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ARTICLE

Digital Fears Experienced by Young People in the Age of Technoscience

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ABSTRACT
With the advance of technoscience, digital technologies have started to reshape the traditional array of social fears experienced by younger generations by triggering the appearance of new, digital fears. In this article, we undertake a sociological analysis to investigate the concept of digital fears both theoretically and empirically. Our survey conducted among Russian young people aged 18–30 in 2020 (N = 1050, Sverdlovsk region, RF) showed that fear is a distinctive characteristic of the social well-being of this generation. Moreover, fear tends to become more pronounced both quantitatively (i.e., the frequency of emergence) and qualitatively (i.e. the emergence of new types). The identified digital fears of young people allowed us to draw their typology. Depending on the specifics of digital threat, the following types were distinguished: those associated with impact and control, crime and security, communication and activity, technology and innovation, and social inequality. We show that the expanding

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range of social fears leads to the formation of catastrophic thinking in young people, thereby affecting the level of social well-being and distorting the image of the future.

KEYWORDS
social fears, digital fears, digitalization, youth, social well-being

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Introduction

Fear is an emotion that accompanies almost every person throughout life. Some fears become a source for mobilization and activity, while others may lead to isolation and frustration. Modern fears are associated with the turbulence of modern society: political and economic uncertainty, insufficient protection against crime, new forms of deviation, expansion of various subcultural and countercultural practices, uncontrolled migration, information noise, etc.

Following the approach of Russian sociologists, three basic levels of fear can be defined (see e.g., Shliapentokh et al., 1999; Zueva, 2013). Macro-level fears are global fears associated with natural and man-made disasters. Meso-level fears include social, nation-related fears arising from political and economic risks, inter-ethnic and religious relations, etc. Micro-level fears are those experienced by individuals or small groups in response to health and personal safety concerns. Social fears exert a negative impact on the well-being of a given society, deteriorating the emotional balance and adaptive potential of generations. Fears reduce the quality of life of individuals, social groups, and entire communities.

The advance of technoscience has changed the way people live and interact, to a point that quite a few authors talk of our times as “the age of technoscience” (Reichle, 2009). The Internet, being both an outcome of applied science and a propeller for scientific research, can be seen as the system’s cornerstone and the symbol of the age. On the one hand, the Internet provides new opportunities for the development of relationships and preservation of social ties by facilitating communication between people regardless of their location. On the other, new technologies have become the reason for the emergence and reproduction of negative social processes and phenomena.

Modern researchers note an increase in addiction, especially among younger generations, to social networks, with such negative consequences as sleep deficit, emotional stress, anxiety, lack of control over emotions (Altuwairiqi et al., 2019; Cham et al., 2019; González-López et al., 2021). In a digital society, individuals develop new types of fear, including fear of being excluded from the virtual community (Deniz, 2021; Elhai et al., 2020), fear of missing information (Alutaybi et al., 2020;

Franchina et al., 2018), fear of being microchipped (Chipizatsiia, 2020; Kirziuk, 2021), fear of total social control (Keshet, 2020; Mason et al., 2014).

Social fears and anxieties are a common problem among young people (Alfano & Beidel, 2011; Walsh, 2002; Yli-Länttä, 2020). It is often difficult for specialists—psychologists, psychotherapists, psychiatrists—to determine the specifics of anxiety-phobic disorders (Alonso et al., 2018). Social anxiety is a broad continuum of conditions, and young people with exacerbated symptoms are at risk of developing various mental disorders (Hur et al., 2020). At the same time, as noted by P. Jefferies and M. Ungar, young people aged 18–24 are at the greatest risk of developing extreme social anxiety forms (Jefferies & Ungar, 2020).

Digital fears, being reflected in the minds of young people and refracted through the prism of uncertainty, indicate a state of social anomie. Therefore, it seems highly relevant to study specific forms of digital fears and anxieties experienced by younger generations, as well as to outline approaches to their social diagnostics, prevention, and therapy.

Although it may seem that we treat fear as an absolute evil, it should be noted that fear is an inbuilt instinct that serve important survival functions. Among them is, e.g., the activation of defensive responses (Slobounov, 2008) that encourage an individual to overcome stress and accomplish goals. Through experience, people learn to gain benefits and rewards from dangerous circumstances, which may explain the phenomenon of risk-taking behavior (Bantinaki, 2012). Fully acknowledging the idea that fear performs some positive social role, we consider it a promising venue for future investigations.

In this article, we present a sociological analysis of fears of young people under the conditions of almost total digitalization of all spheres of social life. The current pandemic with its restriction and disruption of off-line interactions makes the problem of digital fears even more pressing. We chose to focus on the analysis of younger people because today's youth, more than any other generation, is immersed in a digital reality, using technology to solve all everyday problems. This trend may have important implications for the future development of society.

Theoretical Framework

Sociological Conceptualization and Interpretation of Fear

The phenomenon of fear in modern scientific discourse appears as an interdisciplinary subject of research. In order to analyze the concept of fear from a sociological perspective, fear should first be defined as a social phenomenon.

