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Research article

Artificial Intelligence as an Old Technology

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Abstract

Artificial intelligence is usually considered one of the newest technical ideas based on the progress of digital technologies. However, the dream of creating artificial intelligence is one of the oldest. In the mainstream of this imaginary biological, mechanical and mimetic approaches have emerged. The biotechnical approach (e.g. homunculus) implies the launch of certain natural processes that contribute to the creation of the most intellectually advanced creatures. Mechanical technologies (e.g. the automaton) contribute to the creation of limited intelligence, but are practically feasible to the greatest extent. Although by and large all artificial intelligence technologies have an imitative component, the mimetic approach implies that similarity is sufficient. Mimetic technologies of artificial intelligence (e.g. statue, golem) include a human in a kind of game with imitations which can take the form of the sculptures of Daedalus or modern game avatars and virtual assistants. The “creation technologies” and “applications” of artificial intelligence described in legends, stories, philosophical, and technical treatises allow us to see that its creation is, first of all, a challenge, a task of the greatest complexity, the resolution of which itself serves as a reward. Modern artificial intelligence, inheriting all three approaches to creation, continues to be discussed in line with classical myths and dichotomies, primarily as the embodiment of the imitation technology of creation. Humanity is equally dissatisfied with the fact that a machine can have equal or greater intellectual abilities than a person, and with the assumption that humanity is not capable of creating such a machine.

Keywords: Artificial Intelligence; AI; Mimetic technology; Imaginary; Technology

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Научная статья

Искусственный интеллект как старая технология

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Аннотация

Искусственный интеллект обычно рассматривается как одна из новейших технических идей, основанная на прогрессе цифровых технологий. Однако мечта о создании искусственного интеллекта – является одной из старейших, в ее русле в воображаемом наметились биологический, механический и миметический подходы. Биотехнический подход (гомункулы) подразумевал запуск неких природных процессов, способствующих созданию наиболее интеллектуально продвинутых существ, механический (автоматоны) – способствовал созданию ограниченной интеллектуальности, однако в наибольшей степени был практически реализуем. Хотя все технологии искусственного интеллекта по большому счету имеют имитационную составляющую, однако миметический подход подразумевает, что подобия достаточно. Миметические технологии искусственной интеллектуальности (статуи, големы) включают человека в некую игру с оживающими образами от скульптур Дедала до современных игровых аватаров и виртуальных помощников. Описываемые в легендах, историях, философских и технических трактатах “технологии создания” и “применение” искусственного интеллекта позволяют увидеть, что его создание – это прежде всего испытание, задача величайшей сложности, само разрешение которой служит наградой. Современный искусственный интеллект, наследуя все три подхода к созданию, продолжает обсуждаться в русле классических мифов и дихотомий, прежде всего как воплощение имитационной технологии создания. Человечество равно быть недовольным тем, что машина может обладать равными или большими интеллектуальными способностями, чем человек, так и предположению о том, что человечество не в состоянии создать подобной машины.

Ключевые слова: Искусственный интеллект; ИИ; Миметическая технология; Воображаемое; Технология

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INTRODUCTION

Introducing the controversial and promising term “artificial intelligence” in 1956, John McCarthy and his colleagues intended to use computer programs to move to a more complex level of logical operations, clearly continuing the line of development of “logical” machines. The scientist stipulated that he did not mean copying human abilities (McCarthy, 2007), but this very stipulation indicates that he deliberately launched a procedure for comparing machines and humans that appears to be reaching its apogee in the 21st century.

AI is usually considered one of the newest technical ideas based on the progress of digital technologies. When tracing the history of the development of artificial intelligence, the development of “thinking machines” and computer technology is usually in the foreground. In a broader context of the imaginary, artificial intelligence receives a line of kinship stretching back to robots, animatons, and other mechanical crafts rooted in antiquity.

However, the idea of artificial intelligence can be considered one of the most ancient technological dreams of humankind, appearing in ancient stories and legends, philosophical reasoning, scientific treatises, and practical implementations. Therefore, modern artificial intelligence can be considered the embodiment of one of the most ancient dreams of humankind. The purpose of this study is to analyze the imaginary of artificial intelligence from ancient times.

