ISSN:2630-6212
SOCIAL SCIENCE DEVELOPMENT JOURNAL
SSDjournal
Open Access Refereed E-Journal & Refereed & Indexed
http://www.ssdjournal.org / journalssd@gmail.com
Article Arrival Date: 20.04.2025 Published Date: 15.05.2025
Doi Number : 10.5281/zenodo.15401150
Araştırma Makalesi / Research Article
Vol 10 / Issue 50 / pp: 1-11

TIME OF MACHINES THAT CAN COMMUNICATE: THE AGE OF ARTIFICIAL INTELLIGENCE

İLETİŞİM KURABİLEN MAKİNELER ZAMANI: YAPAY ZEKÂ ÇAĞI

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Abstract
It is frequently discussed that the machines people produce behave like humans and replace humans. The first tools and machines that could do simple tasks made people's lives easier, met their needs and contributed to the development of civilization. Civilization, which ensures that all human needs are met, has progressed with the development of tools and machines. When people first encountered mechanical tools, they most likely did not think that one day machines would be able to talk. However, approximately 4500 years after the construction of the first mechanical devices, machines that could act like humans, make decisions and talk began to play a major role in people's lives. While the abilities of machines that look like humans and can do the work of humans both surprise and please people, the suspicion that one day machines that can think and decide will be able to dominate people has also come with it. Artificial intelligence, which emerged in the last stage of the Industrial Revolution process called Industry1 and in the Industry4 period, has been discussed a lot both technically and ethically, and has caused various doubts and fears.
Keywords: Communication, Artificial Intelligence, Machine, Technology.

Özet
İnsanların kendi ürettikleri makinelerin insan gibi davranması ve insanın yerini alması sıkça tartışılmaktadır. Basit işleri yapabilen ilk aletler ve makineler insanların yaşamını kolaylaştırmış, ihtiyaçlarını karşılamış, uygarlığın gelişimine katkıda bulunmuştur. İnsanın tüm ihtiyaçlarının karşılanmasını sağlayan uygarlık, alet ve makinelerin gelişimiyle yol almıştır. İnsanlar ilk mekanik aletlerle tanışırken, büyük olasılıkla bir gün makinelerin konuşabileceğini düşünmemişlerdir. Ancak İlk mekanik aletlerin yapımından yaklaşık 4500 yıl sonra insan gibi davranabilen, karar verebilen, konuşabilen makineler insanların yaşamında büyük roller oynamaya başlamıştır. İnsana benzeyen ve insanın yaptığı işleri yapabilen makinelerin yetenekleri insanları hem şaşırtıp hem de memnun ederken, bir gün düşünüp karar verebilen makinelerin insanları egemenliği altına alabileceği kuşkusu da beraberinde gelmiştir. Endüstri1 diye adlandırılan Sanayi Devrimi sürecinin son aşamasında, Endüstri4 döneminde ortaya çıkan yapay zekâ, gerek teknik gerekse etik açıdan çok tartışılmış, türlü kuşkulara ve korkulara yol açmıştır.
Anahtar sözcükler: İletişim, Yapay Zekâ, Makine, Teknoloji.

Social Science Development Journal 2025 May Volume: 10 Issue: 50 pp: 1-11
Doi Number : 10.5281/zenodo.15401150

1. INTRODUCTION: THE TRANSITION PROCESS FROM NATURAL TO ARTIFICIAL

Developed by Paul Schlack, a German chemist working at IG Farben before World War II, nylon was first used in military industries, then became the cornerstone of many industries after the war. Nylon, which has many properties such as high tensile strength, hardness and creep resistance, high impact resistance, good temperature resistance, good friction and wear properties, and elasticity, has been used in almost every area of life due to its high resistance to abrasion and chemicals such as solvents, oils, greases and fuels, acids and alkalis (Sewidan, 2020: 1). Nylon's durability and easy usability have resulted in its rapid spread to all areas of life.

