



Golem & AI: Technologically Advanced Monsters

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Abstract

Today, the phenomenon of the golem becomes a symbol of technological progress, especially in the form of modern android robots, raising important questions about technological singularity, subjectivity, and authorship (as presented in a number of legislative and regulatory documents). Creepy examples of golems in mythology, scientific and journalistic literature, performances, or modern technological experiments evoke feelings of fear and cause cognitive dissonance (the uncanny valley effect), which serves as a protective human reaction to the 'behaviour of artificial monsters'. However, modern practices of organising the creative process using a brain-computer interface are taking on special characteristics, given the merging of humans and AI into a single organism. After all, in such practices, it is extremely difficult to determine the creativity of a technological golem and the corresponding risks to humans. Therefore, the article raises important questions about the potential misuse and abuse of AI's technological capabilities in the production process, summarises legal and regulatory aspects, and considers possible future scenarios for the development of humanity in the context of transhumanist ideas.

Keywords: golem, monster, artificial intelligence, authorship, algorithmic creativity, robotisation, uncanny valley, singularity



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Introduction and aim

People have long dreamed of creating a unique device or artificial intelligence that would perform necessary production functions, as evidenced by the famous Jewish legend of the Golem – a clay giant artificially created by Kabbalist rabbis to perform extremely difficult work and protect the Jewish people from attacks by foreigners in Prague (sixteenth century). This character from Jewish mythology supposedly performed certain actions under the influence of Kabbalistic spells. According to legend, when the ‘programming failed’, the Golem destroyed everything around him, got out of his master’s control, and killed him. As a result, the technological functionality of the artificially created Golem literally destroyed a human being.

This thesis is particularly relevant today, as we live in an era of digital golems. The appearance of the first industrial robot, *Unimate*, in 1954 at *General Motors* was the starting point for the evolution of robotic systems, which gradually integrated into the field of art, applying aesthetic computing (Fishwick 2006). Modern technologies have demonstrated the ability to transform matter into energy and information processes, which has led to a rethinking of the fundamental ontological categories of being. As a result, there has been a gradual levelling of the gap between technological innovations and art, between scientific knowledge and magical-mythological models of understanding reality. “Technical images are perceived as the result of the action of programmes and devices that increasingly determine the ways in which humans think and perceive reality.” (Flusser 2000: 12). The complication of the creative process technological component, in particular mechanisation and automation, has increasingly changed the specifics of artistic creativity, style and production results. These observations point to the culture-creating potential of technological systems, which are gradually becoming more self-sufficient and self-learning, like the mythological golem. Therefore, we propose a comparative method of the golem and its modern prototype, which allows to study the level of trust in artificially created golems, as well as to identify possible fears and risks for human activity, based not only on mythological stories about monsters, but also considering modern examples of the ‘disobedience’ of technological golems.

The examples of the Golem’s existence in mythology, scientific and journalistic literature, illustrations, spectacular performances or modern technological experiments instil fear, cause cognitive dissonance and create the uncanny valley effect (a person’s reaction to the realism of an artificially created object when it approaches a real source) (Mori 2012: 99). Modern brain research using fMRI proves that the prefrontal cortex of the human brain identifies and divides images into human (acceptable) and non-human (unacceptable). But the decision whether to trust or not is made by the amygdala (which is responsible for decision-making and emotions) (Rosenthal-von der Pütten et al. 2019: 6555). Therefore, with an

emphasis on identifying the uncanny valley effect, an analogy is drawn between a golem, a monster, and artificial intelligence (Tinwell et al. 2011: 326-341). The problem of losing control over an artificially created mechanism, which lies at the heart of the mythological plot, consolidates the theory of technological singularity, according to which the ability of a robotic device to function without human programming (control) is realised (Vernor 1993). In order to clarify the problem of subjectivity in the organisation of robotic practices, both technocentric conceptual views on the organisation of the creative process (which find their expression mainly in the conceptual sphere of technological determinism) and anthropocentric approaches to understanding artistic culture (established in posthumanism and transhumanism, the theory of technological singularity).