The Polish researcher A. Kępiński distinguished the biological and social components of fear (Kępiński, 1977). Thus, biological fear is caused by life-threatening situations, with the threat coming both from the outside (social environment) and from within (violation of the internal balance in the individual's body). The nature of biological fear, as a rule, is an instinctive response towards danger, which most often manifests itself in the desire to run away or hide. This type of fear, therefore, serves a protective function.

Unlike biological, social fear is a complex social phenomenon, which have cultural roots, according to R. Watson (1995). Following a review of more than 600 articles on anxiety disorders, S. Hofmann et al. concluded that social fears have their own features in particular cultures. One and the same social behavior can be perceived as normal in one culture and unreasonable and excessive in another (Hofmann et al., 2010). Heinrichs et al. carried out a comparative analysis of the behavioral practices of representatives of individualistic and collectivist countries and revealed a higher social anxiety and refusal to interact in collectivist countries compared to individualist ones (Heinrichs et al., 2006).

Social fear is an emotion that people experience when they expect any danger or threat. At the same time, as a sensory-emotional factor, fear affects social behavior and social life. P. Sorokin defined fear as an instrument of struggle against fundamental human afflictions (death, disease, poverty, crime) to ensure a solidarized humanity (Sorokin, 1954). As a universal human emotion, fear can become a basis for behavioral practices aimed at achieving the common good.

The complication of social systems and social life expands the range of social fears experienced by people. According to D. Sik, fear is constructed inter-subjectively (Sik, 2020). The reality of everyday life is an inter-subjective world shared by people (Berger & Luckmann, 1966). Following this logic, fears operate and replicate in social systems. Their dissemination is based both on individuals' personal experience of past events and on the experience of others communicating their fears and anxieties. This process is also supported by the phenomenon of growing conformity, which requires individuals to conform to socially accepted rules (Popova et al., 2017).

Promotion of certain fears, primarily through the media, can lead to moral panic as a form of collective behavior (Ungar, 2001). Panic is presented as an extreme, ungrounded fear that spreads rapidly in crisis situations or as irrational behavior that entails serious implications for everyday life (Johnson, 1985; Satawedin, 2020).

Social fears embodied in collective perceptions can be perceived by the mass consciousness as a catastrophe. Fear can be contagious, spreading across groups, communities, and society as a whole. Catastrophic consciousness is a shift of human emotions towards fear, anxiety, and uncertainty, leading to a permanent emotional-sensory imbalance (Shliapentokh et al., 1999). As a result, individuals come to perceive life as uncertain and anticipate looming disasters. People feel helpless and vulnerable when they think about a risky situation (Terpstra, 2011). According to U. Beck, risks are not a unique/exceptional special case; rather, risks are constantly reproduced by society (Beck, 1986/1992). N. Luhmann emphasized that there is no risk-free behavior (Luhmann, 1991).

Since some risks and dangers have an objective basis, the total eradication of social fear is neither a plausible nor a desirable goal. At best, the reduction or elimination of unmotivated fears may be a goal. It should also be noted that, just as fears can be differently distributed in different groups, similarly the real dangers can be different for different groups. A threat may be more or less real depending on social class, gender, ethnic group, age, education, or other features of the individual. There are situations of false consciousness. Groups that are actually in danger do not

perceive the risk, while other groups that are not in danger at all are prey to unmotivated fears. To further complicate the picture is the fact that we cannot know the future with certainty, and some fears concern the future. Based on the available data, we can only decide if fears are grounded or groundless with respect to past or present situations. Such fears are intertwined with the everyday life of individuals and groups, only their direction and scale may change.

Sociologists investigating emotions (Tudor, 2003) argue for the existence of a special "culture of fear" in modern societies. Thus, the American researcher V. Glassner published a landmark work "The Culture of Fear: Why Americans are Afraid of the Wrong Things" (Glassner, 1999). Following an analysis of more than 10,000 newspaper, radio and television reports on social problems, the author emphasized the destructive nature of inflated fears. Some social groups may promote pseudo-fears, thereby sowing panic and mass hysteria, with the purpose of exploiting large communities and organizations.

F. Furedi also highlighted the importance of a more systematic theoretical analysis of fear in its social context (Furedi, 1997). A. Tudor developed a set of fear parameters in order to elucidate how fear is created, embodied, and overcome. This model can also be used to investigate those aspects of social life that are transformed by social fears and catastrophic consciousness. Among them are processes associated with the modern trend of digitalization.

In a broad sense, digitalization can be seen as a global trend in the development of society, which is based on the transformation of information into digital form. Digitalization has replaced informatization, the period when computing technologies and computing machines were used to solve specific economic, military, or social problems. Today, in the age of technoscience, with the emergence of Industry 4.0, digitalization is forming integral technological environments (ecosystems, platforms, services), within which users can generate the friendly environment they need, and, in fact, design their own social reality (see e.g., Przhilenskiy, 2021; Sushpanova, 2018; Till, 2021; Veraksa et al, 2021). This allows social actors to solve entire classes of problems and build an alternative social structure of society, i.e., to structure the reality (Giddens, 1991). Thus, in 2015, the Davos Economic Forum identified more than 20 events predicted until 2025 that could have a significant impact on the life of society (Global Agenda Council, 2015). Among the most significant anticipated events related to digitalization are the following: Internet of Things (clothes and glasses connected to the Internet, smart homes and smart cities), cloud technologies (the possibility of unlimited free cloud storage, smartphones with constant Internet access), SD-printing (human organs, cars, consumer goods, etc.), artificial intelligence.

