of copywriters are about the destruction of jobs and the negative impact of artificial intelligence on the quality of the advertising product.

The development of graphic design is exactly in the direction in which its benefits are developing - taking away routine tasks and working faster. Any repetitive and predictable activity that can be automated will be automated. Artificial intelligence automates and thus simplifies life. Good ad design will be automated, but the human factor will not be excluded, rather it will become exotic or "bio". Man-made will be of higher value. Design and content creation programs will not be able to replace people, they will help people work faster, better and better, but they will not be able to create the graphic or textual concepts that engage the attention of customers and spur them to action. The work of the person - graphic designer or copywriter - will stand out and become important for the success of the business that commissioned it.

According to analysis of the data collected in the surveys, there is room for both – artificial intelligence and human creativity. Machines will be "loaded" with speed, organization and efficiency, and creativity will be left to humans. Machines will create, but within their limits, -imposed by humans, taking over the boring and "unprofessional" activities.

The advice that can be given to the clients and workers of these two creative professions is to value creativity, to keep a close eye on the technology in their field, and to be flexible in the increasingly furious invasion of digital technology. Clients will always choose the best combination of fast/cheap/effective, and creatives must find their place in it by convincing clients more clearly and emphatically of their skills and abilities.

The conclusion of the dissertation summarizes the results of the analysis and formulates several avenues for future sociological research work.

Regarding the first hypothesis, it was found that there is no difference in the attitude of all three professions towards artificial intelligence and its influence on the professions is confirmed by the results of the conducted empirical studies.

In all three professions considered in the dissertation, artificial intelligence is not recognized as a threat. In the future. Something more, respondents consider that there will be room for both artificial intelligence and human creativity. Machines will be used when speed, better organization and higher efficiency are needed, and creativity will be left to humans. Machines will create, but within the limits set by man. Artificial intelligence will take over the boring and "unprofessional" activities.

The professions of translators, graphic designers and copywriters are unlikely to rank among the threatened professions. The pessimistic predictions of Frey and Osborne are unlikely to come true, and the excess labour (Acemoglu & Restrepo, 2018) is unlikely to be from respondents practising the three creative occupations that are the subject of this paper. The analysis of the empirical studies conducted does not suggest job destruction as predicted by Brynjolfsson and McAfee (Brynjolfsson & McAfee, 2014), but rather agrees with the empirical findings of Bessen, who rejects the view that computer automation is (Bessen, 2016) a source of general job loss. : occupations (even highly routine ones) that are automated evolve faster.

The translators surveyed do not think that their profession will disappear due to the advent of artificial intelligence. They do not see it as a "killer" of jobs, but see it in a positive light - they see it as a technology that makes their work easier - they will be able to work faster, which will lead to the automation of routine activities. They believe that artificial intelligence will not affect the quality of work or employment conditions in their professional activities. Respondents most expect the tasks they perform to change. Specifically, they believe that translators will become artificial intelligence trainers and editors

of translated routine texts. In this way, the execution of tasks will be significantly accelerated, and translations of simple, templated and uniform texts will become a frequent practice. The only area where artificial intelligence will be weak, according to them, is literary translations.

"Machines will work and people will create" - as with translators, Bulgarian graphic designers and copywriters are not worried about the introduction of new technologies. In both professions, the expectation is that artificial intelligence will take away routine work, and creatives will have time and opportunities to create.

The differences in the perception of artificial intelligence in the two professions are small. The nuances can be found in the current awareness regarding digital technologies. Representatives of all three professions show a positive attitude towards new digital technologies. However, graphic designers are more familiar with computers - both with their architecture and with specialized software, because due to the specifics of their work, they are forced to use them. On the other hand, copywriters do not really need specialized software, just a word processor. Translators rely on technology to ease the organization of work and speed up the process.

The professions - of designers and copywriters, depend largely on the order givers, i.e. the businesses and other organizations that use their services. During the research, the opinion that it is the business that will determine how long these professions will exist in the future was expressed. The moment business begins to manage without them, the need for their existence will disappear and they will disappear at the expense of artificial intelligence. However, that seems unlikely to happen in the near future.