Another analogy lies in the approximation of the mythological process of creating a golem to artistic creativity, since the creator of a golem is essentially an artist. The question of cultural creativity (inspiration, ideas and their materialisation) resonates with the methods of artificial prototyping. No matter how hard artists try to explain their motives and methods, it is impossible to find a comprehensive answer to this question. James Sturm, author of *The Golem's Mighty Swing*, believes that the golem continues to resonate with artists and writers because the story mimics the artistic process: "You create a work of art, and then it takes on a life of its own." (Sturm 2017). This process can be interpreted through the prism of Jean Baudrillard's concept of simulacra, according to which contemporary culture functions in a mode of hyperreality, where signs and algorithmic models replace material reality (Baudrillard 1981: 6). In the context of our research, the simulacrum plays a special role because, as a copy of something that does not exist, it presupposes its origin in the artist's imagination and only then its material realisation in space. The simulacrum is not just a copy of copies, but a phantasmagorical image unlike anything that has existed before. When Deleuze writes that "the present is determined by the force of the simulacrum" (Deleuze 1990: 265), he insists that each era forms its own 'simulacral' versions, taking into account the challenges of the time (Smith 2005: 102). According to the concept of creativity by R. Folgieri, M. Granato, C. Luciari and D. Greki, "the artist's idea approaches a state of consciousness" (Folgieri et al 2014: 65-97), but the human mind begins to realise the process of implementing a creative idea only when the task of technological representation arises. As a result, the divergent is often replaced by the canonical. These processes correlate with W. Benjamin's thesis about the loss of the 'aura' of a work of art in the conditions of its technical reproducibility, which in the digital age acquires a new dimension – algorithmic (Hansen 2008: 336). These theoretical foundations allow us not only to compare the monster-golem with contemporary narratives about the perfection of AI as a technologically advanced prototype of the mythological golem, but also to

explore issues of creativity, authorship, and subjectivity in AI applications.

Most legal discussions focus on issues of ethics in the application of artificial intelligence (Magrani 2019: 1-19; Larsson 2020: 1-16; Kenneth-Southworth & Li 2022: 418-427), legal status (Begishev 2023) and aspects of competition law (Beneke & Mackenrodt 2019: 109-134; Chen 2023: 187-200; Zhuk 2023: 1299-1309). Scholars describe the criminogenic potential and preventive role of AI (Broadhurst et al. 2019) and examine the legal situation regarding automation and AI in the United Kingdom, the United States and Asia (Walker-Osborn 2018: 42-43). Most of them argue that cultural practices of AI implementation cannot be unique and original, as they ultimately turn out to be a product of human programming and training data (Hofstadter 1999: 83-91). The question of understanding the implementation of AI in creativity is based on the assertion that computing systems imitate human behaviour (Janjanam 2022: 1425-1433). Scientists agree that there is still no AI technology that is self-aware, independent, and capable of dealing with emotional and social effects (Hadzi & Roio 2020, 1-18). Instead, J. Litman notes: "Copyright laws become obsolete when technology renders obsolete the assumptions on which they are based." (Litman 2006: 22). S. Ligon argues that if we recognise the originality of products created by AI, then we must recognise the subjectivity of artificial authors (Ligon 2019: 51). In this context, attention is focused on the issue of diminishing the role of human activity in the organisation of artistic creativity and, accordingly, research.

The golem in various monster forms

The word *golem* itself appeared long before the mystical legend about the great sixteenth-century Prague Kabbalist and Talmudist Rabbi Jehuda Loew ben Bezalel, who created it to protect the Jewish community from Christian attacks. The Hebrew word *galmi*, meaning *unformed mass*, is found in Psalm 139:16:

Your eyes saw my unformed limbs;
they were all recorded in Your book;
in due time they were formed,
to the very last one of them.

A later midrash on the creation of man states that Adam was a golem, a body without a soul, until the fourth hour of his existence, when God breathed life into him. Without the intellect and spontaneous creativity of the human mind, Adam would have been nothing more than a golem – as he is, in fact, called in some old rabbinical stories interpreting the biblical narrative (Scholem 1966; Vudka 2020: 108). A thirteenth-century manuscript written by Rabbi Eleazar of Worms, one of



Figure 1. *Le Golem et Rabbi Loew près de Prague* (M. Dvořák, 1951), oil on canvas, 244 x 202 cm (Prague, Židovské Muzeum © Jaroslav Horejc)

the first German Kabbalists, contains detailed instructions for creating a golem; by the end of that century, summoning a golem was a common part of Kabbalistic practice (Cooper 2017).

However, returning to the legend of the sixteenth-century golem, according to which he protected Jews from attacks by Christians, it is worth remembering that the golem is depicted as a monster who got out of control of his master and killed him, turning him to ashes. According to another version of the legend, the Prague Golem was an extreme literalist. When he was ordered to bring water from the well to Rabbi Jehuda Loew's house, he continued to carry buckets of water until the house was flooded. He became so uncontrollable that Rabbi Jehuda Loew was forced to erase the sacred name engraved on his clay forehead, thus putting an end to his existence. According to legend, his body was hidden in the attic of an old

synagogue in Prague (Cooper 2017).