TECHNOLOGIES OF ARTIFICIAL INTELLIGENCE

Biological technology

The biological program for creating artificial intelligence assumes the need to find a certain “trigger” – a program that would launch a process similar to the natural one. The program was initially based on the hypothesis of the origin of life from the first principles (which can be found in the works of the ancient philosophers Anaximander, Anaxagoras, Empedocles, or Democritus). The future authors of the artificial creation of intelligence also found in the works of Aristotle the basis for the origin of living beings from lifeless matter due to the formative effect of formal causation. Numerous descriptions of cases of spontaneous generation can be found in ancient sources from scientific treatises and political speeches to fiction (in Cicero, Strabo, Philo of Alexandria, in Virgil and Ovid, and later in Seneca, Pliny, Plutarch, or Apuleius). In Eastern philosophy, the problem of obtaining artificial intelligence was even simpler, since the difference between the living and the nonliving was not understood as an insurmountable gap, and all forms of existence were imagined as connected in a continuous web of being

The oldest descriptions of creatures created within the framework of the biotechnological paradigm can be found in the ancient Arabic story of Salaman and Absal. The most famous is its mention by Avicenna, but, according to William Newman (2004), there is a much earlier version of the story which dates back to the third or fourth century CE and the *Liber vaccae* [The Book of the Cow] which was for a long time



attributed to Plato. This book describes in detail the process of growing an artificial human. Based on the traditional idea of a number of ancient philosophers that the female body gives the future baby matter, with the male sperm giving it form, one needs to imagine a technology that places the sperm in another vessel (an animal, a plant, suitable soil, etc.), capable of creating suitable growing conditions. *The Book of the Cow* mentions the exceptional intellectual capabilities of the resulting creature: “if a man has raised it and nourished it until a whole year passes, and left it in milk and rainwater, it will tell him about all distant things and occurrences [*omnia absencia*]” (LaGrandeur, 2013a, p. 52).

The Persian scholar Jabir ibn Hayyan in his commentary on Pseudo-Plato's *The Book of the Cow* proposed his own technique, and also noted the diversity of “schools of artificial generation” for creating various biohybrids with features of different animals (Newman, 2004). Among the many Arabic works translated into Latin in the early 12th century, there were a significant number of those that described similar techniques. Accordingly, Western European thinkers, having become familiar with the works, continued the tradition. Updated biocreation technologies can be found in works attributed to Thomas Aquinas, Arnaldus de Villa Nova, and Alfonso Tostado de Madrigal. The most famous results of the application of biotechnology are the *homunculi* of the Renaissance, about the creation of which there are many rumors. Paracelsus (Theophrastus von Hohenheim) and Heinrich Cornelius Agrippa von Nettesheim, in line with the ideas of Pseudo-Plato and Jabir ibn Hayyan, describe *homunculi* as beings with “superpowers,” a deep knowledge of nature, and the ability to know “hidden and secret things” (Paracelsus, 1894, p. 1:124).

With many descriptions of biologically created creatures, talking heads can be especially successful in the role of precursors of modern artificial intelligence. Before the development of digital technology, it was difficult to imagine intelligence separated from the body. And, perhaps, the most suitable image is the head (as the concentration of the mind) without the body. A copper, brass, or bronze head was attributed to many scholars of the late Middle Ages. The first mention of a talking head capable of accurately answering any question can be found in William of Malmesbury's *History of the English Kings*. The head was said to be created by Gerbert of Aurillac, who became Pope Sylvester II in 999 (Truitt, 2012). Gautier de Metz's *The Image of the World*, written around 1245, describes a head created by Virgil (Truitt, 2015). Albertus Magnus was said to create a head that answered questions so skillfully that it could not be out-argued, forcing Albertus's famous student Thomas Aquinas to smash the head. However, the most famous inventor of a talking head was the Franciscan monk and philosopher Roger Bacon. The tale of his invention became part of the play *Friar Bacon and Friar Bungay* by Robert Greene, first performed around 1589 (fig. 1).