Regarding the second formulated hypothesis, namely that representatives of the three studied creative professions in Bulgaria have a negative attitude towards the influence of artificial intelligence and its entry into their creative professions, it is not confirmed as a result of the conducted empirical sociological studies. All three creative professions are dominated by optimism. Respondents do not think that their professions will disappear as a result of

digital transformation and the introduction of artificial intelligence. What's more, they do not see AI as a "killer" of jobs. In fact, respondents see it in a positive light – they see it as a technology that makes their work easier – they will be able to work faster, which will lead to the automation of routine activities.

The quality of work of questioned participants and their employment conditions in their professional fields will not be affected by the introduction of artificial intelligence. They most expect the tasks they perform to change. The translators who responded to the survey expect to become AI trainers and editors of translated routine texts; the execution of tasks will be significantly accelerated, and translations of simple, templated and monotype texts will become practice. The only area of translation where artificial intelligence is expected to perform poorly, they say, is literary translation. Any activity that can be automated will be automated, but respondents from all three occupations believe that human-made will be of higher value in the future. The human factor cannot be excluded. In this sense, the results of the study differ from the views of digital transformation as "the end of human labour". Thus, the conclusions are in the spirit of a more nuanced understanding of the impact of digital transformation on work (Warhurst et al, 2019). (Kornelakis, Kirov, & Thill, 2022)

Representatives of all three creative professions strive to cope with digital challenges - they attend training, discuss innovations with colleagues, and participate in specialized online or live courses. What is striking is that the proportion of self-taught professionals is the highest, although there is a difference of 10% for graphic designers and copywriters. The reason designers and copywriters are self-taught it is less likely to be related to the complexity of the software they use.

Another significant difference between the three professions is the attitude of the studied graphic designers – they are more informed about the essence and characteristics of emerging technologies, i.e. they can in some sense be likened to IT professionals. Also, with them, the dynamics of

development and renewal of the computer technologies they use are greater. As a result of this, as well as the binary logistic analysis applied to the translators' results, a general conclusion can be drawn that these professionals who follow the development of technology are not worried about their future.

In this sense, even now the results of the dissertation can be of significant applied interest to the representatives of the studied professions and their professional organizations. The conclusions can be used in the training of students within these creative professions, as well as in the development, for example, of qualification and retraining programs.

In the context of ongoing technological change and especially digital transformation, changes in the field of work will continue in the coming years. In this sense, it is important how new technologies will affect the transformation of routine and non-routine, including creative activities. Thus, in the first few months of 2023, the massive deployment of ChatGPT and other similar generative AI software, raised again the question of what human activities will change and how. In this sense, the author's future research will focus on these changes, including how they affect certain groups - in terms of age, gender, etc. characteristics.

Self-assessment of scientific contributions

1. A new and important sociological view is offered on the impact of digital transformation and more specifically on the entry of artificial intelligence into creative professions important to society.

2. Thus, from the point of view of the object of research - the work is innovative for Bulgaria and affects three key creative professions in our country - translators, graphic designers and authors of advertising texts, which are the object of research interest.

3. From the point of view of understanding the current changes in employment - a critical analysis of the existing theories is offered and the transformation of the labour market in the field of the three creative professions in the conditions of the introduction of artificial intelligence is predicted. This includes understanding the shift in demand, the creation of the necessary skills in practitioners, and the employment opportunities for creatives in the context of technological advances and digital transformation.

4. From the point of view of the future of creative professions – extensive empirical results are presented that refute the thesis leading in the literature about the loss of jobs as a result of higher automation and specifically the entry of artificial intelligence into the three professions. In this sense, it is concluded that the pessimistic job loss scenarios predicted by many scientists will most likely not come true.

5. From the point of view of assessing the effects of the introduction of artificial intelligence in creative professions, the analysis of empirical information shows that artificial intelligence should not be perceived as a threat to creative abilities, but rather as a tool, that will give new opportunities for creators. The authenticity of human creativity will be preserved.

6. Recommendations are formulated for the practitioners of these professions, for their professional organizations and their consumers and

clients. First, these recommendations focus on the need to prepare them for innovation and the introduction of new technological solutions.

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