Polymer materials have become irreplaceable in modern life. Synthetic and natural polymers are effective in various applications from medical devices to food packaging. Despite all its risks, nylon, which has affected all life due to its practical use, has also changed lifestyles. In the process of the spread of nylon, human relations, emotions, thoughts and approaches also became artificial, and in a way, the irony of "laylon lives" emerged (Didovets and Brela, 2022: 343). From cups to chairs, from bills to diplomas, forgery and artificiality, which are widespread, have begun to be referred to as “nylon”, and traditional principles have gradually changed shape within the nylon approach.

The world is now discussing the issue of Artificial Life Discipline (ALIFE). Artificial life is a simple life form based on the abandonment of traditional natural life and more consumption and easy living (Fellermann et al., 2019: 2). The engineering of intelligent machine applications that seem to make people's lives easier includes gaming, translation, expert systems and robo-intelligence, and this is a science and engineering that is not only about modeling human behavior, but also about making life easier and better (Kasinidou et al., 2024). The appeal of artificial life, especially for new generations, has caused traditional natural values and traditions to be left behind completely.

Artificiality has become the main subject of all engineering fields over time, and the production of artificial versions of every life element, including genetics, has begun. Genome-based engineering of cells, protocell research, engineering of metabolic pathways and “DNA device design” based on the principle of modularity, standardization and precise prediction models using concepts taken from computer science have all been in question. The ultimate goal of all these efforts has been defined as the creation of the “minimal organism” (Budisa and Hümpel, 2016: 434). While the focus used to be on mechanical models of robots, today biological processes and computer models have also become the focus. Biological approaches to creating artificial life are directed in two different directions: While synthetic biology (synbio) is used to design life on the drawing board to restructure cells or organisms, approaches such as gene editing (gene scissors; CRISPR/) cover existing organisms to which new features will be applied. The aim in both approaches is to design or transform life forms in a targeted manner (Regalado and Sauter, 2022: 3). Genetic change also occurs along with synthetic change.

Artificial means imitating the properties of a natural object. This approach, called synthetic in natural sciences, has gained importance especially with the emergence of computer-based mathematical tools (Bisig, 2012: 44). Artificial attracts more attention and is adopted because it is designed to be more practical and attractive than natural. With the replacement of long-standing assets and values in human life with artificial ones, a new physical and cultural life has begun all over the world. The most popular tool of this process is artificial intelligence. Artificial intelligence is widely defined as "the ability of a system to correctly interpret external data, learn from this data, and use this learning to achieve specific goals and tasks through flexible adaptation" (Haenlein and Kaplan, 2019: 7). Artificial intelligence is effectively used in all areas of the business world, especially in health, and other vital areas.

While software that can chat with people and make declarations of love by making people feel that they reciprocate their love, changes the form and content of communication, media that uses extraordinary software can create productions that can make people die of astonishment. Media supported by artificial intelligence broadcasts that can not only surprise people but also radically change their beliefs, values and perceptions (Barthelmeß and Furbach, 2019: 117). Although there are concerns and hesitations about the future of artificial intelligence, the spread and use of artificial intelligence is increasing. Artificial intelligence defines the ability of machines to perform tasks autonomously based on algorithms. This ability can be based on programmed processes or can be created by machine learning (ML). With ML methods, an algorithm can learn to complete a task independently through repetition (Schneider et al., 2023: 304). It is natural for a technology that can repeat and imitate human behavior and thinking processes to do incomprehensible things and cause anxiety.

In the history of European philosophy (for example, by Aristotle, Hume or Mill), it has often been noted and pointed out that the seemingly harmless concept of 'nature' is difficult and uncertain (Bayertz, 2017: 10). Human intelligence has shaped the world in profound ways, leading to innovations in science, technology, art and government, while artificial intelligence has revolutionized industries such as health, finance, transportation and entertainment, providing unprecedented capabilities in data analysis, automation and decision-making (Sfetcu, 2024: 12). Thus, the stages of Transhumanism and Posthumanism have been passed (Loh, 2020). At each stage, human intelligence has moved further and established a more artificial world. According to the Darwinian principle of diversity and natural selection, humans, one of the thousands of species that emerged in the process of evolution, are a part of nature. However, there is a feature that distinguishes them from all systems in nature: they have the ability to create things that are no longer part of nature. They have moved away from the natural and preferred artificial life. Artificial life is a part of the natural life process, constructed by living objects, and its features emerge as a result of external assumptions, not internal limitations (Gecow, 2008: 199). Over time, the human mind has become an expert in producing the artificial.