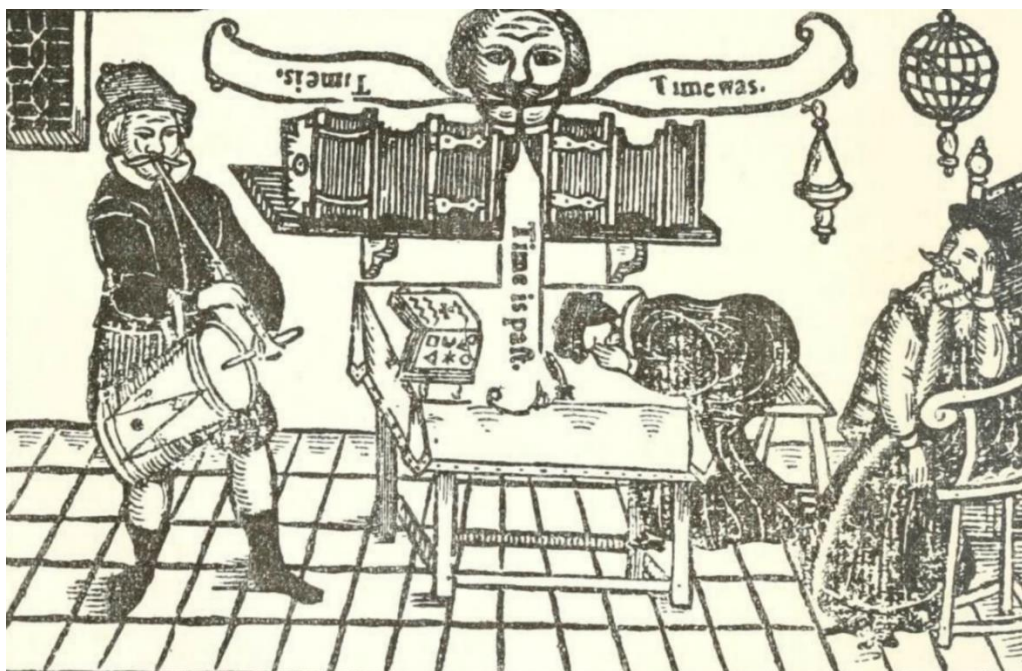


Figure 1. The talking head from Robert Greene's *The Honorable Historie of Frier Bacon, and Frier Bongay* (1630).

A similar head can be found in the description of the Polotsk Jesuit Academy in the 1882 publication *Picturesque Russia*:

For example, a colossal talking human head served as a monstrous rarity that aroused delight and trembling curiosity. High in the wall, almost under the ceiling, was set the head of an old man with long gray hair. Movable, with eyes that took on different expressions, and most importantly speaking in all the most commonly used languages, this head understandably caused bewilderment, delight and at the same time aroused fear. The Jesuit who accompanied the visitors to the museum invited them to ask the wonderful head any questions they wanted and in any language they wanted. The head immediately answered clearly, loudly, logically, with full knowledge of the circumstances and the setting of the questioner, so that he was simply horrified. (Kirkor, 1882, pp. 324–325)

Perfectly conveying the image of an artificial intelligence there is also *Homunculus* from Goethe's *Faust*, part II. Possessing unlimited knowledge, it is in a flask, manifesting its existence with a glow and voice. As such, the technology of the flask records a specific stage of the development of the *homunculus*: “after this time, it will be in some degree like a human being, but, nevertheless, transparent and without body” (Paracelsus, 1894, p. 1:124). In a mid-19th century illustration, to depict a homunculus in a flask, it has to be given a humanoid form (fig. 2).

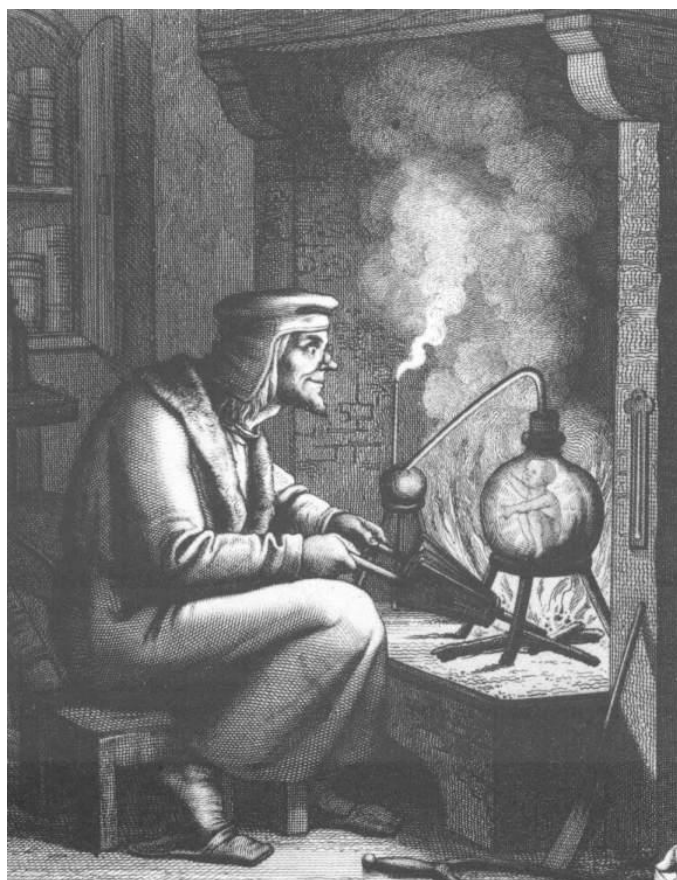


Figure 2. Engraving of Homunculus from Goethe's *Faust* (1850)

Thus, there is a tendency, in accordance with the function of answering questions, to reduce the homunculus from a humanoid creature to a single head or voice in a test tube. An alternative line of the imaginary suggests the creation of artificial creatures that correspond to humans to the greatest possible extent. In this variant, the task of such an artificial creature will be to replace a human. A similar plot can be found in folklore, when childless parents strive to have a semblance of a child. In many fairy tales, there is a theme of the appearance of a child from bioresources – for example, a part of a person's body (thus Tom Thumb developed from his mother's finger), with the help of plant material (Thumbelina appeared in a flower grown from a special seed), etc. Industrial technologies for creating homunculi, together with the motives of excluding women from the process of childbirth, are presented in the story “A Twentieth-Century Homunculus” (1930) by David H. Keller and “The Homunculus: A Magic Tale” (1965) of Sven Delblanc.