The idea of creating a golem is aesthetically represented in the discourse of several eras. Since the eighteenth century, the mythological golem has gone beyond esoteric thought, becoming the subject of numerous literary works and film adaptations. As a literary motif, the golem was probably familiar to Mary Wollstonecraft Shelley, author of the novel *Frankenstein* (1818). The golem and Dr. Frankenstein's creation are linked in people's imaginations. Both stories explore humanity's fascination with creating life, while highlighting the risks of hubris and the potential dangers that may arise.

In the first half of the twentieth century, numerous interpretations of the legend of the golem appeared, linked to issues of migration, persecution and national identity became extremely relevant. According to the Jewish magazine *Moment*:

The golem – much like the amorphous clay from which it is usually formed, the golem is a highly mutable metaphor with seemingly limitless symbolism. It can be victim or villain, Jew or non-Jew, man or woman-or sometimes both. Over the centuries, it has been used to connote war, community, isolation, hope and despair” (Cooper 2017).

Gustav Meyrink's novel of the same name (1915) is clear evidence of a successful experiment in representing Jewish legend, which has been aesthetically transformed in the discourse of several eras. “Appearing in the midst of the First World War, Meyrink's work reflected the sense of an imminent apocalypse arising from the destructive potential of modernity, with the Jew as its sign.” (Gelbin 2022: 86). Monsters “mirror the anxieties and fears of society, emerging more vigorously at points in time and history when cultural stresses are keenest.” (Spiro 2013). “The monster's body quite literally incorporates fear, desire, anxiety, and fantasy (ataractic or incendiary), giving them life and an uncanny independence.” (Cohen 1996: 4).

Numerous film adaptations of the legend and experimental theatre productions about the golem became extremely popular in the early twentieth century: P. Wegener's German expressionist horror film *Der Golem: Wie er in die Welt kam* (1920) and H. Leivick's play *The Golem: How He Came into the World* (1921) depict the golem in two radically different ways. In Wegener's work, the golem is a heartless monster capable of killing and tormenting, while in Leivick's work, he is needy, afraid of being left alone and powerless to save the Jewish people (Spiro 2013: 12). An important reference book for fans of the golem is I. Moshe's *Golem: Jewish Magical and Mystical Traditions about the Artificial Anthropoid* (1990). In it, I. Moshe argues that the role of the concept of the golem in Judaism was to give

the Jewish elite an exceptional status by endowing them with supernatural abilities derived from their profound knowledge of Hebrew and its magical and mystical values (Nechvatal 2017). Further variations on the golem image are impressively diverse: from an executive slave (*Foucault's Pendulum* by U. Eco) to a defender of Jews (*Inglourious Basterds* by Q. Tarantino, 2009, *Supernatural. Everybody Hates Hitler* (season 8, episode 13, 2013) and *Sleepy Hollow. Golem* (episode 1, season 10, 2013)) and saviour of humanity (the film *Golem: The Beginning* by D. Paz, Y. Paz, 2018). However, there are examples in which the golem is demonised to enhance the dramatic effect. In particular, the television series *Sherlock* (2010) drew a comparison between the golem and a murderer who 'squeezes' the life out of people with his bare hands. In the Japanese television series *Super Sentai* (season *Kaito Sentai Lupinranger vs. Keisatsu Sentai Patranger*), the character Destra has grenades that can be used to create giant golems. In the dystopian play *R.U.R.*, K. Čapek identifies the golem monster with mechanisms made in a factory from grown tissues and organs. According to the plot, Čapek's golems rebel and kill their masters, but, like Wegener's golem, they also have emotional experiences and erotic desires. In the thriller *The Golem* (2016) by director J. C. Medina, a series of horrific murders takes place that cannot be explained by logic or common sense. A dramatic presentation is the humanoid robotic metaphor of the awakening of post-humanity in *School of the Moon* (2016). Thus, the simultaneous technological perfection and slavish weakness of the golem allow it to take radically opposite positions, which can be reinterpreted according to the needs of the narrator.

This multifaceted nature of the image probably explains its popularity today, especially in the visual arts. L. Fishman's painting *Golem* (1981), presented at the exhibition *Golem! Danger, Deliverance and Art* (curated by E. Bilski, New York, 1988), J. Seinfeld's series of five photographs *Golem* (1999) at two exhibitions (Prague and Paris, 1999) and many other paintings, drawings, photographs, cinematic clips, sculptures, and comics illustrate the interest of contemporary researchers in the golem phenomenon (Nechvatal, 2017) (Fig. 2).

