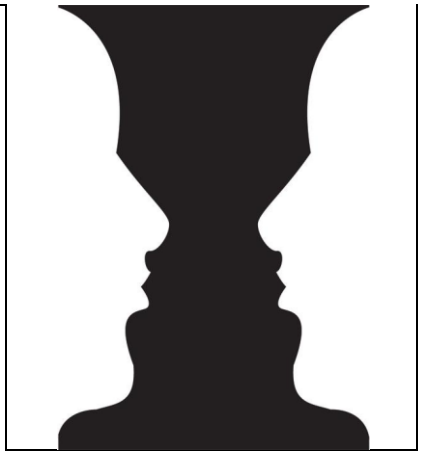
JOURNAL OF COMPARATIVE RESEARCH IN ANTHROPOLOGY AND SOCIOLOGY

Volume 15, Number 2, Winter 2024
ISSN 2068 – 0317
http://compaso.eu



Perspectives of Bucharest students on automation in contemporary society amid the rise of new artificial intelligence technologies

Iulia Beldean[1]

Abstract
This study examines the perceptions and approaches of Bucharest students towards emerging Generative Artificial Intelligence (GenAI) technologies and increasing global automation of work. As rapid technological changes affect lifestyles, socialization patterns, routines, and professional futures, industries and governments often prioritize efficiency over individual well-being. The research employs qualitative methods, including one-on-one interviews and a group interview, involving 13 students from diverse academic backgrounds such as STEM, humanities, social sciences, and arts. Data collection spanned six months. Findings reveal a general concern among participants about endangered domains, particularly the arts, due to fears of property theft and plagiarism facilitated by GenAI tools. Notably, the study uncovers a striking contrast between STEM and humanities students regarding future coexistence with these technologies. STEM students tend to perceive a prophetic mission to optimize these technologies, while humanities students focus more on the need for regulation. This research raises important questions about the social construction of reality in interaction with digital technologies and how Generation Z navigates persistent socio-technical acceleration.

Keywords:
Artificial Intelligence; Collective imaginary; Social acceleration; Technology; Automation;

[1] Faculty of Sociology and Social Work, University of Bucharest, Bucharest, Romania, iulia.beldean10@gmail.com.

Introduction

Humanity and technology have coexisted for thousands of years; the past two centuries have seen the perfection of the former due to capitalist development, which has improved efficiency and profit. The latest generation of youngsters, known as the "Alpha Generation", has been dubbed the "iPad Kid" by the mainstream media since technology has become an integral part of people's daily life and has nearly resulted in the blending of man and machine. A study published by the paper "Pediatrics" showed that surprisingly, in the US, children had their first contact with their cell phone by the age of one (Travers, 2024).

Second-generation Critical School philosopher Andrew Feenberg coined the term "technosystems" defining them as the systems in which technology governs the nature, society, and social structure in which we live under a technocratic system that is also highly advantageous to the growth of capitalist systems (Feenberg & McCarty, 2023).

The personal motivation for this paper stems from the seemingly unstoppable acceleration of technology, particularly artificial intelligence, on our private lives. As students, we may feel threatened by these tools, or we may feel that they are affecting our professional lives and future aspirations. Even though technological advancement and speed are constants in modernity (Giddens, 1991), particularly in late modernity, the rise of social media, and the post-pandemic socialization scenario where social relationships have been shifted online are all related to the adoption of Open AI tools by large corporations or their AI search engines. Everything said above brings technology advancement to the forefront of people's life.

By splitting the research into a qualitative section consisting of a sociological survey based on ten interviews with students from various faculties and universities in Bucharest who have different specializations and a group interview with three participants who are also students, I hope to learn from the students' point of view whether anxiety regarding the development of AI is present and in what social conditions and contexts. The interviews can reveal how the distinct social backgrounds of Romanian young adults might give rise to a range of ideas and perceptions of reality and the more technologically advanced modern world through different socializations processes, since the academic backgrounds of the students include humanities, STEM, and artistic profiles.

Sociological conceptualization

The unequal distribution of environmental risks worldwide, which condemns an already impoverished population to an undesirable fate because of surrounding natural phenomena that are directly impacted or created by things external to them, is known as the "risk society" (Beck, 1992). When combined with technological hazards, natural events can create harm, ranging from pollution to technological social control.

Cornelius Castoriadis' book, *The Imaginary Institution of Society*, discusses the future of work, the notion of the collective imaginary, and the imagining of social institutions. Using Marxist methods, the book centers on the idea that people collectively create reality

based on their shared perception of it rather than on the circumstances that are presented to them.

The term "technosystem", coined by Andrew Feenberg (2017), a philosopher of the new generation of the Critical School, describes how technology methodically governs every facet of natural and social life in relation to human civilization and the other ecosystems. The idea is partly based on the notion of technocratic, computerized capitalism that disregards people in favor of efficiency and production. The concept also serves as a manifesto for bringing democracy into the equation and giving citizens more influence over decisions, including those pertaining to global manufacturing.

Social acceleration, conceptualized by Hartmut Rosa (2013), refers to the speed at which society moves, equating modernity with speed, a speed that has been facilitated by technological progress. Three timescales have been identified for the development of acceleration: the first was intentional, with the invention of the steam engine and the mechanical clock; the second is social, with the mechanization and simplification of jobs; the loss of ritualism in daily activities; and the reduction in the amount of information we must remember, such as addresses, phone numbers, and geographic coordinates, which are now replaced by mechanical or electronic tools. The final stage of acceleration is the one that people internalize; it reflects how well we perform each task throughout the day and allows us to experience the acceleration that pushes us to run faster and faster at our deepest levels. Émile Durkheim (1893) used the phrase "anomie", which can be expanded to include illicit online activity while emphasizing the area of contact between a human and an AI tool. Deviant behavior is allowed because this activity is yet not clearly regulated.