Mechanical technologies

The ancient mechanical creatures described in various texts were usually significantly inferior to biological ones in intelligence, but there were exceptions. The most ancient books of the East and Greece present a variety of technical creations that performed various functions. The military versions of intelligent mechanisms are most



vividly described. According to Lokapannatti, the *bhuta vahana yanta* (“Spirit movement machines”) guarded the tomb of Buddha with rotating swords. In Ramayana the Kumbhakarna Yantra (i.e. the machine) turned the tide of battle (Roy, 2021). Mechanical creations have played a special role in religious rituals since ancient times, representing a “technical miracle” that amazed and captivated people. Egyptian mechanical statues were able to move their arms and heads, which was interpreted as the will of the gods. During the late Ramses dynasty, around 1100 BC, a statue of the god Ammon “chose” the future pharaoh from the ruling dynasty by pointing at him with its hand (Chapuis & Droz, 1958, pp. 14–15).

The service function of mechanically intelligent beings also begins to appear in the most ancient texts: King Solomon is credited in Targum Sheni with a throne on the steps of which mechanical animals sat (de Lagarde, 1873, pp. 352–365), Homer's *Iliad* describes mechanical servants: golden maids “with their own mind, voice and strength” who obey the will of their master (Homer, 1998). Huang Yueying, the wife of a Chinese ruler, is believed to have created robot cook.

More realistic, but not at all intellectual, mechanical “people,” capable of some movements, sometimes performing simple tasks (like pouring water), are described by ancient Greek inventors and their followers. The automata of Ctesibius of Alexandria, judging by the descriptions of Vitruvius, Athenaeus, Philo of Byzantium, worked on hydraulics, steam and pneumatics. Ctesibius's student, Philo of Byzantium, also created automata, the most famous of which is the figurine of a little girl pouring water (LaGrandeur, 2013b). Heron of Alexandria describes entire performances of mechanical dolls (Alexandria, 2009). In the Middle Ages, there was an increase of the variability of functions of servants and of the mechanical analogues of animals and people. Though the control mechanisms became more complex, and the actions more sophisticated, these automata did not pretend to be intelligent (31 automata are described in the 9th century “Book of Secrets” by Ali ibn Khalaf al-Maradi, more than 50 mechanisms in the “Book of Knowledge of Ingenious Mechanical Devices” of the early 13th century by Abu al-Iz ibn Ismail ibn al-Razzaz al-Jazari). Mark Rosheim notes that inventors in the Muslim world, while maintaining the “interest in dramatic illusion” inherent to the Greeks, integrated them into everyday life, increasing the comfort of users (Rosheim, 1994, p. 9).

Medieval Europe used mechanical figures in churches, angels and other characters in biblical scenes were able to move their body parts and move (Riskin, 2017), striking the public’s imagination with a “technical miracle.” The most controversial and famous of the church “mechanical miracles” is the Holy Cross of Grace at Boxley Abbey in Kent – the figure on the cross moved its eyes, lips and other body parts (Groeneveld, 2007). At the end of the 15th century, Leonardo da Vinci designed a mechanical knight to amaze the public at the festival of Ludovico Sforza at the Milan court (Moran, 2006).

In the 18th century, automata were able to perform intellectual actions: write, draw, play instruments (the most famous were created by Pierre Jaquet-Droz and Jacques de Vaucanson). The famous writing boy could write any text of up to forty characters in calligraphic handwriting using ink. Modern researchers call such automata “the intersection of philosophy and clock- and instrument-making” (Wu, 2022, p. 14). However, the outlandish figures that delighted the public did not satisfy the flight of the



imagination, striving for intelligence superior to that of humans, which led to the construction of fake intelligent machines. The most famous and profoundly unsettling of these was Wolfgang von Kempelen's *Mechanical Turk*, which “played chess” quite convincingly. Later, other “mechanical intellectuals” appeared, seeking to impress the public, among which we can note the card player *Psycho* and the portrait-painting automaton *Zoe*, created by the illusionist John Nevil Maskelyne and the inventor John Algernon Clarke. These kinds of figures combined the mechanical and imitative approach. The dolls could really do a lot thanks to their complex construction, but they imitated much greater intelligence, including the audience in the “game mode,” when in order to immerse oneself in the process, one needs to temporarily accept the authenticity of what is happening. The difference in the degree of belief in imitation is shown in an interesting way in the story *The Sandman* by E.T.A. Hoffmann. People tend to see the limitations of a doll demonstrating all the abilities of a socialite, and in order to really believe, you need a magic tool – in this case, a pair of glasses, which makes the main character fall under the spell. We can say that the hero was forced to change his way of seeing with the help of a technical device. Modern digital technologies create an environment that favors illusion, similar to Hoffmann's telescope.

