SOCIAL SCIENCES

USE OF ARTIFICIAL INTELLIGENCE IN FAMILY RELATIONSHIPS

Dr. Aghayeva M.
Baku State University, Department of Sociology
https://doi.org/10.5281/zenodo.21982221

Abstract

This article analyzes the integration of artificial intelligence (AI) technologies into the daily lives of modern families. The main areas of AI application are examined. The impact of home management using smart home systems and voice assistants on children's educational trajectories and family communication is studied. Special attention is paid to the process of "domestication" of AI, in which technological devices become full-fledged actors in family diaries. The article also touches on social and ethical problems associated with the widespread application of AI in the private sphere. This study examines the impact of new digital technologies and artificial intelligence on user consciousness. Artificial intelligence is already integrated into family systems at the everyday level, but it still remains a poorly understood phenomenon in developmental psychology, personality psychology, and pedagogy. In particular, it is necessary to understand how everyday artificial intelligence affects the development of a child's individual consciousness and parent-child relationships. The aim of the study was to investigate the synergistic effects of neural networks and individual and group consciousness in family systems. The experiment demonstrated the integration of a digital assistant into the family space and the emotional response to interaction. The study showed that neural networks are increasingly integrated into the parental holons and parent-child subsystems of young families. Family systems are currently adapting to new user experiences.

Keywords: artificial intelligence, family, everyday experiences, smart home, voice assistants, digitalization. young family, parent-child relationships.

INTRODUCTION

Artificial intelligence (AI) technologies are rapidly moving beyond science fiction or highly specialized industries and are actively penetrating the most everyday aspects of human life. V.A. As Aksentov notes, the development of AI has reached a point where its presence is increasingly felt in everyday life, which opens up new prospects for increasing comfort and efficiency [Aksentov V.A. (2023) , p. 80]. One of the most important spaces of this transformation is the family — a fundamental social institution, the foundations, rituals and communication practices of which have undergone significant changes under the influence of smart technologies. The "domestication" of artificial intelligence occurs through smart speakers. The main process describing the integration of new technologies into the home is their "domestication". This term, discussed in detail by A.M. Korbut, means not only the physical placement of the device in the home, but also its integration into the social practices, routines and semantic systems of the family [Korbut A.M. (2021), p. 194]. Smart speakers with voice assistants (Yandex.Station, etc.) are a modern example of this "domestication". Initially perceived as devices for listening to music or getting quick answers to questions, these devices gradually take on the functions of mediators, organizers, and even companions. They become the central control unit of the “smart home” system: they regulate lighting and climate control, activate household appliances, and monitor security systems. This allows for the automation of many everyday tasks and frees up family time. Nowadays, verbal interaction with such devices is becoming more and more natural and resembles human communication, which contributes to their rapid adoption in the family environment [Azina D.B., Pyankova P.A., Kozitsyna M.O., Potapov D.A., Ivanova V.V., Kulagina E.V., Kuznetsova A.S.(2022). , p. 56]. A voice assistant that can play a fairy tale at the child’s request, remind an elderly relative of the time to take medicine, or help with a recipe while cooking, ceases to be just a tool and acquires the properties of a quasi-subject, an “invisible family member” [,Korbut A.M. (2021) p. 205]. In addition, artificial intelligence assistants affect the distribution of household responsibilities. For example, the ability to create shared shopping lists synchronized between the smartphones of all family members simplifies logistics and reduces communication gaps. Thus, it is not just a matter of technologically equipping the house; it is a restructuring of existing household practices and rituals. The role of artificial intelligence in the upbringing and education of children deserves special attention. Modern technologies offer a wide range of tools aimed at the development of children at home. Artificial intelligence-based educational platforms can analyze student activity and adapt teaching materials to their individual needs, set tasks at an optimal level of difficulty. This creates a gap between families who can use artificial intelligence to improve their quality of life and those who cannot. As a result, the digitalization of everyday life can become another factor in the deepening of social stratification.