Literature review

Similar to a synthesizer, artificial intelligence (AI) technology can boost production volume and efficiency without always improving quality. Although it can mimic and duplicate human labour, it lacks subjectivity and creativity (Bran et al., 2023). Despite being designed to improve itself, artificial intelligence will either advance or stagnate based on how big businesses handle subscriptions and investments in these initiatives. AI search engines such Chat GPT-3 has become obsolete in January 2022, while their more expensive counterparts, like the far more potent GPT-4, has continued to advance. In essence, artificial intelligence is not simply a basic instruction learning software; it is a deep learning program that continuously learns and improves to carry out human tasks (IBM Data & AI Team, 2023).

Thus, in order to examine AI as a technology, one needs comprehend its two main characteristics: its functioning and its capability. Therefore, there are various forms of artificial intelligence (AI) in terms of competence and capacity, including general AI, super AI, and artificial narrow AI, also known as "weak AI", General AI, and Super AI. Functionality-wise, there are Reactive Machine AIs, which are designed to carry out a straightforward command and lack memory. Examples include Netflix's recommendation system and IBM Deep Blue, generative AI and customer relationship robots, and limited memory AI, which can retain certain information but only for a brief period of time, like the

autopilot system in cars. The remaining two types of AI are Theory of Mind AI, which is a subset of Generative AI and is currently under development. It may be able to recognize and comprehend the emotions of humans or other living things it interacts with in order to enhance its performance, and Self-Aware AI, which is currently only theoretical (Idem).

There are two categories of AI algorithms: those that have already been trained and those that can be trained. The former requires user involvement to produce a model or, more generally, an "output", as is the case when we wish to produce a word, image, or even programming code, as in Chat-GPT. The functionalities of the already trained algorithm are already accessible to the user, but because it doesn't require interaction, it may have fewer options (IBM Data & AI Team, 2024).

Cornelius Castoriadis, a philosopher, used the ancient Greek word "teukhein" which means "productive aspect of social action or institutionalization" to describe the division of the terms "assembling-adjusting-assembling-building" or, less specifically, to describe the materialization of the collective, social imagination. According to his book "The Imaginary Institution of Society", society is constantly faced with nature's gift, which is constant, fixed, and malleable. Depending on the kind of society or how human evolution is involved, this malleability is used or exploited differently. Similar to how flexible wood evolved into a long-range bow during the Paleolithic era, the nuclear bomb is a modern example of the malleability of hydrogen through fusion. Various natural materials can be used to develop technologies that are relevant to their era (Castoriadis, 1975).

As a result, people conceive and produce new cultural items that correspond with the rate of growth of the society they may project and live in. As a result, the collective imagination continues to take on many forms based on the social rhythm and logic that its members observe. Therefore, the social environment in which we live is the outcome of the collective imagination that we and our forebears have created.

> "To say that the social imaginary significations are instituted, or to say that the institution of society is the institution of a world of social imaginary significations, also means that these significations are presentified and figured in and through the actuality of the individuals, and the objects that they inform." (Idem)

The same, Castoriadis adds, can be said of the entire capitalist system. In order for a machine to become capital, it has to be placed in the socio-economic relations that capitalism has seized. The machine is given capitalist characteristics and the quality of capital through this codependency connection. The modern method of production necessitates the existence of machines for the production of capital and goods, but the latter does not necessarily need to be automated by machines in order to generate and accumulate. They would no longer generate capital in a socialist revolution that reclaimed the means of production, such as machinery, and the link between the two that the average person had formed would vanish (Idem).

Individuals are both creators and victims of their own creations or social projections. Imagining a hyper-technologized future is like a self-fulfilling prophecy just as social acceleration is a self-propelled system. An individual moves more quickly if they believe their social surroundings to be fast; on a larger scale, this type of conduct creates

a quicker world. In his book "Social Acceleration", Hartmut Rosa makes the case that modern society functions primarily because of technology, which moves so quickly that even its own inhabitants may feel outrun by it (Rosa, 2017).

In a London School of Economics conference where he outlines the key points of his book, Rosa contends that this acceleration occurred in three stages: the first was deliberate and based on advancements in technology, such as the invention of the steam engine and the mechanical clock; the second was the acceleration of social changes, revolutions, and the population's ability to move; and the third was the acceleration of individual life's pace, or the internalization of significant external changes.

The Industrial Revolution was the cause of the acceleration in the first step. An increase in capital or profit is positively correlated with the production of more goods, meaning that the time allocated to the production of each good decreases. This was made possible by the mechanical clock, which for the first time was able to measure time more accurately than ever before, in minutes and seconds. This allowed for the systematization and integration of time into a mathematical and capitalist logic, with production and capital production oriented around the clock: the hours of labor put in, the calculations made by employers between workers, the good produced by each worker per hour or minute and the wage that would have been due to him, and the hours of labor put in. Efficiency and the economics of speed were entrenched by this contemporary logic. Increased capital was unavoidably the result of faster production speeds since they allowed for the sale of more items (Idem). If technology can complete a task or set of actions required to create a profitable product faster than a human worker, then man becomes an interchangeable instrument of intelligent technologies.

The other two steps are two main consequences of the first just as the third step is a consequence of the second. As a result, the second step—the acceleration of social life—describes how routines, daily activities, the workplace, and everyday behaviors move quickly. Most importantly, routines and commuting must be completed as efficiently as possible to gain extra time with family or friends, even if that promise is never fulfilled. We cannot spend a lot of time in a space without a purpose, like a road we drive on; the workplace requires efficiency and wasting time can affect our career; and so on.