These observations of various manifestations of the golem culminate in a new film, *Five Nights with Freddy's 2* (2025) by E. Tammi, in which humanoid and robotic animatronics are controlled by the demonic character Puppet in order to take revenge on humans. However, here they are only used as tools for the evil intentions of their creator, and are not capable of harming humans on their own. A similar subtext can be found in the famous novel *Wrath Becomes Her* (2023) by A. Polydoros, where a golem is created from river mud for revenge. A man uses kishuf magic to create the golem Vera, who must destroy the Nazis who killed his daughter. This plot twist explains the idea of traditional mysticism: to protect the Jewish people. Vera struggles to find her own identity and discovers that people are trying to use dark forces (kishuf magic), putting humanity in danger. In the novel



Figure 2. *Golem* (J. Seinfeld, 1999), series of 5 photographs
(Prague, Židovské Muzeum © Adagp, Paris)

The Robot Hides in the School (2024) by A. Kokotyukha we find similar narratives about the deliberate programming of robots to carry out evil human intentions. A Ukrainian family leaves their home and flees from the occupiers' shelling, leaving their robot assistant Romchik behind. Later, robot is taken by a thief to commit thefts. Romchik, like Vera from the novel *Wrath Becomes Her*, tries to find his own identity, but his programmed functionality does not allow him to act independently. Thus, the golem becomes a monster only as a result of appropriate

programming – in order to perform tasks delegated by a human being. However, it is significant that these literary works also demonstrate the golem's desire to make independent decisions, oppose its creator, and take the law into its own hands. The golem of Brooklyn, created from plasticine by L. Bronstein, a Jewish art teacher in a secondary school, shows curiosity about his past. The golem decides to go to Kentucky to kill a group of white racists who hate Jews and are holding a rally there (Mansbach 2023). Another motivation for the golem's disobedience and opposition to its creator's intentions can be found in stories where golems fall in love, are rejected, and this causes their destructive rage. We find such a golem in the play *Prince Ferrix and Princess Crystal*, based on a story by S. Lem, staged at the *Copernicus Science Centre* in Warsaw (Poland). The main character, the robot Ferrix, falls in love with the robot Crystal (Legierska 2014). However, the heroine dreams of falling in love with a human and ignores all the robots competing for her attention. The song recreates the image of a golem who wants to imitate human behaviour and fall in love with a human. The radically opposite manifestations of the mythological character's functioning (protection and danger) make it possible to interpret the role of the golem in storytelling and the stimulation of concepts of technophilia and technophobia in different ways.

Summarising the various roles of the golem, it can be stated that each of its numerous representations (in literature, theatre, cinema, visual arts, or popular culture) is perceived as an image of human existence and reflects the concerns of its creators and the anxieties of the era in which they lived. Accordingly, the golem is seen as a concept for expressing the fears and challenges of a particular era, for emphasising the ambivalence of the relationship with scientific and technological progress. In this sense, the scientist (creator) seeks to benefit humanity, just as the rabbis' goal was to save Jews threatened by violence; therefore, any danger that arises as a result is an unintended consequence. It is this dialectical nature of the golem – both saviour and destroyer – that provides fertile ground for comparisons with AI and inspires writers, filmmakers and artists to interpret this archetype.

Reasons for the incorrect operation of AI golems: imperfect functioning or “uncanny disobedience”

The similarity between golems and monsters of the nuclear age is striking. As we strive to create the perfect robot, the terrifying possibility that they may develop a will of their own, become treacherous, or simply replace humans in various fields of activity grows stronger (Singer 1984). This technophobic thesis existed during various periods of industrialisation not only in scientific and journalistic literature, but was also manifested in various forms of human activity, in particular, it led to the destruction of looms and other mechanised machines by workers in the

seventeenth and eighteenth centuries in England, and ultimately to the Luddite resistance in Europe in the early nineteenth century (Clancy 2017: 392-398). Today, significant investments in the development of automated mechanisms and the rapid pace of robotic renewal of the workforce of leading companies in difficult market conditions reinforce the importance of rethinking the use of technological golems. After all, every innovation is partly perceived as a golem (performer and innovator) and is subject to critical review by the scientific community. Not to mention the *Golem Alef* (*Golem Number One*) computer, developed by specialists at the Weizmann Institute in Israel in 1965. At the opening ceremony, A. Sholem spoke about the similarities between the Golem of Prague and the computer, concluding with the following words: “So I resign myself and say to the Golem and its creator: develop peacefully and don’t destroy the world. Shalom.” (Scholem 2023). At the same time, the author of the term *artificial intelligence*, J. McCarthy, warns that the capabilities of modern technology exceed those of humans (McCarthy 1987: 1030). These appeals allegorically illustrate (well-founded) expectations of scientists for self-sufficient functioning of computer systems, illusory determination of the subjectivity of the golem.