Digitalization, on the one hand, acts as a unifying and integrating principle; on the other, it creates even greater social faults, generating new forms of inequality and discrimination. In this regard, a comprehensive examination of the processes and effects of digitalization is required. One aspect of this process is the formation of digital fears. By digital fear we mean a response to a real or perceived danger generated by the digitalization of various spheres of public life and threating the physical, psychological, social, and spiritual well-being of the individual and social communities.

Digital Fears in a Postmodern Society

We live in the age of technoscience. *Technoscience* is a term crafted and used by postmodern thinkers such as Gilbert Hottois, Bruno Latour, and Donna Haraway to emphasize that current science and technology are mutually interacting at an unprecedented scale (Kastenhofer & Schwarz, 2011). Several denominations have also been introduced to indicate the society in which we are living, such as "postmodern society" (Lyotard, 1979/1984), "late modern society" (Giddens, 1991), "liquid society" (Bauman, 2000), "risk society" (Beck, 1986/1992), and, more recently, "digital society" (Delgado, 2016; Third et al., 2019). We decided to use the term crafted by Lyotard; namely "postmodern society". However, a clarification is needed.

"Postmodern" is a polysemous adjective used in different contexts. It is used in art and literary criticism to indicate artworks based on the ironic play with different styles and narrative levels. It is used in the philosophy of science to indicate epistemologies that emphasize the socially constructed character and relative validity of any scientific theory and, therefore, dispense with the category of truth. It is used in sociology to indicate a specific stage of society in which skepticism and nihilism prevail, the "grand narratives" of Western culture—such as Enlightenment, Marxism, Liberalism, and Christianity—have lost their persuasive power, technoscience has assumed a central role, and the virtual is often preferred at the expense of the real. These uses of the term, although different, are obviously related, as behind them there is always a fundamental questioning of the supposed boundaries between *reality* and *virtuality*. Nonetheless, it is worth noting that, here, we use the adjective "postmodern" in its sociological meaning.

There is no consensus about the beginning of postmodernity. It has been set at the end of the Victorian Era (1901), at the end of the Second World War (late 1940s), in concomitance with the worldwide escalation of social conflicts comprised under the term "Protest of 1968", or in the late 20th century (especially the 1980s) with the spread of cable television and the diffusion of personal computers. This debate is however invariably focused on Western Europe and North America. In Russia, the main features of the postmodern society are visible only after the transition from socialism to capitalism that is starting from the early 1990s. This means that in Russia concepts such as "postmodern society" and "digital society" tend to overlap. Still, if all "digital fears" are postmodern, not all "postmodern fears" are digital.

Some fears we encounter in the digital society are not detectable in previous societal stages. For example, the fear arising when a temporary network failure occurs or smartphone data runs out has no precedent. In this circumstance, we fear of being disconnected from the Internet for a long time and, therefore, not being able to perform the tasks that are required of us by social institutions (school, work, family, etc.). New is also the fear of being connected for too long, becoming psychologically dependent on the Internet, social networks, computers, and smartphones. There are also situations in which the two digital fears of "being disconnected" or "too much connected" arise confusedly in the same individuals, revealing a new form of schizophrenia.

Then, there are old fears that in the postmodern society take on a new form, which we could define as "final", because it represents the *non plus ultra*, the unsurpassable culmination of previous fears. We will give four examples.

The fear of a jobless future. The fear of losing a job due to the increased productivity of technology is found in all stages of the industrial revolution. Manufacturer workers in the eighteenth century feared mechanical looms, nineteenth-century factory workers feared the steam engine, assembly line workers in the twentieth century feared robotization, and ever since computers appeared, service company employees fear computerization. Technologies are different, while the fear—whether motivated or unmotivated—is the same. It is the fear of technological unemployment (Campa, 2015, 2019). However, the "final" phase of this fear has specific determinations. Since artificial intelligence can replace not only arms but also brains and perhaps creative work itself, the fear of a jobless future is emerging (Brynjolfsson & McAfee, 2014; Ford, 2015). That is, not only the disappearance of a category of workers is feared, but of work itself. John Maynard Keynes (1930/2010) assumed that the increase of productivity would eventually give birth to a leisure society in which the fruits of automated labor would be equally redistributed. Alternative dystopian scenarios are gaining the scene today. When the prospect of a jobless society is accompanied by the distrust of the elites, "exterminism" is included among the possible outcomes of the process (Frase, 2016, pp. 120–143). It is feared that, if workers become superfluous, the elites could consider exterminating a large part of the world's population, or promote ways of life that make reproduction impossible. For example, the current pandemic has been interpreted by some as a conspiracy by the elite against the commoners. The fear is also fueled by continuous statements by experts who affirm that the world population is out of control and a reduction is urgently needed to remedy the problem of scarcity of resources, pollution, and global warming. The fear of extermination is of course not new, but, in the past, it was linked to the hostile actions of foreign nations. People have always feared being *exploited* but never *exterminated* by their own elites. Exterminism is a new digital fear.