Mimetic technologies

The most unusual technology proposed in antiquity for creating artificial intelligence can be called mimesis. Although essentially all the described technologies for creating artificial intelligence have an imitation component – having a similarity with a person, which is not at all necessary, and in most cases interfering with the performance of functions, this version of technologies implies that imitation is not just a necessary, but a necessary and sufficient condition for generating intelligence. At the first stage, imitation appears as an external likeness, therefore, conventionally speaking, a statue acquired intellectual abilities in the ancient imaginary. Later, the likeness became more and more complete. The most ancient texts describe how people were unable to distinguish imitations from real people. For example, in Chapter 5 of *Liezi*, the master has to disassemble his creation to avoid the wrath of the sovereign: “Examining it closely, the king found all the internal organs complete – liver, gall, heart, lungs, spleen, kidneys, stomach and intestines; and over these again, muscles, bones and limbs with their joints, skin, teeth and hair, all of them artificial...” (Liezi, 2015). In an ancient Indian story, an ingenious woodworker created a wooden woman, whom his friend mistook for the real thing and was immediately stricken with desire, since beautifully dressed and richly ornamented, she behaved like ordinary women “she could come and go under her own power, and could also serve wine and make eye contact with those she served.” (Chapuis & Droz, 1949, pp. 18–20).

Mimesis is a natural part of art, the iconic signs created by art are meant to refer to the original. The idea that, being similar, something will exhibit similar properties, in some sense corresponds to the natural way of perceiving the world. Although, unlike art, technology implies a deeper form of imitation, in the ancient world, art, craft, and scientific knowledge are part of one whole – “*techne*” (Greek: τεχνη), which Martin Heidegger interprets as “a mode of revealing.” *Techne* makes something manifest in the



present in one way or another among things that are already existing. Russian philosopher and specialist in ancient culture Aleksei Losev draws attention to the specificity of the Greek understanding of the world, which he calls ancient consciousness – sculptural, implying the fusion of idea and matter, where one can be known only through the other. The Greeks contemplate the idea to the extent of its materiality, and contemplate matter to the extent of its ideality (Losev, 1979, p. 13). Philologist Aza Tacho-Godi believed that what we call personality is often expressed in Greek by the term “soma,” that is, “body.” The mythological worldview was characterized by the perception of gods also as “bodies,” albeit a perfect ideal image (Kozhurin et al., 2023).

In Greek histories, the most famous sculptor and artisan is Daedalus. His lifelike (*mimemata*) wooden statues, called “daedales,” are described in many books as moving and talking (Ouvrard, 1679; Plato, 1967, p. Euthyph 11b-d), “if they are not fastened up they play truant and run away” (Plato, 1966, p. Meno 97d). From these descriptions, it seems that Daedalus's statues were given meaning by their stunning authenticity. Daedalus is presented as an artist-demiurge whose art “combined Platonic concepts of craft (*techne*) and poetry (*poiesis*)” (Molok, 2017, p. 42). At the same time, Aristotle was inclined to see in the statues rather a kind of scientific and technical trick with the help of mercury (Aristoteles, 1995, p. On the Soul, 406b). Several satirical ancient works introduced Daedalus's sculptures to ridicule the gullible, while emphasizing that they are not alive. They say that “a self-propelled statue only ‘appears’ (*dokei*) to see and move: it is not a real living being” (Morris, 1995, pp. 217–223). The general impression from the descriptions of the Daedalus statues is somewhat ambivalent, although it is acknowledged that they really moved. The art of mimesis itself, it would seem, encourages a game, a state of half-faith, characteristic of our era, when, knowing about the artificiality of the origin of a creature, you want to see the genuine in it (Bylieva, 2023). Among the various crafts of Daedalus, moving wooden dolls for Ariadne and for the daughters of King Kokal are described. Dolls constitute an “intermediate link” between “living” and “non-living” imitation. Those who are included in the magic circle of the game perceive the dolls as alive. It is not without reason that living toys are a popular plot of a huge number of fairy tales, stories, and cartoons around the world.