J. Jefferson, author of the scientific article *The Mind of the Mechanical Man* (1949), notes:

We have had a hard task it dissuade man from reading qualities of human mind into animals. I see a new and greater danger threatening – that of anthropomorphizing the machine. When we hear it said that wireless valves think, we may despair of language (Jefferson 1949: 1106).

In this context, we are not talking about a technologically perfect system, but about the mental and psycho-emotional abilities that a person conditionally endows an artificially created system with. As a result, the mechanism personifies the subject of creativity, a participant in the production process, which raises a number of ethical issues, in particular regarding intellectual property, privacy and bias.

Similar ideas about the subjective self-expression of AI can be found in the famous novel by S. Lem’s novel *Golem XIV* (1978), in which the American military decided to implement AI to automate military command and political-economic actions – in other words, to create an absolute artificial strategist that would ensure global superiority for the United States. A programme with an initial budget of \$19 billion was launched, but that was only the beginning. The construction of centres is developing very rapidly to satisfy the need for computing power (for example, Colossus, Elon Musk’s xAI supercomputer located in Tennessee, which has 200,000 NVIDIA chips with plans to expand to a million). Our minds are filled with fears about the dark side of artificial intelligence, inspired once again by

fantastical movie plots. From the HAL 9000 computer, which killed the crew of the Discovery One spacecraft, to the Skynet system, which brought about Judgment Day for all of humanity. These apocalyptic scenarios are still a long way off, but for now, the greatest concern is the use of artificial intelligence by humans for selfish purposes (as in the film *Freddy's Five Friends*, the novels *The Robot Hides in School* and *Wrath Becomes Her*), as well as the erroneous results of AI functioning, reminiscent of the results of the disobedient 'behavior' of the mythological golem.

Modern artificial golems (neural networks, AI agents) have the unique ability to simulate the future conduct of a system to support a wide range of tasks. Such algorithmic improvisation reminds us of the behaviour of the mythological golem with its unpredictable actions and consequences. Digital twins mostly do not have an anthropomorphic appearance, but are perceived as subjects of the creative process (Aguirre 2025: 89). When these artificial golems make mistakes, produce unpredictable results, or refuse to perform the necessary tasks altogether, this subjectivity becomes uncontrollable. Let us consider such cases.

In December 2024, *Semafor* wrote that Slovenian filmmaker Nenad Cicin-Sain used ChatGPT to generate a script for an upcoming film (Albergotti, 2024). The director hoped to receive the result in a matter of minutes, but the chatbot requested two to three weeks. Cicin-Sain, thinking that the task really did require that much time, asked for it to be completed in two weeks. However, ChatGPT did not send a single fragment of the script during the planned period, each time coming up with new excuses and promising to complete the work in the near future. In conclusion, he wrote that he had not been given a clear deadline. The episode appears to be a new kind of elaborate, multi-day 'hallucination', where an AI model answers something incorrectly and then refuses to budge from that position (Ibid.). The problem, writes *Semafor*, is that LLM is unable to build a long memory algorithm to maintain a contextually coherent narrative, but the fundamental reason lies in the fact that these models are predictive and base their responses on probabilities, and original ideas are not born this way (Ibid.). The most important conclusion from this experience was that AI bears no responsibility for its actions. After all, the director paid to use the neural network to obtain the final product (the script), but the AI golem failed to deliver on its promise. S. Lem wrote aptly on this subject: a conscientious computer thinks about how to perform a task, while an intelligent one thinks about how to get rid of it (Konior 2023: 101).

A similar negative result occurred on the Cursor AI programming platform, where the AI, after writing approximately 750–800 lines of code, stopped working and displayed the following message: "I cannot generate code for you, as that would be completing your work [...] Generating code for others can lead to dependency and reduced learning opportunities" (Edwards 2025). *Ars Technica* experts, who reported on this incident, explained that the model learned from programming

resources (Stack Overflow), where expert programmers advise beginners to solve problems on their own. In 2015, Swiss police ‘arrested’ the online bot *Random Darknet Shopper*, which made illegal purchases (including drugs) on the Internet (Eveleth 2015), and the NTSB website published fatal accidents caused by the malfunctioning of automated vehicles (NTSB 2019). These are not isolated cases of malfunctions, which indicate the imperfection of technological developments and force us to think about the constant control of artificial generation processes. Examples of ‘disobedience’ seem to indicate resistance by neural networks to performing the tasks entrusted to them. This looks particularly frightening in cases of malfunctioning robotic mechanisms. The execution of specific programmed missions (tasks), scanning of the surrounding space, and prediction of further functioning based on the data obtained form the conditional autonomy of the ‘behaviour’ of anthropomorphic robots (Sovhyra 2021). “37-year-old Japanese motorcycle factory worker was killed by a robot, [which] mistakenly identified the worker as a threat to its work and calculated that the most effective way to eliminate this threat was to push him into a neighbouring working machine.” (Hallevy 2010). It follows that autonomous decision-making by robots will inevitably lead to accidents and harm to people and society as a whole, whether intentional or unintentional. Whether such a technological failure could lead to singularity is an extremely relevant question today.