The fear of deepfakes. Identity theft has existed in the past as well, but it was a rare event that required an extraordinary coincidence of circumstances, such as an incredible physical resemblance, to occur. Think of the identity of Count Alessandro Cagliostro and Giuseppe Balsamo: it is still debated whether it was the same person or two different ones. However, in the digital society, identity theft takes on a final form, because anyone's identity can be perfectly simulated. We refer to the fear of the so-called "deepfakes", or the use of artificial intelligence to create synthetic images, videoclips, audio or voice recordings indistinguishable from the natural ones of an individual. The suspicious attitude towards this technology is not without foundation as deepfake videos or telephone calls have already actually been used in attempts at blackmail and fraud, or for personal revenge. For example, it happened that the CEO of a British energy company was deceived by a deepfake voice from the head of his parent company. The synthetic voice called for the transfer of an emergency fund of $243,000. The manager obeyed the order. Subsequently, the real CEO asked for a fund transfer again and the manager realized he was being duped.

However, the money had already been transferred to a third party's bank account and was no longer recoverable (Stupp, 2019). The fear of deepfake is widespread, even if it is more motivated when felt by people who manage large assets or have great responsibilities, such as the CEOs of large companies or politicians. But sometimes even people whom no one cares about are afraid of identity theft. In this case, a paranoid component plays a role.

The fear of the matrix scenario. Another fear typical of postmodern society is the fear of an unknown, unrecognizable, totally different, dystopian future. For a long stretch of human history, the dominant idea was that tomorrow would be more or less like today, just as the present world did not appear as radically different from yesterday's world. Nothing new under the sun, it was often said. With the Industrial Revolution, the world began to change at an increasing pace, causing adaptation problems such as the "cultural lag" already studied by William F. Ogburn (1922). Still, in Ogburn's time, adaptation problems notwithstanding, the common conviction was that tomorrow's world would be better than today's world. The idea of progress born with the Enlightenment and Positivism was still alive. A whole series of events, such as totalitarian regimes, the two World Wars, the Holocaust, the invention of weapons of mass destruction (nuclear, chemical, and bacteriological), the Cold War, pollution, global warming, global terrorism, economic crises, etc., has spread the belief that the future may be worse than the present. The aforementioned catastrophes and risks of the 20th century stimulated a dystopian imagination prefiguring new future catastrophes. Among the apocalyptic scenarios typical of the digital society is the emergence of a malicious artificial intelligence capable of assuming total control over the life of human beings (Bostrom, 2014). It is the scenario imagined in films such as *The Matrix* or *Terminator*. A malicious AI could enslave all humans, or eliminate them at will, by taking direct control of drones, combat robots, supercomputers, nuclear weapons, and other electronic devices that our lives depend on. People fear a future in which they do not have freedom of choice, personal objectives, meaningful lives. Driven by machines, they would be reduced to living and thinking like machines.

The fear of a digital panopticon. Perhaps we need to go back to the Paleolithic hunter-gatherer societies to find human groups in which there was no privacy and everyone knew everything about everyone else. With the Neolithic revolution and the birth of stratified societies, the question of information control also arises. In stratified societies, the ruling classes have always exercised forms of control over the ruled classes. Armed guards kept an eye on slaves in ancient societies or serfs in feudal societies. Both government's officers and conspirators against the established order have always feared the presence of spies, infiltrators, double agents, traitors. In short, the fear that our information could be 'stolen' and used against us is as old as complex societies. In the postmodern society, however, this fear reaches its final stage, once again. Novels like George Orwell's *1984*, Aldous Huxley's *Brave New World*, or Ray Bradbury's *Fahrenheit 451* have foreshadowed societies in which an unscrupulous elite exerts total control over the population by using the most modern technological devices. Afterwards, postmodern thinker Michel Foucault has brought to attention

Jeremy Bentham's panopticon, by presenting it as a metaphor for the surveillance tendencies of disciplinarian societies (Foucault, 1975/1977).

The appearance of the Internet, smartphones, video cameras placed everywhere, and pieces of software capable of reading conversations by detecting lip movements, or intentions and sexual orientations by means of facial recognition, has confirmed that certain fears are not entirely unmotivated. There are multinational corporations that systematically collect data on our movements, shopping, preferences, and conversations to create digital profiles that can be sold to other corporations or governments. Big Data is mainly used to elaborate targeted marketing strategies, but, in perspective, it can be used for any malicious intent, such as blackmailing dissidents or competitors. The censorship exercised by the Silicon Valley giants over some information or opinions of citizens not aligned with the dominant narrative has further spread this digital fear among ordinary people. The posts published on social networks are constantly scrutinized by teams of private observers and sometimes censored. The President of the United States of America himself has been censored in several situations, raising the question of what the real locus of power is in democratic nations. Although the dominant narrative talks about "fact-checking" for the good of people, the social networks themselves have had to admit that censorship is often based on mere "opinions". In the digital world, therefore, some opinions are worth more than others, in contrast with the basic rules of democracy and free speech. The establishment in some countries of digital passports that prove anti-COVID vaccination and make the possibility of working, attending public events, or making purchases dependent on the regularity of the QR code has only further fueled these fears. The fear that spreads is that the elite's control finally arrives inside the human bodies themselves, through the installation of microchips. Some companies have actually patented an implantable microchip that allows users to carry their COVID-19 vaccine passport under the skin, instead of downloading the QR code on the smartphone (Teh, 2021). Especially in those countries in which the vaccine passport is mandatory also to work or do shopping, people start fearing a future in which humans are permanently microchipped like farm animals.