Another popular direction of the imaginary are mimetic creations made of clay, which in the Jewish tradition is called a golem. The word golem (in Hebrew גֹּלֶם) is found in Psalm 138, which speaks of the state of a person preceding birth, in Russian it is translated as “embryo,” in Church Slavonic the word “unmade” is used. Interestingly, the creation of Adam by God is also described in the Talmud (Tractate Sanhedrin 38b) as the creation of a golem from clay. In the Middle Ages, interest in the creation of golems increased; starting from the 12th century, the stories of their creation and existence are described in many books (for example, *Sodey Razaya* [Secrets of the Mysteries] by Eleazar ben Judah of Worms). Unlike other artificial intelligent beings that acted as if they were alive, the golem was relatively easy to destroy, thanks to the manufacturing technology, which implied that “matter was brought to life” by applying an inscription to the body. Thus, the golem had the potential to be a “kill switch” in its design. A Polish Kabbalist in the 17th century described the creation of a golem as a union of formless matter and a form-determining higher principle. The divine prototype “made a creature



out of matter [Heb. Golem] and form [Heb. tzurah¹] and it performed hard work for him, for a long period, and the name of emet was hanging upon his neck until he finally removed it for a certain reason” (Idel, 1990, p. 296).

The most original form of an iconic sign, capable in a sense of creating a copy of the owner (or another intelligent being) and performing highly complex tasks in a narrow intellectual range, are magic mirrors. Thanks to Snow White by the Brothers Grimm (1812) and *The Tale of the Dead Princess and the Seven Knights* by A. S. Pushkin (1833), and their animated and artistic interpretations, the most well-known function of a mirror is information about the most attractive female face in the world. Although the search capabilities seem narrow, the request itself is clearly not simple and requires not only to have a constantly updated database of the appearance of all women, but also to make a selection, guided by the criteria for choosing the most attractive among them, which is by no means obvious. However, mirrors in old fairy tales and more modern interpretations can also perform broader functions – answering various questions or showing other people or places. There are legends that Catherine de Medici used a magic mirror to see the future of France, and Henry IV used it to uncover political conspiracies against himself.

The mimetic line of creation, the theme of unexpectedly animated statues, mannequins and other human likenesses, remains part of the imaginary. Urban legends abound with stories about statues walking at night, and there are also legends about divine statues giving signs, which were told in both Egyptian and ancient legends (*The Juggler of Our Lady*, known from the 1892 novella by Anatole France and the opera by Jules Massenet; in Japan fairytales the stone statue of Jizo came to life; in Dmitry Merezhkovsky's *Sakya Muni*, based on an Eastern legend and a fairy tale by Oscar Wilde, the statues of Buddha and the Happy Prince; in Chinese legends, statues of deities responded to prayers and defended their native land (Shkurkin, 2020). Among the most famous surviving “living” statues are the monument to King Gustav III in Stockholm and Emperor Peter I in St. Petersburg. Alexander Sergeevich Pushkin created a vivid apocalyptic image of the revived *Bronze Horseman* (1833). Later, the monument continued to move around the city in the works of Anna Akhmatova, Alexander Blok, Nikolai Gumilev, Vladimir Mayakovsky, Viktor Pelevin and others. We know the statue of the commander who came to take revenge in Wolfgang Amadeus Mozart's opera *Don Giovanni* (1787) and *The Stone Guest* by Aleksander Pushkin (1830). In Selma Lagerlöf's *The Wonderful Adventures of Nils Holgersson* (1906), the protagonist is pursued by a bronze statue of King Charles XI and protected by a wooden statue of the boatswain Rosenboom. In Alexander Grin's short story *The Gray Car*, the protagonist is pursued by a runaway shop girl-mannequin, whose role becomes larger and more sinister in Oleg Teptsov's 1988 film based on the story, *The Decorator*. In Pamela Travers's *Mary Poppins Returns* (1935), a statue of the boy Neleus comes to life with a dolphin who is bored of standing still.

¹ tzura (tsûrâh Hebrew צורה “prototype” from the verb tzur צור, to form, to make) – in Kabbalah, a divine prototype, a spiritual monad, the highest part of a human being (Knoche, 2017, pp. 64, 119).



Statues in most cases were a double of their original, a kind of avatar representing a deceased or divine person, thus their development goes through various imaginary variants of creating doubles (for example, the “doubles” from the Strugatsky brothers' novel *Monday Begins on Saturday*) to modern virtual avatars based on artificial intelligence, capable of representing deceased people and replacing living ones while they are offline. Golems are the result of purposeful human activity to create intelligent beings from available raw materials. If the creation of increasingly accurate copies of people did not cause problems, then the process of their revival, devoid of religious overtones, needed some justification. In fairy tales one can already see the injection of “living” raw material (in the spirit of the Eastern understanding of the spirituality of everything) like a log in the adventures of *Pinocchio* (1881) by Carlo Collodi and *Buratino* (1935) by Alexei Tolstoy, or the addition of a biological component, for example, the powder of a very tenacious plant in the story about Urfin Juice in 1963 by Alexander Volkov.

Animation or the criterion of being animated used to sharply divide entities, is completely eroded in the modern era. Kevin Liggieri and Marco Tamborini, for example, use the concept of “soul” in relation to artificial intelligent beings, meaning a “complex set of operations that enable organismal reasoning and feedback with the environment” (Liggieri & Tamborini, 2022, pp. 31–32), that is, the issue of “animation” is also considered in a technical or mimetic, and not a metaphysical key.