The more robots resemble humans, the more they frighten people, evoking feelings of disgust and hostility (the uncanny valley effect). Scientist K. MacDorman points out that the valley refers to the level of similarity between the human observer and a similar copy – a copy of that person (MacDorman & Chattopadhyay 2016: 191-192). The research results of the neural activity prove that humanoid robots cause cognitive dissonance and are perceived primarily as monsters rather than social partners. For example, researchers A. M. Rosenthal-von der Putten, N. C. Krämer, S. Maderwald, M. Brand and F. Grabenhorst scanning people’s brains while interacting with artificial agents, found the following: “Functionally related areas encoded critically important input data for signals: the temporal-parietal region encoded a linear continuum of human likeness, while nonlinear representations of human likeness in the dorsomedial prefrontal cortex (DMPC) and fusiform gyrus emphasised the difference between human and non-human” (Rosenthal-von der Pütten et al. 2019: 6556). This conflict of neural selectivity in linear-nonlinear transformation creates the uncanny valley effect, which clearly demonstrates people’s rejection of their artificial likeness, an artificial golem with non-human abilities. The rebellious behaviour of such a golem reinforces technophobic sentiments; in its various roles, it acts as a monster that arouses distrust and fear. In contrast, the emergence of the cyborg as a further variation of the technological golem in human form raises increasingly provocative questions that focus “not so

much on the tension between the liberal humanist tradition and the posthuman but on different versions of the posthuman as they continue to evolve in conjunction with intelligent machines” (Hailes 2005: 2). Artificial intelligent robots may become the next ‘carriers’ of human consciousness, while avoiding the limitations of current biology (Fuller 2011: 2). “The closest transposition would be permitting the BCI device and the human author to be named as co-authors of the work.” (Ramirez-Caminatti 2023: 29). The brain-computer interface “uses artificially generated electrical signals to stimulate brain tissue in order to transmit a specific type of sensory information or simulate a specific neurological function” (Saha et al. 2021: 403), “provides humanity with invasive capabilities that have not been encountered before, requiring the creation of new or special human rights; [...] to cognitive freedom; [...] mental privacy; [...] mental integrity; and [...] psychological continuity” (Botes 2023: 11). In this case, the risks of influencing human consciousness are extremely significant. The question is, what’s gonna be more important in these 2.0 entities – human nature or techno-golem – a question for further hypothetical statements and thoughts. After all, with a malfunctioning BCI device, a person can become a monster to themselves.

Neuroscientists often use computer analogies to study human memory. This fusion of cognitive and technological concepts is illustrated in the performative installation *Melting Memories* (2018, University of California, Frankfurt) by Turkish media artist R. Anadol, which visualises data obtained during an electroencephalogram of the brain as a 3D animation on a media wall (Fig. 3), creating a personalised experience that reflects the unique memories of visitors (Bleeker et al. 2020: 12). This approach illustrates a new aesthetic of the creative process, where AI-based creative agents generate aesthetic products that are evaluated reflexively rather than deterministically. Quality is assessed based on the subjective experience they provide, rather than on the accuracy of representation (Contreras-Koterbay 2019: 107). Despite its ability to represent human memory, modern AI does not yet have a clearly defined specificity of subjectivity. Although the ultimate goal of AI is to mimic human cognitive abilities, it remains spatially and temporally detached, preventing it from achieving the unique subjectivity that defines human thinking.

Transhumanists strive for the post-human goal of immortality, which can be achieved through the creation of a constructed being that no longer dies, possesses unlimited intelligence, and feels no suffering (Harari 2022: 43). Therefore, this progress in achieving the goal of creating posthuman beings (Kurzweil 2005: 57), the search for morphological freedom (Bostrom 2013: 42) and the abolition of human limitations (More, 2013: 4–5) is governed by one question: how much can natural processes be technically controlled (Sandberg 2013: 56). This thesis is provocative in the context of reviewing the phenomenon of the technological