Many technologies have been developed to improve the efficiency of commuting, such as electronic maps, phone memory that has supplanted phone books, and the internet that has supplanted libraries. Rosa thinks that these substitutions result in a reduction in the average person's awareness of the world around him. He becomes reliant on technology in order to go from point A to point B, which causes him to lose his memory, sense of direction, and ability to function without the aid of useful devices. Because the populace becomes dependent and controllable, the author observes that when a society reaches this threshold, it becomes vulnerable and the future becomes uncertain (Idem). The third and last step is the internalization of the phenomenon of acceleration, which produces various postmodern problems: existential boredom and burn-out. If, objectively speaking, everyone feels that there is not enough time, then each person absorbs this notion and seeks for ways to be as effective as possible, as soon as feasible. As a result, terms like "fast-food", "multitasking". "Power nap", "fast-fashion" and others have

emerged to describe this way of life. Time is being systematized in a way that is similar to a factory, where every minute of the day is planned for efficiency (Idem).

Numerous sociologists have put forth this perspective over the years. Weber combined the Calvinist Protestant ethic, which viewed indolence as a sin punishable by death, with the idea of rationalization of the world and a "disenchantment" that served to organize the world in a bureaucratic and harmonious manner. According to symbolist author Charles Baudelaire, modern life is always changing and never stays the same. Lastly, Theodor Adorno, a philosopher, shares Castoriadis' view of technology as the domestication of nature and its integration with human nature within a Marxist framework. However, according to Beck, the second wave of industrialization is what caused the post-modern acceleration (Idem).

When it came to European society, science was almost a centralized organization with certain restrictions. Its goal was to provide basic, existential answers for Renaissance culture. During the Enlightenment, many societal norms were dismantled as a result of its development and the change in focus from an all-pervading God to a science that could explain everything. In modernity, and particularly in reflexive modernity, science could now provide numerous solutions to a wide range of issues and dangers, but it lacked conclusions, teachings, or sermons that would have given society direction or something to rely on. As a result of its self-scientification process, which allowed it to contradict itself, science's resurgence in Europe during the Renaissance was split into two stages: primary science and reflective science (Beck, 1992). The latter is also the one in which we currently reside. Because it does not view the first knowledge found as indisputable, reflexive science may eventually contradict itself. However, this ongoing search leaves a gaping, relative, and ambiguous area in the risk society. Once science started to focus on self-improvement and self-criticism, the foundation of scientific civilization gradually probed and revealed the insecurity of its own construction, which is only surpassed by its potential for risk (Idem). The rise of science and scientists' cultural influence propelled them into positions of authority and a messianic role.

As a result, while this type of information is growing more and more crucial, it is also becoming less and less adequate in the pursuit of truth. It generates a great deal of doubt and mistrust and loses its once illuminating and protecting function because it meets significantly fewer requirements. Techno-scientific advancement has produced reflexivity, which is the cause of this unsettled condition. The use or interpretation of every error as a chance for technical advancement and knowledge expansion through experimentation has ultimately been the means by which science has continued to exist (Idem).

In his book "Technosystem, The Social Life of Reason", Andrew Feenberg discusses the ten paradoxes of technology. Feenberg uses Heidegger's comparison of birds and their capacity for flight in the first paradox. Would birds still be birds without wings, or are wings an inherent feature of birds that does not define them? Regarding humans and technology, which includes using the most basic tools, is it possible for us to be distinct from other animals based on intelligence without using these things, or are they an integral part of who we are? (Feenberg, 2009).

Feenberg lists additional paradoxes, such as the paradox of the obvious, the paradox of origin, the paradox of perspective, the paradox of action and reaction, and the paradox of method, which explain that the use of technology itself has meaning that transcends context rather than the reason for using it. Cars have the function of movement but have become a status indicator. Other paradoxes are the paradox of complexity, the paradox of values and facts, the paradox of democracy. One of the book's main themes is the latter: while technology can present new avenues for exercising democratic values, it can also be used to establish a technocracy, an oligarchy that is difficult to overthrow. Workers' movements, the first anti-industrialization movements to emerge in the early and mid-19th century, aimed to take control of the instruments they used to create capital. Nowadays, those who call for a more patient-centered healthcare system or free internet access in public institutions for all citizens should be aware that the socialist class struggle is the root cause of the desire to use technology for the benefit of the general public rather than for the benefit of businesses or organizations that are isolated from the people. The final paradox of context explains how people who try to manipulate nature will ultimately be overcome by the results of their deeds (Idem).

Feenberg also mentions another Marxist writer from the first generation of the Critical School, Herbert Marcuse who takes a Marxist approach to technology. He sees technology as an embodiment of an ideology not as a consequence of pragmatic thinking, although the triumph of technology results in the triumph of technical, logical-mathematical thinking. Technology can be used to legitimize non-democratic regimes or validate an individual or collective lifestyle, such as hyper-consumerism. The kind of technical thinking that is fostered by the popularization of technology in the 20th century is related to capitalist rationalization, time and resource management. Capitalist rationalization facilitates the control of technology from the bottom up, from capitalists or influential people to consumers or those who operate those machines. Their logic and purpose are controlled by patrons or executives (Feenberg, 2021).

Whether made possible by artificial intelligence or the internet, this is another fascinating occurrence that can occur in a social setting. The GDPR (General Data Protection Regulation) law was only adopted by the European Parliament and Council in 2016, despite the fact that social media platforms have had user personal data for over a decade and that innumerable businesses have been working with digitalized employee personal data. Ordinary legislation takes about 17 months to propose and adopt, yet the legislature acts as a mediator to control human interactions (European Parliamentary Research Service).

Even in online environments or in interactions between human users and AI generative search engines, the phenomena of anomie may arise during this time when social facts are not regulated or during which switching from one mode of operation to another occurs. Users may feel socially isolated as a result of this regulatory vacuum and the absence of a clear code of behavior. In "The Division of Social Labor". Durkheim discusses how industrialization causes various societies to shift from mechanical to organic solidarity during a time when social roles and norms become hazy and diluted, and the absence of these unambiguous norms drives the populace toward anomie and deviance.