A corollary of this fear, which only the future will tell us if motivated or unmotivated, is that the microchip will not only collect data on our state of health, communications, preferences, or movements, but also heterodirect human behavior to make it functional to the political and economic interests of the elites. Already back in 1981, Jean Baudrillard noticed that postmodern society is moving beyond the panopticon model and the propaganda system, due to microprocessing, digitality, and cybernetic languages. These are his words:

> That is what inspires fear, and what is thrilling. The 'thrill' of advertising has been displaced onto computers and onto the miniaturization of everyday life by computer science. The anticipatory illustration of this transformation was Philip K. Dick's papula—that transistorized advertising implant, a sort of broadcasting leech, an electronic parasite that attaches itself to the body and that is very hard to get rid of. (Baudrillard, 1981/1994, p. 89)

Materials and Methods

In November–December, 2020, we conducted a sociological survey among young residents (aged 18–30) of the Sverdlovsk region (Sverdlovskaya oblast'), Russia. The Sverdlovsk region is a large federal subject of Russia located in the Ural Federal District. As of January 2021, the population exceeds 4 million people, with its fourth represented by young people (18–30 years old)[1]. According to the statistical data (Informatsionnoe obshchestvo, 2020), 75.8% of households in the Sverdlovsk region have Internet access, which level is comparable with the EU countries. Out of all young people aged 15–24, 99% are Internet users.

Following the analysis of literature sources presented above, as well as based on the surveys conducted the Vserossiiskii Tsentr Izucheniia Obshchestvennogo Mneniia (VTsIOM) [Public Opinion Research Center] (Karta strakhov rossiian, 2019) and Fond Obshchestvennoe Mnenie [Public Opinion Foundation] (Trevogi i opaseniia, 2019), we developed a typology of personal fears, which can be considered fundamental for modern social systems. This typology includes the following nine types:

(a) fears of social rejection (condemnation, disapproval, loneliness, indifference);
(b) fears of loss (work, friends, income, physical attractiveness);
(c) fears of decision-making (taking responsibility, choosing a job, place of study, partner);
(d) fears of publicity (showing feelings, declining other people's requests, public speaking, conflicts);
(e) organizational fears (lack of self-realization, failing to cope with a task/work, making mistakes at work, losing in a competition);
(f) systemic fears (persecution for political or other beliefs, corruption, unemployment, lower living standards);
(g) fears of various categories of people (criminals, terrorists);
(h) fears for life and health (death, own illness or illness of close people, consequences of an illness, side effects of treatment or vaccination);
(i) postmodern fears (uncertainty, unknown future, loss of purpose, lack of plans, meaninglessness, uncontrollable situations).

The above classification covers postmodern fears formed during the pre-digital period, thus giving a general description of the postmodern society. However, this classification does not distinguish digitalization as a basis for the appearance of new types of fear.

At the empirical level, for each type of personal fears, four indicators were proposed (a total of 36 indicators), each of which was assessed by the respondents on a 4-point scale (where 1—"I never experience this fear" and 4—"I am constantly afraid of this"). For the sake of elucidation, consider the following example. The category "systemic fears" includes four indicators: (a) fear of persecution for political

[1] Department of the Federal Statistical Service for the Sverdlovsk Oblast and Kurgan Oblast https://sverdl.gks.ru/storage/mediabank/bjOs84l9/%D0%A7%D0%B8%D1%81%D0%BB._%D0%9F%D0%92%D0%A1_2016-2021.xlsx

opinions; (b) fear of violation of civil rights, arbitrariness of law enforcement agencies, corruption, (c) fear of lower incomes, unemployment, decreasing family living standards, inability to sustain oneself or family, (d) fear of defenselessness before the authorities. After obtaining the respondents' answers, we calculated an index for each indicator using the principle of arithmetic average. Each indicator could take a value from 1 to 4 (4 points if all respondents indicated that they constantly experience this fear, 1 if no one ever experiences it). Further, the indices for 4 indicators were added up, and the final score for this type of fear was obtained.

The data was obtained by the method of formalized online survey. To this end, we developed a questionnaire consisting of 45 questions (closed, open, and semi-closed). The questionnaire was open for participant input from November 5 to December 31, 2020. The questionnaire was distributed through social networks, websites of educational institutions and urban communities, city portals, etc.

In total, 1,050 questionnaires were collected after rejecting those failing to meet the survey's requirements. The respondents were selected based on the following criteria:

- *City of residence*. Among the respondents, 650 (62%) were from Yekaterinburg (a megapolis, the 4th largest Russian city) and 450 (38%) were from small towns of the region;
- *Gender*. 60% were female, and 40% were male;
- *Employment* (approximately equal presence of students and working youth). About 37% of the respondents were students, 32% worked, 25% combined work and study, 6% had temporarily no occupation.
- *Age*. According to this parameter, the age distribution was as follows: 18–22 years old—57.7%, 23–26 years old—25.8%, 27–30 years old—16.5%.