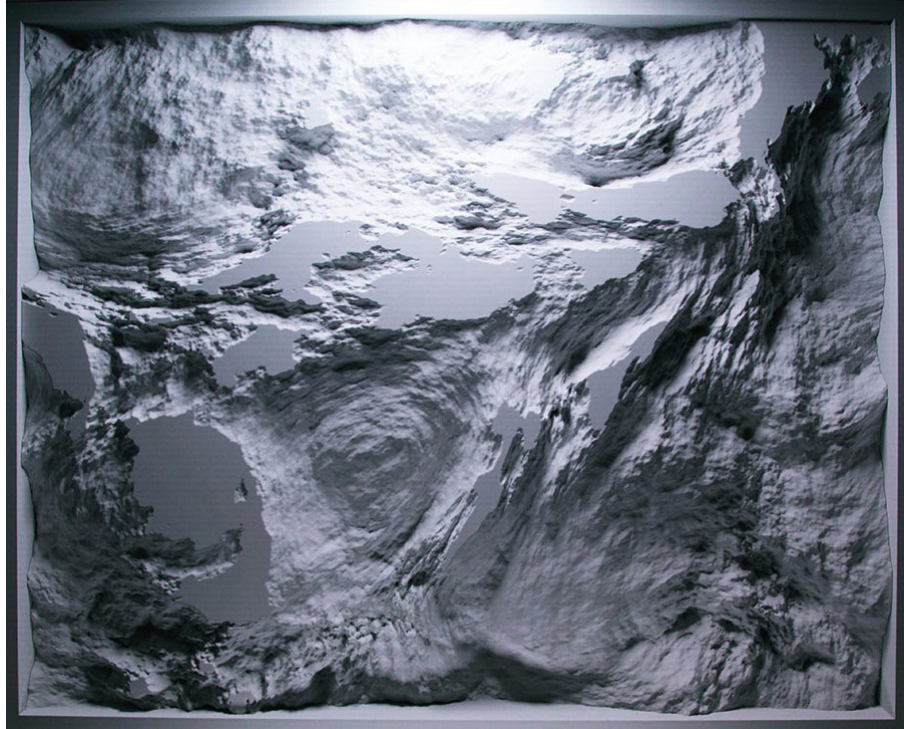


Figure 3. *Melting Memories* (2018, R. Anadol) (University of California, Frankfurt)
(source: created by author)

golem, as it points to the high risk of losing human self-identity and subjectivity. Although philosopher D. Chalmers refers to consciousness as a ‘hard problem’ for artificial reproduction (Chalmers 2007: 225), transhumanists, committed to epistemological certainty, argue that consciousness will eventually become reproducible in environments other than the brain. This will lead to the possibility of ‘uploading’ consciousness into computer systems. Therefore, the possibilities for creating a golem depend on technological progress, the ability to generate a human prototype for production processes and, most importantly, the future prospects for reproducing human consciousness through digital computing. The prospects for an anthropological cyborg golem are promising. Based on this, important questions arise about the identification of human and non-human creativity, copyright protection and subjectivity in the process.

The ‘Creativity’ of AI golems within the Framework of Legal Legislation (Approaches in the EU, US and China)

In April 2021, the European Commission proposed the first EU regulatory

framework for AI. It states that AI systems are analysed and classified according to the risk they pose to users. Different levels of regulation for technological systems are determined according to the identified risk. This thesis becomes very interesting in the context of this study, as it prompts us to reconsider the functioning of modern technological systems as the ‘behaviour’ of monsters capable of harming humans. The regulatory act under consideration resembles instructions for using golems, with rules based on the risk that these technological monsters can pose to humans in the course of their activities. Violation of these rules entails ‘committing a crime’, for which responsibility does not always lie with the developers, but also with the AI system. In particular, Gabriel Hallevy’s theory identifies three legal models of liability: the first places responsibility on the developer (if deliberate intent to commit a crime is found), the second points to natural (probable) consequences (without malicious intent), which places responsibility on AI users and developers if they knew that a criminal offence was a probable consequence of their use or programming. The third is the direct liability model, which directly assigns liability to the AI system if it meets the physical and mental elements of the crime (Hallevy 2010). Thus, the latter points to the subjectivity of AI in the organisation of the production process and raises the question of authorship of the results of the corresponding functioning.

Holding the developer of neural networks used to commit crimes accountable is problematic because “certain technologies used in AI development may have been created many years before the development of such AI” (Gurkaynak et al 2016: 754) and could not have predicted the likelihood of the corresponding results. In addition, the EU resolution emphasises the importance of upgrading the software that controls robotic mechanisms, which “turns them into something more than mere tools and makes the usual rules of liability [...] insufficient” (European Commission 2021). Accordingly, it is proposed to grant the most complex robots the legal status of electronic persons.