According to him, there is a limit to the division of labor before it starts to cause strife and disintegration:

> "Any decomposition," says Auguste Comte, "must necessarily tend to the creation of a corresponding dispersion, and that is why the fundamental distribution of human labor cannot avoid the growth of individual, intellectual and moral divergences, whose combined influence requires in equal measure a permanent discipline, in order to become or to combat without ceasing their discordant development." (Durkheim, 1893, p.228).

According to another study that goes into further detail on the connection between anomie and deviance, social bewilderment is the primary cause of anomie. Anomie can be the source of societal disarray, including riots, uprisings, industrial and commercial crises, and more, since it is what separates communities moving from an agrarian to an industrial system or between different modes of social organization (DiCristina, 2015).

According to a paper published in the *Journal of Contemporary Criminal Justice*, cybercrime and Merton's Institutional Anomie Theory (IAT) have a complex relationship, but deviance is most likely to occur in extreme places. Online deviance or delinquency is predicted by both an overly strong belief in the American Dream and a lack of belief in it. Other reliable factors are socio-demographics. The sample of law-abiding and non-law-abiding people shows that 22% of offenders are men and 18% are women. The crime rate declines with age, which may be related to youthful delinquency or to potential hacking that primarily targets young individuals. There were no documented statistically significant variations or values based on ethnicity (Dearden et al., 2021).

The collective social imaginary can produce different forms of social organization or predict different behaviors and trends. There is a method by which this social prediction can be measured, called the Social Shaping of Technology, SST (Howcroft et al., 2022). This concept explains how future technologies are modified or created based on already existing technologies, how they may be inflected by social relations, gender and the centralized administrative power popularly known as the state. The article describes how speculation about the future of workplaces and the anthropomorphisation of robots is very much associated or related to the Fourth Industrial Revolution (Schwab, 2016), the Second Wave of Machines (Brynjolfsson & McAfee, 2014), the Fifth Capitalist Wave in Kondratiev's theory or the "Third Break" (Bastani, 2019), comparable to the transition of human organizations from Paleolithic to Neolithic or from pre-modern periods to the First Industrial Revolution. The author goes on to explain how in each historical episode in which technology seemed to develop at extraordinary speeds, there was also an anxiety or social reaction to leave its mark. There were various preconceptions, from optimistic ideas that technology would replace our boring jobs or housework, leaving room to pursue our own passions.

In the 1990s, several public opinion leaders, media analysts, and think tanks overestimated the speed at which online platforms and the Internet would facilitate the shift of the economy from offline to online. These days, this kind of conjecture is moving toward artificial intelligence. Ultimately, the social actors who supply the essential

motivational fuel that aids in conceptualizing new capitalist visions and paradigms grant legitimacy to these imagined futures, even though these collective anticipations and imaginative exercises may initially be incorrect (Howcroft et al., 2022).

Students can construct and project different images of robots, especially anthropomorphized ones. According to a study on these robots that included students from an adult education center and the University of Algarve's Gambelas campus, social representation changes based on how much a person has interacted with the robot whose mental picture they are creating. Free evocation was the technique utilized on 212 participants, most of whom were female, asking them to write down the first thing that springs to mind when they think of a robot. The terms "machine" and "automatic" were found to be the most frequently used. The study by Moliner and Gutermann (2004), which is also highlighted in this paper, demonstrates that the type and frequency of interaction with the responsive item or robot depends on the relationship between the individual and the thing to be developed.

For example, study participants who did not interact at all or almost not at all with the robot/object or technological tool in question were constructing a highly descriptive social representation, whereas participants who interacted more with these tools were seeking to explain the phenomenon more (Picçarra, et al., 2016).

A correlation between macro independent characteristics or variables in a society, such as socioeconomic inequality, and a society's opinions toward the development of new technologies is shown in another paper that examines responses from the 2017 Eurobarometer 87.1 (Shoss & Ciarlane, 2022). Using Eurobarometer data, Gnambs and Appel (2019) identified increasingly negative attitudes towards the intervention of robots in the labor market over the years. These Eurobarometers measure the opinion of Europeans on this niche in 2012 (Eurobarometer 77.1), 2014 (Eurobarometer 82.4) and 2017 (Eurobarometer 87.1). They ascribed these increasingly pessimistic views of Europeans to the potential negative effects of technology in the workplace and the perception that these effects are becoming more and more real. They found that the Nordic EU countries had more positive attitudes toward robots than the more economically unequal Southern countries, indicating a relationship between social inequality and worry over the introduction of new technologies (World Bank, 2016).

AI is more prevalent in some occupations than others, according to PwC's 2024 Barometer. Web designers, software developers, and software technicians are among the professions most affected by AI. People in jobs that require a lot of social interaction, including judges and psychologists, are less likely to be endangered by new technology or need to learn how to use them (PricewaterhouseCoopers, 2024).

In a 2023 report by Capgemini on how consumers relate to AI by generation and continent (taking a few key countries in the Americas, Asia and Europe, each of which is highly developed) shows that there are not very large differences between generations in relation to views on AI and its uses. Instead, it was demonstrated that the Baby Boomer Generation is the most interested in AI technologies, with 53.55 percent of respondents indicating a high level of exploration. At 51.7%, Generation X comes in second. Additionally, both men and women investigated AI solutions like DALL-E and Chat- GPT to the same

degree. At the same time, Japan has the population that knows the most about AI (56.5%), followed by Singapore (54.4%) and Sweden (54.3%) (Capgemini Research Institute, 2023). About half of Europeans (26376 respondents) think their online rights are well protected, 36% disagree, and the remaining percentage think that lawmakers should further regulate this space, according to the official report of the Special Eurobarometer 532, which was conducted in March 2023 on the opinion of EU citizens on new AI technologies.

The decline in the proportion of respondents who think technology will be a significant part of their life by 2023—from 81% in 2021 to 79% in 2023—is another intriguing finding. If there is a decreasing tendency, it could be followed even though the difference is essentially insignificant. A few nations saw notable drops in percentages on the same issue when compared to the 2021 Eurobarometer, including Belgium (down 10%), the Czech Republic (down 10%), and Finland (down 8%) (Special Eurobarometer, 2023).