"The Australian performance artist Stelarc has been interested in the relationship between humans and machines throughout his career, initially exploring psychological and physical extremes and pushing the boundaries of his body in several performances, and has continued to explore new ways in which contemporary technology can engage with his body. In this way, he has connected to his body through interfaces or used them to alter his physical state; he has presented himself as a pioneer of a human being who has left behind the shackles of the natural body and is on the path to becoming posthuman. This is technologically transformed rebirth (Vollert, 2012: 13). The extent to which Stelarc's concept of the body addresses the dichotomy of naturalness and artificiality, and how he alienates his biological body in his performances into a "highly artificial but living sculpture", has also been much discussed. Living organisms have long been a source of inspiration for people to construct works that mimic their behavior. The models usually used are quite simple compared to their natural sources of inspiration. However, in computers, there are both realistic and non-speculative approaches from a biological perspective.

However, in computers, both realistic and non-speculative approaches are also possible from a biological point of view. On the one hand, there are models used as tools in engineering, especially for optimization, and on the other hand, there are environments and models that exhibit properties similar to those observed in bio-organisms, which are useful for studying and developing biological theories (Correia, 2010: 794). Biologically inspired tools such as artificial neural networks, evolutionary algorithms, artificial immune systems, swarm-based algorithms, and computer-based models such as artificial life environments and autonomous robots, artificial beings, synthetic biology, have triggered an intense debate in a very short time about whether living organisms can be produced artificially and therefore whether life has lost its special status compared to

technological products (Lüke, 2016: 152). While the debates continue on the one hand, synthetic production has continued on the other.

Contemporary artificial life (also known as "ALife") is an interdisciplinary study of life and life-like processes. Its two most important features are that it focuses on the fundamental rather than the random properties of living systems, and that it attempts to understand living systems by artificially synthesizing their extremely simple forms. These two features are interconnected. By synthesizing simple systems that appear very much alive but are very foreign, artificial life constructively explores the limits of what is possible for life (Bedau, 2003: 509). For over 40 years it has been possible to specifically manipulate the DNA of living organisms. Biotechnology has progressed rapidly and has changed constantly. In the 1980s people spoke of "genetic engineering", then of "genomics" at the time of the sequencing of the human genome, and among other things of "systems biology" (Allgöwer et al., 2005: 37). Initially, synthetic biology was concerned with treating (micro)organisms such as bacteria as small computers with replaceable parts, and genes as electronic components, and it has developed over time.

"The philosopher Picht says that "nature permeates and surrounds everything we can think of, and our thinking seems to have no beginning or end." He claims that nature is not limited to our environment, but that man himself is also a part of it. From this it can be concluded that everything that humans can produce automatically comes from nature. In other words, any kind of technology will be something natural. In contrast, what is considered "nature" today is almost always claimed to be unnatural: gardens, wheat fields, pastures where cows graze, and even wildlife parks are human-made creatures (Eberle and Roscher, 2019: 41). The real problem is that the human mind is capable of producing an artificial version of every natural element in life. The concept of "naturalness" often plays an important role in the public debate about chemical substances in the environment (and in food). This concept is mainly known in everyday life from supermarkets. More than every third newly approved food product in Europe already contains this or a similar, so-called "naturalness claim" in marketing terms, and This trend is increasing (Schnurr, 2012: 100).