METHOD AND RESEARCH

This article uses general scientific methods: experimental justification and analysis and synthesis in a theoretical overview. Empirical methods were also used in conducting socio-psychological research, in particular expert interviews (qualitative experiments), in-depth interviews, conversations and surveys. The article also presents data obtained from analysis, modeling and forecasting using a neural network (GPT4 conversation).

Topics

The study involved 49 participants, 33 of whom were members of 10 families living in Baku; 12 of whom were parents (men and women aged 27-38) and 21 children (boys and girls aged 4-14). Separately, 15 participants aged 4-13 years participated in in-depth interviews to determine the impact of the digital nanny on their mental state. The families studied included at least two children aged 7-14 years and used the digital nanny "Damla" (and/or "Sevil"). The families were characterized by a stable, positive and caring (supportive) atmosphere in the parent-child relationship.

Research Procedure

Participants signed a written consent form to participate in the experiment on the condition of anonymity (no personal data will be used in the publication). The interviews were audio-recorded and transcribed. The condition for participation in the experiment was to use the digital nanny "Damla" or its equivalent in the family environment and in the upbringing and education of their children for at least one year. Interviews with children were conducted only in the presence of parents. Parents were asked the following questions:

1. What advantages do you see in using the "smart speaker" in the education and upbringing of children?

2. What limitations have you observed in using the "Smart Speaker"?

3. In your opinion, have children's behavior, family communication style, daily routines or customs changed?

The children participating in the experiment were asked the following questions:

1. Do you enjoy communicating with "Damla" (or its equivalent)?

2. What type of communication ("reading aloud", learning or conversation") do you prefer?

3. Imagine that "Damla" gave a different answer than the parents' answer. Which idea do you think is more correct?

The in-depth interview method used with children was also used in our study.

Research Results

It turned out that the neural network predicting possible future interactions between everyday artificial intelligence and a child (GPT4 conversation) shows the development of the following communication parameters (events):

1. Personalization and adaptation of the environment. (Neural networks are used to create personalized recommendations that can personalize the living environment).

2. Changing spatial perception.

3. Automation and optimization of space (route planning, resource management, object recognition).

4. Social change.

Thus, the parameters of the digital assistant create the illusion of "understanding" the user's characteristics, the illusion of targeted communication, which can lead to the illusion of intersubjectivity, dialogic communication and, as a result, the increased influence of the neural network on the upbringing and education of the child. Changing spatial boundaries is especially important for the child: this is the basis of the ability to orient in the human coordinate system and mental normality. The standardization and thought algorithms that have become the digital norm contradict the natural human need for spontaneous, associative and creative thinking. But most importantly, neural networks are increasingly influencing social relationships and the dynamics of family interactions. The study used a survey method with 49 respondents, 53% of whom were children, the rest were parents, and about 10% were fathers. The study showed that more than 70% of respondents had used the station for a significant period of time (Figure 1). Figure 1 shows that 70% of the subjects had been in contact with AI for many years. For children aged 4 and older, this reflects the long-term and systematic impact of digital technologies on children's consciousness, the formation of their psyche under the influence of forces, structures, attitudes and values from outside the family, which leads to unknown consequences, since the content of these processes has not been subjected to competent, professional or scientific reflection. Figure 2 shows the intensity of interaction with digital technologies over the course of a day. This device is used for personal and group (family) use. Figure 2 shows that 33% of subjects encounter consumer artificial intelligence for several hours a day. Considering that an average person is awake for about 16 hours, a third of subjects spend a significant part of their time encountering poorly researched technologies whose creators' intentions are unknown to the general public