“Scientific” technologies

In the modern imaginary, artificially created beings usually appear through scientific experiments, although they often retain their connections and names from the past. The earliest and most popular story, traditionally featured in all studies of the past of artificial intelligence, is Mary Shelley's novel *Frankenstein; or, the Modern Prometheus* (1818). The technology involved the use of chemical devices and scientific experiments and dead bodies as a basis, not without the influence of alchemical research of the past (the novel mentions that Frankenstein studied the works of Agrippa, Albertus Magnus and Paracelsus). Thus, it can be said that Mary Shelley's work, based on two previous traditions – biological and imitative creation of intelligent beings – opens the way to a scientific and technical approach. In James Whale's film version of the story, *Frankenstein* (1931) and *Bride of Frankenstein* (1935), the creature becomes conscious through a lightning bolt, though to a much lesser extent than in the literary original.

In the early 20th century, three films about the golem were made by Henrik Galeen, Paul Wegener, and Karl Böse, which gave rise to many versions and remakes: *The Golem* (1915), *The Golem and the Dancer* (1917), and *The Golem: How He Came into the World* (1920), of which only the last has survived in its entirety. The German film reproduces medieval Jewish legends. But where the “traditional golem” is a strong but intellectually and emotionally limited creature, this is here ambiguous with the creature capable of both merciless murder and an understanding of beauty and the manifestation of kind feelings. In the 1916 German film version of *Homunculus*, a homunculus created in a scientific laboratory has special intellectual abilities that help him come to power and start a world war.



The mechanical/electrical direction of artificial intelligence development was becoming popular not only in the imagination, but also in some sense as a new implementation of automata. A bright artistic impetus was the production and visualization of Karel Čapek's 1920 play *R.U.R.* Although the author himself described the industrial creation of robots based on biochemical discoveries, numerous visualizations did not follow this. In Russia the play became known through Alexei Tolstoy's adaptation *Revolt of the Machines* where the word robot was not retained as a neologism, but was translated as worker, thus the book contained two types of workers: artificial and natural, practically indistinguishable from each other (Romanenko & Shcherbinina, 2022).

In general, it is noticeable that the imaginary of the early 20th century brings to the fore the theme of the danger of creating artificial beings, their desire to be “like people,” and a rebellion against human. This, of course, does not prevent, but rather contributes to the growth of popularity of the theme of the appearance of “embodied” robots on the streets of large cities and in advertising. Herbert Televox, designed in 1927 by Roy Wensley, in the form of a conventional figure of a person, could control the house by obeying sound (whistle) command. He was presented in the January 1928 issue of *Popular Science Monthly* under the following title: *Machines that think: Electrical “men” answer phones, do household chores, operate machinery and solve mathematical problems.* In 1928, the Japanese biologist Nishimura, contrasting his creation with “robot slaves,” designed Gakutensoku – a giant pneumatic automaton sitting on a gilded pedestal with closed eyes and, it would seem, immersed in its thoughts. The crystal that lit up in his left hand seems to awaken the giant, who begins to write on a piece of paper. Nishimura believed that artificial beings, becoming more and more perfect, should become an inspiring model for humanity and facilitate human evolution by expanding intellectual horizons (Frumer, 2020). Although Gakutensoku was technically simpler than many robots of the early 20th century, it can take its place among the forerunners of artificial intelligence due to its attributed specific highly intellectual role as a teacher of humanity. In the imaginary, it occupies the place not of a rather simple automaton, but a highly spiritual intellectual.

Thus, the imaginary of the early 20th century made all existing approaches to the production of artificial intelligence scientific. However, it was in the idea of artificial intelligence that all three directions of development that had existed since time immemorial became vividly embodied.

ARTIFICIAL INTELLIGENCE CREATION

In stories about the creation of artificial intelligence, there are as a rule two components which can conventionally be called creation and application. That is, in various legends, fairy tales, philosophical, and practical reasoning, there will be the technology of its production and the consequences of its application. Analysis of images of the past allows us to see how and why a person considered the creation of artificial intelligence necessary. Artificially intelligent creatures often appear next to a person in



the imaginary, but the purpose of their creation and the features of their functioning can differ significantly.

The biotechnological paradigm implies that a person launches a certain “program” that allows, using natural forces, to create a creature, although in some ways different from a person, but still not displaying fundamental differences – its artificiality can manifest itself in certain oddities, but by and large it is an analogue of a person. Agrippa in *De Occulta Philosophia* contrasted the mechanical/imitative, which are based on mathematics and “mere similitudes of natural things.” This a contrast like that between ancient times of the Daedalus statues or ἀντόματα, and that of the self-propelled tripods of Vulcan and Daedalus mentioned by Aristotle, which, according to Homer, went into battle of their own accord (*in certamen*). And thirdly, there is the biological becoming of artificial being (Agrippa von Nettesheim, 1533). Thus, the biological implies most of all the creation of a superior human. Nevertheless, imitation sometimes pretends to be sufficient.