According to Lee et al. (2022), 18 students from a university in Taivan who participated in a study on their use of chatbots in educational settings felt that the technology increased their intrinsic motivation, helped them be more productive, and saved them time.

Research methodology

The theme of this article is the emergence of new AI technologies in an already hyper-automatized European space. The concepts of the paper also used in the research are: imagined futures, the future of work, technosystems and the acceleration society. As mentioned above, every individual including students can construct social realities, even if at the beginning of their creation they only imagine them, and later they emerge from discourses. With 13 participants, nearly all from different worlds with varying ideological, social, and cultural backgrounds, the primary goal of the study is to gauge how the students' individual social universes are influencing their opinions about the new smart technologies, particularly artificial intelligence.

In addition to learning about the potential subtleties, particularly with regard to their own area of specialization, I want to see what worries them about these technologies. Are students in technical fields more at ease with new technologies, while those in the arts or humanities are more anxious? Does this result from personal applications of AI? Secondary objectives are to observe possible gender discrepancies and whether ideological positions can emerge from the discourse. Are there variations by gender or even within the two mentioned environments? How can ideology influence perspectives on one's own future?

I chose to interview 13 respondents in-person, dividing their social universes according to the colleges, faculties, and specializations listed in the above table (Table 1) to ensure as much diversity as possible.

Although their academic backgrounds represent two main universes, the diversity of the students' backgrounds offers a broader perspective on the phenomenon of students using AI tools. Of these, seven have fixed profiles in engineering, robotics, or mathematics-computing, while the remaining students have humanities or vocational

profiles, with law or psychology—both of which are considered social sciences—serving as a buffer between the worlds of the students on science profiles and those on humanities profiles.

Table 1. Sample characteristics: individual interviews

Code	Faculty/specialization	Education	Age	Gender
M	Faculty of Mathematics-Computer Science, UB	Graduate student	22	Male
I	Faculty of Industrial Engineering and Robotics, UPB	Undergraduate student	19	Male
G	Faculty of Mathematics-Computer Science, UB	Graduate student	22	Male
L	Faculty of Image and Film, UNATC	Undergraduate student	21	Male
O	Faculty of Psychology, Ecological University of Bucharest	Undergraduate student	19	Male
P	Faculty of Biotechnical Systems Engineering Environment, UPB	Undergraduate student	19	Female
J	Faculty of Philosophy, UB	Undergraduate student	20	Female
D	Faculty of Philosophy, UB	Undergraduate student	19	Female
S	Faculty of Law, UB	Undergraduate student	19	Female
T	Faculty of Decorative Arts and Design-Design graphic, UNArte	Undergraduate student	21	Queer

Table 2. Sample characteristics: individual interviews

Code	Faculty/specialization	An	Age	Gender
V	Faculty of Transportation-Energy Electronics, UPB	Undergraduate student	21	Male
H	Faculty of Transportation-Energy Electronics, UPB	Undergraduate student	22	Male
R	Faculty of Cybernetics, Statistics and Economic Informatics-Economic Informatics, ESA Bucharest	Undergraduate student	22	Male

The eleven questions in the individual interview guide begin with an introduction that mentions the respondent's anonymity and, thus, their possibility to refuse answering a question. The questions then proceed in order of intensity, gradually bringing the respondent to the subject, starting with the respondent's favorite science fiction film and progressing to their thoughts on Chat-GPT and AI tools, as well as their use by the respondent or their friends, including to answer existential questions.

In addition to offering forecasts for the future, the questions encourage the respondent to consider a civilization that will emerge in the ensuing decades. There are only open-ended questions throughout the interview, so students are free to elaborate on their responses as much as they like. The following research question is comparable to the one that was previously mentioned: Do people's perceptions of digitization and global automation vary based on the kind of research they have done and their personal experiences? The aspects that were employed were "future views", "predictions for the future" and "use of AI tools and other experiences, interactions with them".

Students with mathematics, informatics and robotics specializations, who are also the most familiar with or surrounded by programming, are the target audience for a dedicated question. It seeks to understand their opinions regarding code-generating tools. Lastly, when it was thought that the conversation may still be sparked, additional impromptu questions were periodically added to the interview guide.

Since the majority of the interviews were members of my social network, albeit more distantly, their ages are likely to be between 18 and 25. Many of the people I spoke with were recruited through the snowball method, while others were recruited through weak ties (Granovetter, 1973). Weak ties are people I barely knew or more distant acquaintances, as I saw them as a means of accessing as diverse a social space as possible.

We have also conducted a planned group interview with three people—two of whom were unknown and the contact person being a weak link (Idem). The interview was conducted at "Pub 18", a bar near the Polytechnic University dorms. This was chosen after a number of unstructured campus observations to gain a sense of the location, which I saw as a social hub for the university's students. It is undoubtedly not the only student gathering spot, but because of its campus location, it is an important area.

With ten questions in all and the same dimensions—the usage of AI technologies, future projections, and personal opinions—the group interview guide is comparable to the previous one. Similar to the individual interviews, the research question asks: how do students from the Polytechnic University of Bucharest (UPB) and other universities in related fields represent and evaluate generative AI tools (Chat GPT, Dall-E) and global automation while accounting for their individual and mediated experiences?

The SF movie question has been retained because it is a topic that can help study participants unwind (and is also one of the first questions). It can also encourage discussion among study participants, as each person may have a different favorite SF film than their peers, which allows for the emergence of a lot of information. This information can reveal perspectives on technology or the future, a person's pragmatism or idealism as well as group dynamics, and ultimately who stands out against whom.

Lastly, because the majority of the faculty at this university is technical, students in this group are more likely to encounter coding and technical terms than students from other universities or humanities faculties. This is the target audience for question 9, which focuses on the new Devin program that was developed to be an AI software developer. The interview subjects were chosen based on a conversation with an acquaintance who had made plans to go out with two of his friends.