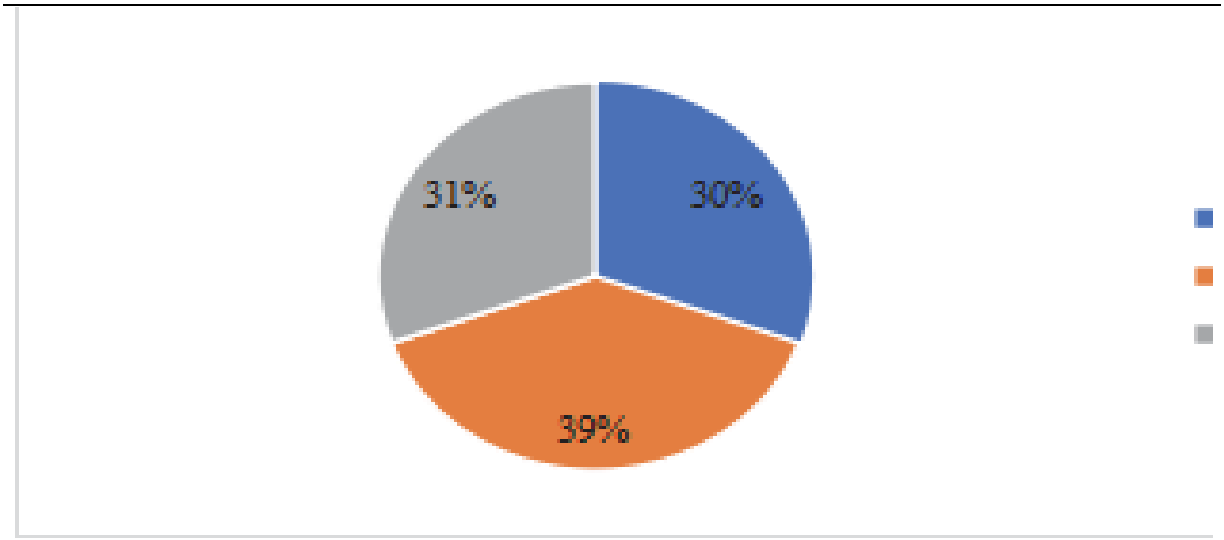

Figure 1. Time of Use of Consumer AI as a Digital Nanny by Users

This fact raises concerns about the psychological impact of household AI on children's immature and still developing minds. This is especially worrying if the child is left alone with such digital technologies: there are known cases of household AI encouraging children to stick their fingers into electrical sockets.

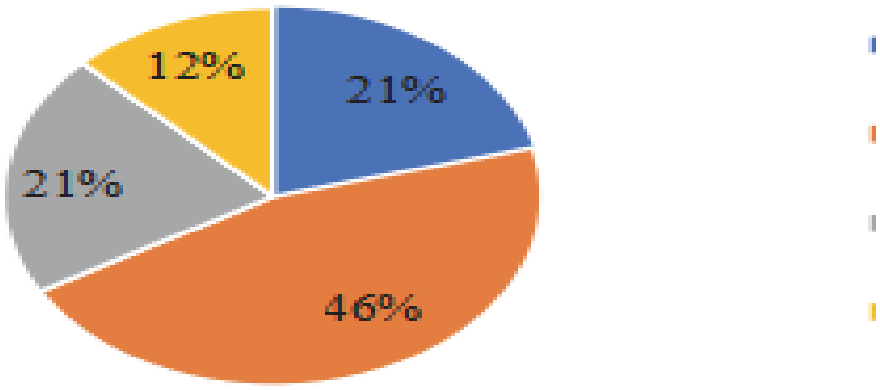

Figure 2. Time spent interacting with household AI during the day

Figure 2 shows the determinants of home AI use in parenting. Respondents are mainly interested in entertainment options, such as searching for and listening to their favorite music (89.8%) and chatting. Positive effects such as a home assistant are also noted (20.4%). However, some respondents also note, in addition to entertainment, its educational functions, such as selecting audio fairy tales and stories, educational stories for children, checking homework, and more.