"Evolution only makes sense in the context of entire populations; it is not defined for individuals. The field of artificial evolution began in the 1960s with the developments of Ingo Rechenberg in Germany and John Holland and L.J. Fogel in the United States. Holland's type of evolutionary algorithms were called genetic algorithms or GAs, Fogel's evolutionary programming or EP, and Rechenberg's evolutionary strategies or ESs. While Holland was interested in adaptation in natural systems, Fogel and Rechenberg were more interested in using evolutionary algorithms for optimization. They all shared a strong belief in the power of evolution" (Pfeifer et al., 2001: 81). The final major point of the transition from natural to artificial was with artificial intelligence, which eventually led to the emergence of devices that thought and made decisions instead of humans.

2. TECHNOLOGICAL DEVELOPMENT AND THE AGE OF ARTIFICIAL INTELLIGENCE

Since the moment humans have existed, they have wondered, thought, researched, developed and improved. Especially since the second half of the 19th century, technology has developed rapidly and giant strides have spread to large parts of the world (Klemm, 1998: 163). Technology studies, which started with mathematical calculations and research for the design of irrigation schemes or pyramids, have continued without a break. Although technology is as old as human history, it has occurred in daily life after construction; the development of science and technology accelerated with the Industrial Revolution in Europe in the 18th and 19th centuries (Raghaviah and India, 2012: 19). Each new invention has formed the basis of a new technique.

In later times, technology has progressed as a companion to science and has developed on solid foundations. New generations have grown up with science and technology and have worked for new techniques (Bösl, 2022: 88).

Each period in history is unique in its own right, and techniques developed throughout history have contributed significantly to the development of disciplines. Ancient people have researched stone working techniques, and the Romans have adapted effective load-bearing and covering structures that can be used in different climatic conditions (Karimov et al., 2024: 47). As we approach modern times, inventions and techniques have also increased, and the world has changed completely.

The word "technology" has been used to describe applied science, or at best, technoscientific hybrids, which have sustained the economic growth of the West since the eighteenth century. Since the beginning of the twentieth century, French-speaking scientists have defined techniques as the result of psychologically, socially and environmentally meaningful activities (Camolezi and Hilaire-Pérez, 2024: 51). The competitive world of the twentieth century has also stimulated technical studies, and the whole world, especially Europe, has been introduced to techniques it has never seen before. In particular, construction, transportation and communication techniques have advanced with great strides (Popplow, 2007: 212). A media technology has developed that is widespread and dominant throughout the world until the hypermodern age.

The problems of finding a social form for technological innovations have been known since the Industrial Revolution. However, today's grand narrative focuses on the fact that digitalization has reached a new quality and will significantly change the world of paid work. The convergence between Big Data and robotization has heralded a new economy and therefore a new world of work (Timpf, 2017: 5). The history of theory and method in history came full circle at the beginning of the twentieth century, however, the pendulum had already swung back, giving rise to broader approaches to history that integrated the literary and practical dimensions of history while maintaining the cognitive claims of the discipline based on both research and composition (Lorenz, 2001: 6875). As technology inspired the past and developed new techniques, the future also shed light on the past.

The processes that were previously done manually have changed form thanks to the development of microscopic technology and scientific research, as well as preparation and detailed botanical research. Cutting engines and preservation media have been developed, botany and zoology have spread to a wider area with the foreign materials obtained by Weiternnte (Lang, 2013: 425). Innovations in the fields of biology, botany, medicine, engineering, agriculture and physics developed by science have enabled the technique to advance with great steps.

When bibliographic examination is made, it is proven that the biggest technological leap occurred in the third industrial revolution, because during this period, a large part of the technologies and energies used in industry 4.0 were discovered, only a part of the acquired knowledge, but showed great potential with the advent of artificial intelligence and automatic robots, which created a reduction in the times produced for leaps from industrial revolution to revolution as a result of the large amount of technology used. It is also confirmed that technology has always been a fundamental part of industrial development and is subject to human aspirations and tendencies to improve the quality of processes and the imitation of people for optimization in the mass production of products (Tillerias et al., 2020: 19). Each scientific and technical invention forms the basis of the next, while techniques are added to each other and the world has transformed into a new form.