Imitation is inherent in all approaches. Something anthropomorphic is always initially created, but its properties may differ. It should be noted that for Aristotle, the “area of beauty” includes both living beings and works of art, that is, both living beings and works of art can be “purposeful without purpose.” Therefore, in some cases, beings can reach the level where they do not need justification for existence. However, more often there is a specific utilitarian meaning given by their creator. As technical objects, they are conceived to perform certain functions needed by a person. Mechanical variants have the least specific intellectual features – they can have more or less narrow professional skills. Performing professional functions, most often as servants, artists or warriors, becomes their goal. The biological and imitation approach implies the emergence of a being that is superior to a person in some ways and inferior in others. Such a being needs to be created in order to perform special tasks that are beyond the power of an ordinary person. First of all, the creation of artificial intelligence is still a challenge, initially it was thought of as a difficult task, subject only to the greatest of the great wizards, priests and mechanics. Its primary task is to amaze and surprise. Pragmatic goals of creating intelligent beings cannot be considered central, since if we go from the point of view of tasks, then the option of “creating intelligent beings” to fulfill these tasks is hardly on the list of necessary things to do. But all of this has little to do with the performance of utilitarian functions. In most cases, it seems that the creation of an artificial being is valuable in itself, as proof of special power, and its functions are added later – since it is necessary to use the resulting creation. Moreover, this is characteristic for stories about sages, magicians, rabbis, and alchemists who reached the appropriate level, and equally characteristic for real mechanisms whose use provoke fear and admiration of believers in gods, whose skillful embodiments demonstrate meaningful action, or admiration and surprise of the paying public. This shows, according to Aristotle, that living beings and works of art are allowed to be expedients without a goal, and in a certain sense, imaginary artificial intelligence strives just for this.



THE SUM OF THREE TECHNOLOGICAL TYPES

The idea of “artificial intelligence” that arose as a result of the progress of computer technologies is at the same time a continuation of a very ancient tradition. It appeared as a variation of the most ancient ideas, myths, and aspirations of humankind in a modern scientific and technical format. Despite all the “modernity” and unprecedentedness of artificial intelligence, which attracts the attention of government officials at the highest level, scientists from all countries, and ordinary users, its understanding still follows the classical concepts and dichotomies.

The idea of giving the machine the ability to reason logically, inspired by the Dartmouth Conference, led to the creation of many corresponding programs, but it soon turned out that logical concepts are not enough for intellectual operations. Thus, having appeared initially as a one-sided share of imitation of a person, it developed into a most advanced mechanical-electrical-digital technology, it eventually required a biological, neural network approach for implementation, thus combining all three traditional approaches to the construction of artificial intelligence. Today, when mimesis and imitation have reached such a technologically high level, public and philosophical discourse continues to wrestle with the question of whether full and deep mimesis implies becoming. The question of imitation, for example, is at the level of the ability of modern large language models to maintain a dialogue or answer questions – do they really communicate or just imitate or pretend (Bender et al., 2021; Perez Leon, 2024; Pezzica, 2022)? The question of imitation concerns as well the level of artificial modeling of consciousness – a complex functional dependence of neurophysiological codes of subjective reality on a certain material substrate.

The question is not so much how successfully artificial intelligence performs certain functions, but constantly comes around to the comparison with humanity. At the same time, human intelligence is today set as a certain (though conditional, since it is unclear how it can be measured) starting point, beyond which a certain other history of humanity begins, depending on the mood of the authors – either leading to universal prosperity or to destruction. And if a few years ago such projects were the lot of a few futurists and philosophers, after the spectacular emergence of the large language models in 2022-2023, the scientific discourse around artificial intelligence took on a lot of references to “conscious machines,” singularity,” or “divine artificial intelligence” (Butlin et al., 2023; Gervais, 2023; Koutsakis & Giannakaki, 2024). Moreover, official government documents and programs also demonstrate a trend of anxious anticipation. At the same time, a specific finding in official documents is a supposed increasing agency of technology, which increasingly determines the development of humanity. In this case, human agency is reduced to adaptation, reaction, or mitigation: “The force implied in this attribution of agency is that one can either ride the wave of advancement or drown in the waves of progress” (Brown et al., 2016, p. 9).

As in ancient times, humanity strives above all to create something that is superior to itself. In the trick of the power to create a lock that you yourself could not open, people are as likely to be dissatisfied with the idea that a machine can have equal or greater



intellectual capabilities as they are with the idea that humanity is incapable of creating such a machine.

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