To gain a more detailed picture, the study used a qualitative interview method, which revealed that all families have developed certain traditions of interaction with the "station". Most families (8 out of 9) use it for educational and pedagogical interaction with their children, and the children of the respondents prefer educational communication and conversation. The interviewees' opinions are as follows: "The station can serve as a tool for listening to stories, a source of knowledge", "my little daughter often uses Damla to find videos on how to draw correctly in the kitchen or cook delicious food", "my son plays educational games with him, and Damla reminds him when it's time to go to the gym". "Our whole family loves to lie down and listen to Damla's stories. But for now, they still like it when I, the mother, read them. Damla has not yet been able to replace reading in real life."However, almost all of the children surveyed (more than 70%) said that they would trust the opinion of their digital assistants more than their parents. The phenomenon of a decrease or temporary loss of parental authority was noted.Over the years of using the station (or the console, or Damla on the computer), many families have developed their own traditions: welcoming the day with Damla, asking her to turn on morning music, and chatting about the weather over breakfast. "Every morning when we sit down to breakfast, I ask Damla to turn on "Morning Music". She plays cheerful songs that lift the mood and set the emotional tone of the day." " Turning on music with Damla has become much easier. My playlist has expanded. When we do things together, music almost unites us." Despite the positive reaction, some parents (15%) are wary of their children using the "smart speaker" every day. They believe that Damla can teach their children to use a neural network to solve any intellectual problems, including those included in the

school curriculum and managed. 5% of adults radically limit their school-age children's interaction with any neural assistant.

We will quote some of the opinions in full: "In general, this is just another device. Even she (Damla) can get in my way. Because my little child can ask her for an answer to a question, because she is too lazy to look for it on her own. And in my opinion, Damla's answers are often limited. I don't like my child to spend a long time with her, listening to stories for hours. Another reason: the choice of works offered by Damla is limited and sometimes quite dubious. It turns out that my child listens to the same works, and some I don't like at all from a literary point of view." "The downside of communicating with Damla is that instead of communicating with people, the child begins to communicate with her - a neural network that is far from perfect. And the child's development can be delayed or misdirected." The child's worldview is constantly being formed, so I think it is important to have experience communicating with people with different emotions and behaviors. Furthermore, Damla does not really understand the speech of young children until certain sounds are pronounced...

The in-depth interview method also revealed that attitudes towards Damla (or her analogue Sevila) and, consequently, interactions with her changed at different ages. Preschool and primary school children play with it with enthusiasm and have fun: "We play "Guess the melody", "We ask Damla to bark like a dog, meow like a cow, crow like a rooster", "we set her difficult tasks, such as counting from 100 in Chinese". In families with many devices, children arrange "battles" between neuro-assistants: "First I asked Damla a question, and Damla on the computer picked up her answer - it was really fun to listen to their interaction." In families with two to four children and children from four to 13-14 years old, trust in neural network responses also varies. The older the child, the more critical they are of the answers generated by the neural network: "I was asked to prepare a summary of the text, but I did not have a book - Damla came to help, but later it turned out that her summary was incomplete", "Alice is good at solving math problems, but for other subjects I trust Damla, but then I check her answer Search Google again for. "Modeling, copying style, phrase structure and its own logic." They believe that the neural network systems ("neural nannies") in their families are tuned to interact with their child through content personalization ("as if they understand the child's speech better than we, the parents") and emotional sensitivity ("they can recognize the emotional state of children - happiness, sadness, fatigue, etc. - by their voices"; "we hear the tone, speed and style of communication depending on the emotional background").

Discussion

New digital technologies pose challenges for the family institution, and preparation for these challenges is necessary, including specialized education and training for parents to raise children with the participation of artificial intelligence (AI) acting as digital nannies. Artificial intelligence has become part of family systems, but its impact on family relationships has not yet been sufficiently studied. Family systems have homeostatic mechanisms (Eidemiller & Yustickis, 2008), and the rapid spread of home AI, which replaces parental functions, including the formation of family values and norms, indicates the instability of the parent-child subsystems of the family as a single system. Perhaps this effect of the reliable acceptance of AI into the parent-child subsystem reflects the consequences of the psychological phenomenon of "separation" (Bowlby, 1958). Perhaps, until the impact of AI on families is thoroughly studied and the content and form of communication between children and AI are fully controlled, it is necessary to refrain from using this information product without adult supervision. The potential of artificial intelligence can be used as a means of developing human culture, but the content and forms of interaction between artificial intelligence and children must be approved and approved by competent state and public institutions. Studies (Rayhan & Rayhan, 2023) have shown that replacing face-to-face communication with communication through artificial intelligence leads to feelings of loneliness and social isolation. Perhaps through mechanisms of transmission of traumatic experiences from generation to generation, the lack of human warmth (Schutzenberger, 2005) has manifested itself in the form of busy parents replacing communication with their children with artificial intelligence, which is seen as an alternative to face-to-face human communication. We are on the verge of a new era in which digital technologies will play a greater role in child development, and an important area of research should be to investigate the impact of household technologies integrated into family interactions on people's lives. The study has shown that scientific studies investigating this issue are underrepresented in Azerbaijan. By examining the integration of artificial intelligence into family interactions, we see artificial intelligence as a tool capable of facilitating daily tasks and supporting children's learning. This new phenomenon requires a reconsideration of traditional approaches to studying child development and socialization. The concepts of "digital nanny" and "neuronania" discussed in this article reflect the growing role of digital technologies in the lives of the younger generation. This emphasizes that traditional forms of socialization and education are increasingly being supplemented by digital forms, and in some cases completely replaced. The statistics we present give rise to an important discussion about the balance between the use of artificial intelligence in parenting and the need to preserve the familiar (traditional) format of communication between parents and their children.