The rapid increase in the computing power of computers; economy, research and last but not least, communication through social media, generates large amounts of digital data. Intelligence is based on sensory perception, especially visual perception. Many experts in this field believe that 80 percent of what a person learns every day comes from his eyes. Here, certain patterns are created that determine thoughts. New perceptions are constantly trying to interact with these patterns, complete or reorganize what is stored (Dengel et al., 2019: 15). While human nature has the potential and power to do these things, the same intelligence has designed machines that think and act in its place.

Artificial intelligence is one of the most important and significant technological innovations that has reshaped all aspects of human life, starting from the big ones such as shopping, data collection, driving, daily life, medical approach and many more. Artificial intelligence is now widely used in services from back office tasks to front line interactions with customers (Bolton et al., 2018: 53). Bias, credibility and transparency are important issues in the hypermodern age, intelligent systems generally represent more objectivity and impartiality in implementation and decision making (Bitkom e. V., 2017: 161). In the hypermodern age, where traditional tools and values are left behind, tools that make decisions instead of people have begun to dominate life.

"Since their birth, people have been trying to replace the operation of a part of the human brain with machines according to the level of contemporary knowledge and technical conditions. After a long period of development of science and technology, some groundbreaking studies have been carried out in the field of artificial intelligence until the 20th century. A historical conference held at Dartmouth College in the United States in 1956 was accepted as a sign of the birth of artificial intelligence science. During the conference, McCarthy officially introduced the concept of artificial intelligence, which includes mathematics, computers, neurophysiology, psychology and other disciplines. From that point on, artificial intelligence technology began to develop as an officially emerging discipline" (Cao, 2017: 701). Artificial intelligence has always been at the forefront of computer science, and its theories and results are approaching the level that can largely control science and technology and determine the direction of computer technology development.

Artificial intelligence is the ability of a machine to imitate human abilities such as logical thinking, learning, planning and creativity. Artificial intelligence enables technical systems to perceive their environment, deal with what they perceive and solve problems in order to achieve a certain goal. Artificial intelligence systems can adapt their actions by analyzing the results of previous actions and working autonomously (Artikel, 2023: 5). In a robotic world, robots do many of the jobs of people and seem to make life easier. Humans, who are always on the side of ease by nature, prefer a life dominated by intelligent machines (Braun et al., 2018: 22). Humans, who have reached the digital age from the black plow, live in an age where the highest technology dominates life.

The central developments and technical foundations of artificial intelligence, the idea of machines whose abilities in certain fundamental domains, such as recognition, learning, or locomotion, are similar to or even surpass human abilities, can be traced back thousands of years before the invention of software systems to Greek mythology. The existence of machine intelligence first became accessible with the construction of the first computers in the 20th century. In 1950, mathematician Alan Turing formulated a criterion for artificial intelligence, later known as the Turing test, according to which a machine would have machine intelligence if its behavior appeared indistinguishable from that of a human to human observers. Early research on artificial intelligence assumed that human learning or intelligence could be described in such detail that a machine could be built to simulate it. From the very beginning, specific AI research topics that still play a role today include pattern recognition, language processing, abstraction ability, creativity, and flexible problem solving (Deutscher Ethikrat, 2023: 12). The actions that humans have been doing with their minds for hundreds of thousands of years are now done by machines.

Social networks, robotics and artificial intelligence are seen as human culture techniques that have become cultural environmental factors of human social behavior. High technology has created a new cultural life in the world with tools that think and act like humans (Funk et al., 2020: 37). Just as the typewriter was replaced by the computer, artificial intelligence is also expected to replace many human actions.

Social Science Development Journal 2025 May Volume: 10 Issue: 50 pp: 1-11
Doi Number : 10.5281/zenodo.15401150