The average duration of completing the questionnaire was 20–30 minutes. The obtained primary data was processed using the IBM SPSS software, subjected to cross-tabulation and correlation analysis (calculation of percent, medians and correlation coefficients).

It should be noted that our sample cannot be considered representative, because it included young people residing in only one Russian region. The Sverdlovsk region differs from other Russian regions in terms of several economic and social indicators. Therefore, our findings cannot be directly extended to all Russian young people and may not agree well with other studies of the social fears of young people.

Results and Discussion

Fear is experienced almost constantly by the majority of the study participants: 22% experience it almost every day, and 41.1%—several times a week. Assessing the impact of fear on a person, young people emphasize the following negative consequences: 80% believe that fear reveals negative traits in a person, making him or her more aggressive, selfish, and distrustful. For 66.1%, fear is a factor that complicates life, since it makes a person's behavior less conscious, more impulsive and emotional, and therefore, prevents a person from making reasonable choices. In a certain sense, fear limits the freedom of choice.

Fully recognizing that the number of risks and dangers in modern societies is constantly growing, the respondents, however, assessed this process differently. About 26.4% see the growth of risks as an inevitable and natural payment for progress. Conversely, 73.6% of the respondents believe that risks should be fought at all levels (institutional and personal). Women and people with low income and low education are more likely to see an increase in the number of risks in the modern society as a disadvantage; this attitude becomes more pronounced with age and the advent of children.

Postmodern fears (excluding digital fears) were ranked the 2nd most frequent fears experienced by young people (9.79 points), yielding in importance only to systemic fears (10.26 points). The total indicator of postmodern fears includes the following: fear of the unknown and a lack of ability to make plans (2.53 points out of 4 possible); fear of losing a goal, meaninglessness of life (2.51); fear of the future (2.43); and fear of situations that cannot be controlled (2.32). A high proportion of postmodern fears among the younger generation can indicate a negative scenario of further social development, under which the younger generation will be neurotic and despaired. R. Carleton believes that the fear of the unknown is the fundamental fear that drives all other anxieties, affecting somatic and eating disorders, causing depression and other mental/psychiatric illnesses (Carleton, 2016).

Postmodern fears today are supplemented by new fears and anxieties. The COVID-19 pandemic has extended the range of social fears by the emergence of "pandemic" fears. For example, young people began to experience the following communication difficulties: 26% are afraid to come into contact with a sick person; 22%—to commute by public transport; 14%—to be physically close to other people; 14%—to visit mass events; 7%—to go shopping. The emergence of new fears indicates changing social trends that require a deeper understanding.

In turn, these pandemic fears make people use digital technologies more actively and broadly. As part of the survey, the respondents were asked to assess which digital threats they found more worrying. As a result, we divided all digital fears into the following five types (see Table 1):

A. *Impact and control.* These fears are related to the problem of external interference with life privacy through the use of digital technologies. These fears affect the individual's consciousness and behavior. This category of fears was found to be of the greatest importance for our respondents: 55.8% fear for total control by means of video surveillance, built-in tracking programs on mobile devices, etc.; 48.5% believe that they run the risk of wiretapping or being monitored on social networking sites, leading to the impossibility of maintaining the secrecy of correspondence. A high level of fears (45.8%) is associated with the manipulative influence of the media, an increase in the number of fake news, and ideological violence. Similarly, having interviewed more than 3,000 students from the University of Shanghai, Y. Jiang (2021) found evidence for a psychological negative impact of social networks on students during the pandemic. The respondents reported an increase in anxiety levels, deterioration in academic performance, and physical exhaustion. The technologies based on biological intervention raise a lesser concern: fear of microchipping was reported by

27.8% of the respondents, and genetic hybridization (animals, plants, humans) worries about 18.1%. These technologies are likely to be perceived as controllable by both the person (through food and medical treatment choices, etc.) and governmental bodies.

B. *Crime and security.* This group of fears is related to the possibility of illegal action using digital technologies. One of the main fears among young people (56%) is associated with the security of personal data. No doubt, this trend is associated with an increase both in the volume of personal information posted publicly (social networks, messengers, advertisement portals, etc.), and the number of external threats (hacker attacks, virus programs, targeted advertising, etc.). About 42.9% of young city dwellers are afraid of Internet scammers, with the spectrum of threats being extremely wide: from cyberbullying and death groups, to twin sites and the security of Internet payments. The fear of victimization in the online communication environment (Alam et al., 2021) can be defined as a fear of digital victimization. Every fourth respondent fears for the loss of important information, which anxiety is frequently based on self-mistrust (fear of breaking the phone, not saving data, forgetting the password, etc.) and the distrust of electronic devices (their breaking down, running out of power, not connecting to the Internet, etc.). Therefore, it seems logical that personal information security is increasingly included in the range of basic competencies that a modern person should possess.