Individual interviews analysis

To begin with, each interview suffered in one form or another from the operator effect, which caused an initial reluctance of the respondents, but towards the end of the interview each of them managed to relax and participate in the conversation without much hesitation. Many of the apprehensions were due to the spontaneity of recruiting students for the interview, with respondents being either distant acquaintances or people I had met on the spot at a student or other events.

Every interview started with at least one online or in-person conversation, after which the interview and its guidelines were decided. Most of the time, each respondent was also told during the recording and before the interview that their responses would remain anonymous and that there would be no risk if they answered truthfully. Seven of the respondents were recruited directly, one was recruited through a mutual acquaintance, and the other two were recruited using the snowball approach (Granovetter, 1973). These two respondents were also the most hesitant to participate in an interview and provide personal information.

These two respondents were also the most reluctant to be interviewed and to take personal data, more reluctant than strangers whom I spontaneously approached face to face. In this situation, possibly physical interaction played an important role for communication.

The ten individual interviews were carried out in person in parks or social settings, which were neutral settings that promoted casual and easy conversation. The individual interviews had been taken between December 2023 and May 2024.

Having in mind the key concepts of the paper, such as the society of risk, social or collective imaginary, technosystems, social acceleration and anomie, I correlated a few words similar in their meaning, such as future, work, technology, system and acceleration and I counted how many times each respondent mentioned any of them during the interview. The inspiration for the quantitative analysis was the evocation method (Picçarra et al. 2016).

The term "work" had 23 mentions, the concept "technology" 15 "future" 12 mentions. None of these were was suggested by the interviewer. The fact that "work" was the most frequently used term in the list of concepts may reflect the worry that this generation of students is experiencing as a result of a highly competitive employment market.

The concept of 'anomie' could not be traced because it is a word that can hardly appear in everyday vocabulary, however, alternative topics close to the term appeared in

the discourses, usually when asked students were asked about their opinions on copyright issues. Search engines and highly trained AI tools look for works online and steal ideas, a phenomenon that primarily affect artists, therefore students have the desire for generative AI tools to be fair to users. However, from the conversations with the UNArte student it resulted that the artistic social world is used to the risks that AI poses to the creative process. This readiness is demonstrated by the thorough documentation of the topic by experts in the field and, on a larger scale, by the number of lawsuits filed by artists against the major generative AI developers.

The limited usage of the terms "system" only twice and "acceleration" three times, could possibly be the result of respondents' specific vocabularies. In addition to variations resulting from specialization, there are also disparities resulting from factors beyond the faculty, such as the individual's educational background and social environment. The concepts used in the methodology must be simple enough to transcend differences in vocabulary between students.

The paper cited above (Piçarra et al., 2016) has an intriguing hypothesis. It showed an inversely proportionate association between detailed descriptions of the technological phenomenon and exposure to AI technologies in respect to its respondents.

Study participants who had more experience with these kinds of tools gave plenty of technical information, whereas those who had less experience tended to characterize this technology in a more abstract manner. The ten-student group likewise experienced this occurrence. While the remaining respondents, who had less interaction, talked about Chat-GPT and AI in a much more general, philosophical manner, interviewees with the initials M., I., and G. gave the most detailed explanations of how these search engines operate, along with numerous examples. There is a slight lack of technical type responses because there are four students on a technical profile and six on an artistic or humanities profile; nonetheless, the variety of specializations guarantees that multiple social universes are represented. Social sciences, like law, philosophy, or psychology, are in the buffer zone between the technical and creative profiles, or between the specializations in mathematics-computing and image, film, or graphic design. Despite this, respondents O. and S.'s discourse was more descriptive than explanatory (Picçarra et al., 2016). They were far more realistic about the application of AI, viewing it as a helpful instrument with clear limitations that should be controlled rather than misused.

The technical discourse encouraged much more the development of AI, which saw it as a future intelligence in and of itself that might benefit humanity on both a large and small scale. The lone exception to the pattern was respondent P., who did not have much involvement with writing code even though she was on a technical profile. In the group of responses with these specializations, she was an exception. Answers given by respondents on artistic profiles differed widely; for example, respondent T. was considerably more certain that these autonomous technologies may be blind or normal, while respondent L. was much more worried about the development of AI and how it might impact his area. The ages of the respondents are close enough that this is not a sufficiently relevant variable in comparing responses.

When it comes to gender differences, women spoke about social issues much more than the men did. The latter never brought up topics like the environment or difficulties finding a job, which may account for the higher frequency of the word "work" and other concepts where a difference can be seen. Given that respondents with technical profiles are more upbeat about the development of AI while other respondents are more cautious, the disparity in responses may support the main hypothesis that people's views on digitization and global automation differ by educational background. However, personal optimism about one's own future in an automated society was frequently prevalent, with very few outliers when the response was either pessimistic or realistic (Idem).

In the case of ideology, respondents on technical profiles revealed solutionist tendencies (Nachtwey & Seidl, 2024), by thinking generative AI to be a potential solution for many global problems, albeit it needs to be regularized, not a mere tool as other students indicated. The latter were more taciturn regarding Bing AI, Chat-GPT, etc. This led to the creation of a positivist cosmos in the technical, particularly computer science-based, environment that is receptive to new technologies, despite the fact that they may pose a threat in some situations.

As a final question, students majoring in engineering were asked if they thought the Devin software development program threatened them. Both of the three respondents were adamant that this program has some restrictions that it cannot overcome, at least not right away, because it was not as spectacular as it might be thought of, either because it can be a "con" or because it is unable to test the code it generates. Instead, this kind of training might help students learn better profile coding. However, the remark that none of them had used the application was included with both responses, perhaps because they had seen how others utilized it online. This kind of projection of reality could unavoidably lead to the social isolation of artists from the rest of society in the future due to the AI problem. Another intriguing aspect was the perception of a collective solidarity towards artists, a collective imaginary based on real situations "inflamed" by social media and other communication methods (Castoriadis, 1975).