3. HUMANOID MACHINES

Researchers have tried to better imitate human intelligence using humanoid robotics, scientists, developmental psychologists and linguists have found strong connections between the human body and human cognition, and by being embodied in a similar way to humans and placed in human environments, humanoid robots have been able to use similar mechanisms for artificial intelligence (AI). Researchers have also tried to find methods that will enable robots to develop autonomously in a way similar to human babies, and have used humanoid robots that can physically explore the world in a similar way to humans (Kemp et al., 2008: 1323). Robotization is the process by which machines perform tasks that would normally be done by humans. These machines can be mechanical or software-based applications and can sometimes refer to automation (Bahishti, 2017: 62). As humanoid machines become more intelligent, it becomes more important that their goals and decisions are closely aligned with human values. A humanoid robot usually refers to a robot whose shape is close to humans. Its definition varies according to researchers and ranges from a dual-armed upper-body robot to a bipedal walker (Yoshida, 2021: 13). Over time, robots have evolved and become more human-like with each passing stage, and their flexibility has increased. has been addressed through non-feedback control designs (Luca and Book, 2008: 393). Although robots replacing humans sometimes cause concerns, the irresistible appeal and ease of humanoid machines bring people closer to machines (Westermann, 2012: 148). Robots are developed further at each stage, new joints and functions are added, and they become almost human.

The robot has a unique articulation ability at the level of Cheville and, in addition, it is the machine that implements the conditions of the route and reduces the maximum possible speed, implementing a "total" extension of a real human distance during a walk. Another new product is the use of linear and rotary motors for the locomotion system, depending on the placement. Plus, if the hand moves for "classic" rotary motors, it is the same as Cheville not moving with the help of a linear system. The system is based on a unidirectional principle and is a mechanism that rotates with a motor to make a visual translation effective (Langard, 2023: 122). Humanoid robots are distinguished by their physical similarity to humans and their unique combination of three characteristics: movement, dexterity and intelligence. Movement or gross motor skills allow them to move in human-oriented environments, such as navigating steps and uneven surfaces and avoiding obstacles. increasingly using machine learning techniques to learn from their interactions, which puts the sector on a path of potentially exponential growth in capabilities.

These robots use “embodied artificial intelligence”, which allows AI software to be integrated into physical hardware (such as robots) and allows them to perceive, learn, and interact with the physical environment (USCC, 2024: 4). AI is getting closer to human behavior at every stage. At the Heinz Nixdorf Museum Forum (HNF) in Paderborn, the world’s largest computer museum, people can come face to face with and communicate with humanoid robots within the scope of an exhibition. This technique is best applied methodologically with ethnomethodological conversation analysis (CA), which reconstructs the chain of meaningful communication events using sequence analysis (Bock and Mayer, 2020: 160). Human robots are now gradually developing learning and decision-making and can act on behalf of humans (Cheng et al., 2024). Artificial intelligence, which can be called the most advanced of humanoid machines, is the ability of a machine to use human skills such as logical thinking, learning and planning, and enables technical systems to perceive their environment by imitating creativity. In this way, it tries to deal with perceptions and solve problems in order to achieve a certain goal (Schmid-Meier, 2023: 32). Machines become more and more human-like at every stage.

The development of technology and digitalization have been changing the tasks of corporate communication for years before the introduction of artificial intelligence; communication has become more mobile and short-cycled, communication actions have become easier and more multidimensional due to both fragmented differentiation and network structures and globalization (Banholzer, 2020: 42).

With the role played by artificial intelligence in communication, problems are also solved and problem-free communication processes are experienced. Artificial intelligence, which plans communication processes, calculates the framework of communication, its success, approaches, and the behavior of users, and ensures that the highest efficiency is obtained.

4. CONCLUSION

In the development process of technology, many tools have been developed that make human life easier and meet basic needs, and each technology has formed the basis of a new technology. Starting from the Industry 1 process, more comprehensive technologies have helped humans at every stage, and over time, the production of machines similar to humans has been achieved. Android phones, which became widespread in the 20th century and are based on computer and digital technology, have been equipped with features similar to human characteristics, and then robots that can work like humans have been produced.

Artificial intelligence continues its actions that started with recognizing humans with other human actions, while facilitating communication actions on the one hand, and progressing towards participating in communication actions on the other. It is believed that artificial intelligence, which has reached the decision-making stage like humans, will realize human-like thinking and speaking functions as it develops. Despite the many who claim that no machine can be exactly like a human, developments in technology indicate that machines that can communicate like humans will also be developed and produced.

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