C. *Communication and activity.* These fears are based on technology-related changes in the way and pace of life, as well as human interaction. About 28.4% of our respondents indicated a constant lack of time and acceleration of communications, which give rise to the fear of failing to complete all the tasks and meet the deadlines. A quarter of young people are susceptible to the fear of being offline, being without a phone or being disconnected. These fears can be supplemented by the fear of missing out (FoMO), which, according to N. Bloemen and D. De Coninck (2020), determines the need for young people to be constantly online to check social networks. This state generates new (including well-being-threatening) feelings and psychological problems in the period of the pandemic (Hayran & Anik, 2021). For example, K. Sekscinska and D. Jaworska, having interviewed 295 Polish female users of social networks after the famous outage on October 4, 2021, concluded that women with low self-esteem might experience negative emotions in response to technological outages due to increased fear of missing out (FoMO) (Sekscinska & Jaworska, 2022). A significant part of modern fears is associated with the growth of online communications (mediated by electronic devices) and communications with electronic systems that replace interpersonal communication (bots, answering machines, ordering systems for taxis, goods, etc.). As a result, the respondents (15.3%) mentioned problems associated with the growing social distrust against the background of an increasing dependence on electronic systems (on public transport, airplanes and elevators, medical intervention, etc.).

D. *Technology and innovation.* These anxieties are related to the unfolding discourse about the nature of artificial intelligence and its social implications. Today, the threats of artificial intelligence have become a topic of discussion in serious scientific publications, business media, and yellow press. Experts offer analytical forecasts with

significantly different assessments. Thus, according to RANEPA specialists, half of the able-bodied citizens in Russia can be excluded from active economic life as a result of robotization (Zemtsov, 2017). However, D. A. Medvedev (who was Prime Minister of the Russian Federation in 2018) claimed (Polovine rossiian, 2018) that automation and robotization would not necessarily lead to unemployment. A lack of consensus, contradictory information, controversial concepts, unresolved ethical dilemmas, and uncertain prospects for professional life result in disorientation and confusion for ordinary people. About 22.2% of young citizens are afraid of robotization in the workplace and the displacement of humans by robots. About 14.6% speak directly about negative emotions connected with the expansion of artificial intelligence. A number of experts in Russia predict a deterioration in the attitude of the population towards new technologies along with their active deployment (Uskova & Astrakhantsev, 2020).

E. *Social inequality.* These fears are associated with negative expectations about the growing inequality in access to information resources and technologies, the polarization of society and the exclusion of citizens from economic processes, depending on the level of their digital competencies and education, age, etc. As a result, there is a danger that economic benefits will be distributed more and more unevenly among people and countries. The "digital divide" as uneven and unequal access of countries, social groups, and individual users to network telecommunications infrastructure, digital devices, and digital services significantly limits people's opportunities (Vartanova & Gladkova, 2021). Today, 12.4% of young urban dwellers are worried about potential digital discrimination. In turn, a new type of personality possessing new types of competencies is being formed. It can be expected that individuals and groups being capable of producing and effectively using digital technologies will become more competitive than those lacking these skills. In this respect, an emergency transition to online learning undertaken in many countries during the pandemic seems to be beneficial from the standpoint of consolidating and developing digital skills. In our study conducted before the pandemic at the end of 2019, 37% of students considered involvement in the modern information and digital environment among the advantages of this form of education (Antonova et al., 2021). It seems important to improve our understanding of the fear of digital divide by analyzing issues related to both the digital inclusion of young people and asymmetric distribution of power between those who collect data and those who are the objects of the data collection process. This process is commonly referred to as the "Big Data divide" and is associated with the issues of digital literacy education (Pawluczuk, 2020).

A number of differences can be distinguished between the perceptions of digital threats by different categories of respondents. In comparison with megapolis residents, residents of small towns fear the following phenomena more frequently: total control and tracking, microchipping, Internet fraud, robotization of work, and the treat of a malicious artificial intelligence. Conversely, small town residents showed lesser concern for the security of personal data, loss of information, loss of communication. Women are more likely than men to experience digital fears in general; they have a wider personal range of digital fears. On average, a female respondent selected more answers than a male

respondent: 5.2 and 4.3, respectively. Women are more worried about the threats of robotization, biotechnology, chipping, total control, lack of mobile communications, and Internet fraud. Our results agree with those obtained by Swiss researchers, who found that young women experience more stress and anxiety in the face of pandemic uncertainty (Mohler-Kuo et al., 2021). Despite the fact that only young people took part in the study, we found some distinctive trends within this group. Thus, the older the survey participants, the fewer digital fears they report (the respondents aged 27–30 and 18–22 gave an average of 4.3 and 5.4 answers, respectively). Older participants had fewer fears related to microchipping, security and loss of personal data, manipulation of consciousness, wiretapping, and Internet surveillance.