Group interview analysis

The group interview took place on June 5, 2024, during the second part of the day. The anticipated reluctance made it impossible to conduct a spontaneous interview or to randomly select respondents, which led to either postponing plans until they were no longer available or cutting off contact by failing to provide a concrete response to our invitation messages.

In the end, I resorted to the snowball technique and contacted a more distant acquaintance and after several discussions she managed to persuade 2 more colleagues to participate in the group interview, colleagues whom I had not known beforehand. Thus, the group interview was attended by 3 students, each male, 2 from the Faculty of Transportation on Electronic Engineering and the other one from the Faculty of Cybernetics, Statistics and Economic Informatics on Economic Informatics.

The interview started very organized, and towards the end the participants were more uninhibited. The dynamics were more or less balanced. Preceding the interview there was a free discussion in which the respondent who communicated the least during the recording was the one who told the most, this one being from the Faculty of Transportation, UPB. Once the recorded discussion started, the ideas came mostly from another respondent, from ASE Bucharest, who often had dialogues and contradictory dialogues with his colleague from UPB. Regarding the main hypotheses, such as "There is a relaxation in the opinion of students from the Polytechnic University of Bucharest (UPB). and other technical profiles about AI tools: Chat GPT, Dall-E. in relation to the labor market but also global automation, taking into account personal uses?", this can be refuted, due to the group's constant references to social problems that can be caused by AI, from intrusive online marketing, to the use of deep-fake by companies for social control to alienation.

The Devin program and the idea that technology might replace people in the labor market were seen as something that might not actually happen. It could serve as a reminder for someone who wants to work as an intern or at an entry-level position at a software development company, but it couldn't take the place of a senior with decades of experience. The respondents referred in their answers to Chat-GPT, thus it is conceivable that there is a lack of information about this program, since those in the individual interviews were not very convinced about their answers.

Despite their negative outlook on the future, the group was very realistic. On the technical side, they provided numerous explanations supported by examples, and on the systems, hardware, and software side, they also attempted an imaginative exercise about what humanity will look like in the next 20 to 30 years. They were brief, and aside from a few remarks about mental health and how the social world might change, they went back to technical details.

With two out of three participants having the majority of the dialogues and the third being more reserved in his responses—despite having interventions for nearly every question—the dynamics were comparatively out of balance. One common perspective that can be drawn from each participant is the limitations of AI and the necessity of the human element, which technology cannot replace, even though there was an overlap of comments rather than a clearly expressed collective reaction.

Furthermore, this group did not adopt a solutionist stance, which holds that technology can cure any social or environmental issue, and instead stressed the necessity for control of these tools, in contrast to the respondents by technical characteristics in the individual interviews (Natchtwey & Seidl, 2024).

Conclusion

The interviews focused heavily on imagination, projecting possible scenarios into reality, and exploring the main fears and anxieties of young students. As students increasingly become a significant social group, their opinions on various social issues are being sought more frequently. Understanding their perspectives can be beneficial for anticipating

potential challenges they may face in the labor market, especially given the rapid pace of technological development.

I believe that the proposed thesis invites reflection on several nuanced sociological and philosophical theories. At the same time, it serves as a study of an emerging technology like ChatGPT, which appears to be generally well-tolerated by most young people and students. However, there are always subtle nuances in their attitudes and perceptions that merit deeper exploration.

One of the limitations of this study stems from an initial preconception that interest in this type of topic might be less prevalent among female respondents, given its technical nature. Fortunately, this assumption was not supported by the results. However, within the individual interview respondents, there was limited female representation in technical fields, which suggests the need for a larger and more diverse group in future research. Where technical details were lacking, efforts were made to compensate by contextualizing AI within broader social issues.

For future research, an improvement to the interview guide would involve tailoring the questions more closely to each respondent, while ensuring their core meaning remains unchanged. This approach could help avoid respondents feeling frustrated by repeating ideas. However, slightly similar questions can still provide an opportunity for respondents to offer new perspectives on the same topic. In group interviews, an area for improvement would be ensuring that all members actively participate in the discussion. While it is natural for some individuals to contribute more than others, it is important to encourage balanced input so that approximately equal contributions from each participant can be gathered. This balance is important for forming a comprehensive and representative general opinion.

In the conceptualized method of quantification, it is essential for the interviewer to exercise care and rigor in formulating questions, avoiding the use of terms or phrases that the interviewer expects to hear from the respondent. This precaution minimizes the risk of inadvertently suggesting certain terms to the respondent, which could bias the data collected. This approach requires the interviewer to strike a balance between rigor and flexibility, ensuring that questions are clear and precise while allowing room for adjustments where necessary to prevent respondents from repeating themselves. In conclusion, I believe that this research provides insights into the social universe of students, shedding light on their primary fears, perspectives, and attitudes.

REFERENCES

Bastani, A. 2019. *Fully automated luxury communism: a manifesto*. United Kingdom: Verso.

Beck, U. 1992. *Risk Society. Towards a New Modernity*. London: Sage Publication.

Bran, E. Rughiniș, C. Nadoleanu G. Flaherty, M. 2023. "The Emergence Social Status of Generative AI: Vocabularies of AI Competence in Public Discourse", *24th International Conference on Control Systems and Computer Science* (CSCS), Bucharest, Romania, pp. 391-398.

Beck, U. 1992. *Risk Society. Towards a New Modernity*. London: Sage Publication.

Brynjolfsson, E. & McAfee , A. 2014. *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies*. New York: W.W. Norton Company.

Capgemini Research Institute. 2023. "Why Consumers love generative AI." *Get the Future you Want*. Retrieved November 25, 2024 (https://prod.ucwe.capgemini.com/wp-content/uploads/2023/05/Final-Web-Version-Report-Creative-Gen-AI.pdf).