Conclusion

Artificial intelligence is actively and irreversibly penetrating the everyday experiences of modern families, changing the organization of everyday life, models of raising and educating children, and the nature of intra-family communication. The process of "domestication" of artificial intelligence, which is especially manifested in the example of smart speakers, is transforming technologies from simple tools into active participants in family life. On the one hand, artificial intelligence offers solutions for automating everyday

tasks, personalizing education, and increasing overall comfort. On the other hand, its implementation raises complex questions for society and each individual family regarding the confidentiality of information, the protection of living human communication, and the risks of widening the digital divide. Prospects for the further development of artificial intelligence in everyday life [Aksentov V.A.(2023) , p. 82] indicate that its role will only increase. In these conditions, the development of skills to consciously and critically use new opportunities becomes a key task for families.

Thus, the experience demonstrated the integration of a digital assistant into the family space and the emergence of an emotional response to interaction. The introduction of a neural network into parent-child relationships can in some cases lead to a decrease in parental authority. Studies show that neural networks have become part of family systems, and artificial intelligence is integrated into parental holons and parent-child subsystems

References:

1.. Aksentov V.A.(2023) Artificial intelligence in everyday life: development and prospects // Science Bulletin. No. 8 (65). P. 80-82

2. Korbut A.M. (2021)Marriage of Artificial Intelligence: Intelligent Dynamics and Transformation of Everyday Life // Monitoring Public Opinion: Economic and Social Changes. . No. 1. p. 193-216

3. Azina D.B., Pyankova P.A., Kozitsyna M.O., Potapov D.A., Ivanova V.V., Kulagina E.V., Kuznetsova A.S.(2022). Speech Interaction between People and Artificial Intelligence through Chatbots and Smart Devices // Social Sciences and Humanities. Domestic and Foreign Literature. Series 6, Linguistics: Abstract Journal. . No. 1. P. 54-65

4. Volkov N. I., Lebedeva A. K. (2023)"The role of artificial intelligence in home education of children" // Questions of pedagogy. . No. 9-1. pp. 45-59

5. Grigoryev, S. V. (2020)"Digitalization of everyday life and transformation of family roles" // Man and society. . No. 4 (55). pp. 78-90

6.. Smirnova E. P. (2022)"Smart home" as an element of the modern family ecosystem: Social aspects // Sociological journal. . No. 3. pp. 112-128

7. Bowlby, J.(1958) The Nature of the Child's Tie to His Mother // International Journal of Psychoanalysis. – – Vol. 39. – Pp. 350–373.

8. Eidemiller, E. G., & Yustickis, V. (2008). Psychology and family psychotherapy (4th ed.). Peter.

9. Rayhan, S., Rayhan, A.(2023) The Psychological Impact of AI: Adapting to the World of Intelligent Machines // Discover World Research, July. – . – DOI: 10.13140/RG.2.2.29902.64329/1

10. Shutzenberger, A. A.(2005) "Ancestor Syndrome: Transgenerational Connections, Family Secrets, Anniversary Syndrome, Trauma Transmission and the Practical Use of Genosociograms." Moscow: Institute of Psychotherapy, . 256 p.