Table 1

Typology of Digital Fears Experienced by Young People

Type	%
IMPACT AND CONTROL	
Total control over a person using electronic devices, video cameras, etc.	55.8
Wiretapping, checking the content of messages and statements, Internet surveillance	48.5
Impact on the person's consciousness and opinion using the media through manipulation, propaganda, fake news, etc.	45.8
Microchipping people	27.8
Biotechnology, human intervention in the genetics of humans, animals, plants	18.1
CRIME AND SECURITY	
Security of Personal Data	56.0
The rise in the number of Internet scammers (twin websites, online payments, dating sites, death groups, etc.)	42.9
Losing information stored on personal phones, tablets, etc.	25.8
COMMUNICATION AND ACTIVITY	
Lack of time, fear of not being able to meet the deadline	28.4
Fear of being left without communication, without a phone, out of range	25.6
The dependence of life and health on strangers (public transport drivers, pilots, builders, etc.)	15.3
Replacing interaction between humans by interaction with electronic systems	12.0
Shifting all interactions to online mode, difficulties of offline communication	11.7
Being invisible on social networks (having few likes and subscribers, etc.)	6.1
TECHNOLOGY AND INNOVATION	
Robotization of processes, replacing humans with robots	22.2
Distribution of artificial intelligence	14.6
Creation of unmanned vehicles	4.6
Technological progress, emergence of technological innovations that need to be constantly mastered	4.5
SOCIAL INEQUALITY	
Increasing polarization of people and countries in terms of access to resources	12.4

Conclusion

Today, more and more voices are heard that humanity is rapidly entering the so-called "new normality" (Khodykin, 2020; Tesar, 2020). Habitual rules, familiar values, and everyday practices are undergoing drastic transformations, which makes people's judgments and behavior extremely uncertain. The radical transformation of the way of life brings about the emergence of new attitudes, assessments, behaviors. The unpredictable consequences of this process make the stability of human beliefs, perceptions, and opinions highly uncertain.

This process is inevitably changing the structure of fears experienced by younger generations. Interestingly, the traditional range of social fears of young people undergoes both hierarchical changes, when some fears become more prominent, and those related to the appearance of new types of fears. The empirical part of our study conducted among Russian young people aged 18–30 in 2020 (N = 1050, Sverdlovsk region, RF) showed that today's young people experience more fears connected with the uncertainty of the future, self-realization, and decision-making. In addition, digital fears are becoming more intense. The most pronounced among them are the fears of total social control, security of personal data, surveillance over telephone conversations and correspondence, as well as the impact on consciousness through the media. Therefore, fear can be referred as a distinctive characteristic of the social well-being of this generation.

Consequently, digital fears not only substitute traditional anxieties, but complement and reinforce them, thereby significantly expanding the range of fears experienced by modern young people. The task of overcoming social fears, reducing the level of uncertainty, and mitigating possible negative consequences of digitalization requires new personal competences, including developed emotional intelligence (Campa, 2020), creativity, collaboration readiness, etc.

It should be noted that the digital fears of young people reflect the anticipated, perceived threats and worries about the future society. Therefore, fears of the postmodern society have a principally different structure, due to a growing uncertainty, an increasing number of forces uncontrollable by humans, and changing attitudes towards the idea of progress. The fear of the future is capable of transforming, to the point of destruction, the socio-cultural foundations of society.

This poses special challenges for governments in terms of regulation and management of social fears, as well as implementation of anti-crisis measures as a complex of political technologies for supporting the population during periods of crisis and instability. Digital fears also raise such questions, as digital human rights, digital justice, digital education, as well as the limits of implementation of digital technologies.

Our empirical research revealing the presence of a social problem, such as the discomfort shown by our respondents towards certain technological trends, cannot but stimulate reflection on possible solutions. Even if our research does not allow us to generalize, it is clear also from other research and theoretical literature that digital fears and worries about the future concern many nations. Our final reflections

are therefore not specifically focused on Russia, but extend to all technologically advanced countries.

As we mentioned above, remedies to social fears can also come from public policies. Political leaders can benefit the countries they govern by finding ways to manage fears of real threats and convincing citizens to get rid of unmotivated fears.

We cannot, however, take this will for granted. This would be naïve. There is a vast literature pointing out that unmotivated fears are sometimes knowingly generated by the elites in order to maintain their rule over society (Lupia & Menning, 2009). The Oceania imagined by George Orwell, in which unscrupulous rulers control the subjects by terrorizing them with an imaginary war, is just a fictional extremization of situations that fill history books. The mechanism is well-known. If citizens are afraid of an external or internal, visible or invisible enemy, a government that protects them is necessary. If the "danger" is great, governments claim special powers to fight it. The state of emergency is accepted by citizens out of fear. A prolonged state of emergency may eventually turn into a permanent state of exception. It yet remains to be seen whether the current pandemic indeed threatened the existence of the mankind.

Our recommendation can therefore only be addressed to political representatives and civil society leaders who sincerely want to reassure citizens about the future. If this is the goal, the most effective solution is to put in place policies that have a concrete impact. Reassuring words are not enough. Those who fear technological unemployment can only get rid of their anxiety if they see governments doing everything possible to redistribute the benefits of digitization and robotization to the entire population, for example by reducing working hours or rapidly reabsorbing unemployment. If, on the other hand, they see that unemployment is on the rise and profits from increased productivity are flowing into the bank accounts of national or global economic oligarchies, the fear of the future can only grow. This also applies to data security, privacy, social control, deepfakes, etc. The only way to reassure citizens about these threats is to pass strict laws to protect private information and communications, even if such laws harm the interests of large corporations.

In short, all the solutions that have been conceived and exposed here, or in the literature we have cited, only make sense if there is an actual will to benefit society as a whole. As obvious as it may seem, everyone can see that this obviousness is not always reflected in the reality of observable public policies.

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