Castoriadis, C. 1975. *The Imaginary Institution of Society*. Cambridge: MIT Press.

Chang, C.-W., & Chang, S.-H. 2023. "The Impact of Digital Disruption: Influences of Digital Media and Social Networks on Forming Digital Natives' Attitude." *Sage Open* 13(3):1-10.

Dearden, T. E., Parti, K., & Hawdon, J. 2021. "Institutional Anomie Theory and Cybercrime—Cybercrime and the American Dream." *Journal of Contemporary Criminal Justice* 37(3):311-332.

DiCristina, B. 2016. "Durkheim's theory of anomie and crime: A clarification and elaboration." *Australian & New Zealand Journal of Criminology* 49(3):311-331.

Directorate-General for Communication, European Union. 2023. "Special Eurobarometer SP532: The digital decade." *European Data*. Retrieved November 25, 2024 (http://data.europa.eu/88u/dataset/s2959_99_1_sp532_eng).

Durkheim, E. 2007. *Diviziunea Muncii Sociale*. București: Antet Revolution.

European Commission and European Parliament. 2023. "Eurobarometer 87.1. Two years until the 2019 European elections, Attitudes of Europeans towards tobacco and electronic cigarettes, Climate change, Attitudes towards the impact of digitisation and automation on daily life, and Coach services." *GESIS Data Archive, Cologne.* Retrieved November 25, 2024 (https://search.gesis.org/research_data/ZA6861?doi=10.4232/1.12922).

European Parliamentary Research Service. 2024. "Average Duration and number of concluded ordinary legislative procedures." *Epthinktank.* Retrieved November 25, 2024 (https://epthinktank.eu/2022/03/11/european-parliament-facts-and-figures/ep-facts-and-figures-fig-19/).

Feenberg, A. 2009. *Ten Paradoxes of Technology*. Paper presented at the 2009 Biennial Meeting of the Society for Philosophy and Technology. Simon Fraser University. Retrieved November 25, 2024 (https://www.youtube.com/watch?v=-HzJ_Jkqa2Q).

Feenberg, A. 2021. *Marcuse's Critique of Technology*. Retrieved November 25, 2024 (https://www.youtube.com/watch?v=3fSqwlQw91Q).

Feenberg, A. & McCarty, D. 2023. "Technology, culture and critical theory: an interview with Andrew Feenberg." *International Politics* 49:967–988.

Giddens, A. 1991. *Modernity and Self-Identity. Self and Society in the Late Modern Age*. Stanford University Press.

Gnambs, T. & Appel, M. 2019. "Are robots becoming unpopular? Changes in attitudes towards autonomous robotic systems in Europe." *Computers in Human Behavior* 93:53-61.

Granovetter, M. 1973. "The Strength of Weak Ties." *American Journal of Sociology* 78(6): 1360-1380.

Howcroft, D, & Taylor, P. 2022. "Automation and the future of work: A social shaping of technology approach." *New Technology, Work and Employment* 38(2):351-370.

IBM Data & AI Team. 2023. "Understanding the different types of artificial intelligence." *IBM Corporation*. Retrieved November 25, 2024 (https://www.ibm.com/think/topics/artificial-intelligence-types).

IBM Data & AI Team. 2024. "About algorithm types." *IBM Corporation*. Retrieved November 25, 2024 (https://www.ibm.com/docs/en/cloud-paks/cloud-pak-aiops/4.5.1?topic=algorithms-about-algorithm-types).

Lee, Y.-F., Hwang, G.-J., & Chen, P.-Y. 2022. "Impacts of an AI based chat-bot on college students` after-class review, academic performance, self-efficacy, learning attitude, and motivation." *Educational Technology Research and Development* 70(5): 1843–1865.

Moliner, P., & Gutermann, M. 2004. "Dynamique des descriptions et des explications dans une répresentation sociale." *Papers on Social Representations.* 13: 2.1-2.12.

Nachtwey, O., & Seidl, T. 2024. "The Solutionist Ethic and the Spirit of Digital Capitalism." *Theory, Culture & Society* 41(2):91-112.

Picçarra, N., Giger, J.-C., Pochwatko, G. & Gonçalves, G. 2016. "Making sense of social robots: A structural analysis of the layperson's social representation of robots." *European Review of Applied Psychology* 66(6):277-289.

PricewaterhouseCoopers. 2024. "AI Jobs Eurobarometer. How will AI affect jobs, skills, wages, and productivity?" *PricewaterhouseCoopers*. Retrieved November 25, 2024 (https://www.pwc.com/gx/en/issues/artificial-intelligence/job-barometer/report.pdf).

Rosa, H. 2017. *Social Acceleration, A new theory of modernity*. Columbia University Press.

Schwab, K. 2016. *The Fourth Industrial Revolution*. Penguin Books.

Shoss, M.K., & Ciarlane, K. 2022. "Are Robots Viewed as More of a Workforce Threat in Unequal Societies? Evidence from Eurobarometer Survey." *Technology Mind and Behavior* 3(2):1-13.

Travers, M. 2024. "A Psychologist Teaches Parents How to Fix and iPad Kid." *DataBank*. Retrieved November 25, 2024 (https://databank.worldbank.org/source/world-development-indicators).

World Bank Group. 2016. "World Development Indicators." *Forbes*. Retrieved November 25, 2024 (https://www.forbes.com/sites/traversmark/2024/01/18/a-psychologist-teaches-parents-%20how-to-fix-an-ipad-kid/?sh=5c489ec82e40).

Iulia Beldean is first-year Master's student at the Faculty of Sociology and Social Work at the University of Bucharest. She is currently enrolled in the "Security studies" Master Program, with a Bachelor's degree in Sociolgy. In 2023 she participated in her first ethnographical experience in Chilia Veche in a summer camp of the faculty. She is interested in global and current affairs, the transformation of society and how we might play a role in it.