Under current US intellectual property law, machines are not recognised as natural persons capable of holding copyright. The US Copyright Office’s Compendium of Practices regulates some of the rules and concepts arising from the above examples of case law. The section of the compendium entitled *Human Authorship Requirement* illustrates the anthropocentric approach to defining copyright, stating that the law recognises “a work of ‘authorship’ [as] a work [that] must be created by a human being. Works that do not satisfy this requirement are not copyrightable” (US Copyright Office 2021: § 313.2).

Similar issues were discussed in the Court of Appeal of the United Kingdom, the South African Court, and the Court of Appeal of Australia in a lawsuit filed by researcher S. Taler to recognise AI as the inventor of a patent (AI cannot be the inventor of a patent, 2021 Court of Appeal decision). The inventor filed patent

applications with the *Intellectual Property Office* in 2018 with the aim of recognising the *Dabus* algorithm as the inventor. The UK Court of Appeal dismissed the claim, stating that the subject of creativity must be a human being (Bonifacic 2021). Judge E. Laing wrote in her decision: “A patent is a legal right and can only be granted to a human being” (Ibid.). Lord Justice Arnold noted: “A systematic reading of the 1977 Act makes it clear that only a human being can be an ‘inventor’” (Ibid.). However, positive decisions in favour of the plaintiff-researcher were made by the judicial panels of the South African Court and the Australian Court (2022). The latter ruled that “Dabus” has the rights of an author and inventor. US District Judge Leonie M. Brinkema partially upheld this decision, writing: “As technology advances, the time may come when artificial intelligence reaches a level of sophistication that will allow it to meet the generally accepted concepts of invention” (Bonifacic 2021). This case demonstrated an excellent understanding of the deterministic role of AI in the organisation of creative activity. On the other hand, the results of AI functioning are devalued in every possible way to enhance the role of humans in the modern process of algorithmic creativity. However, the fact that several court decisions have recognised AI as the author prompts us to reflect on the ability of this technological monster to create a new and unique product. Mythological legend has it that the creator ‘underestimated’ his artificially created golem, for which he paid with his life. Therefore, in this context, it is important to pay attention not only to the rulings that deny the status of author to an artificial intelligence algorithm, but also to examine the few court decisions that recognise its subjectivity (e.g., the *Dabus* algorithm patent).

Given that artificial intelligence creativity mainly results in “imitating human learning and reproduction using data processing algorithms or sets of rules”, the question of the originality of the content in question arises (Ramirez Caminatti 2023: 13). This is evidenced by the class action lawsuit filed by artists S. Andersen, K. McKernan, and K. Ortiz for copyright infringement against Stability AI Ltd., Stability AI Inc. and Midjourney Inc. in accordance with the USC (16 January 2023). According to the text of the lawsuit, the above-mentioned companies “downloaded copies of billions of copyrighted images without permission to create Stable Diffusion” (Andersen & Stability AI Ltd. 2023: 2). Based on the content of *Direct Copyright Infringement* (17 U.S.C. § 106), the *Digital Millennium Copyright Act* (17 U.S.C. §§ 1201-1205), violation of the *Common Law Right of Publicity, Unfair Competition* (§ 17200) and *Declaratory Relief* the artists proved the infringement of their rights (Andersen & Stability AI Ltd. 2023: 2-3).

The European approach to defining subjectivity is illustrated in the *Infopaq* case, as the Court of Justice of the European Union (CJEU) emphasised that copyright applies only to the original work that reflects the author’s personality (Guadamuz 2017). This is evidenced by the *Next Rembrandt project*, which created

a painting that imitates the style of the famous artist Rembrandt van Rijn. In 2016, J. Walter Thompson Amsterdam and ING Bank joined forces to create a painting in the style of Rembrandt using machine learning algorithms (Mezei 2020: 10). “The result was a portrait of a man created using 3D printing technology, which allowed several layers of paint to be applied, imitating Rembrandt’s technique” (Yusa et al. 2023: 156). Therefore, it is difficult to determine the subjectivity of each participant in the process and, in particular, the role of artificial intelligence. Instead, it is worth hypothesising that the author is a collective mind, given that more than twenty data analysts, developers, machine learning and 3D printing specialists, scientists, engineers and art historians from organisations such as *Microsoft*, *Delft University of Technology*, the *Mauritshuis* in The Hague, and the *Rembrandt Museum in Amsterdam*. However, these philosophical definitions are beyond the scope of this study and therefore do not require further detailed consideration.

The Chinese legal system emphasises the importance of agreements in determining subjectivity in AI practice. The *Feilin v. Baidu* case concerned a report created by the *Wolters Kluwer* database and published on the defendant’s platform without proper consent. In order to assess the copyright of the published data, the court, with the consent of the parties, created two other reports using the specified algorithm. The comparison showed that the graphs in the reports differed not in their creative approach, but in the information used to create them. In view of this, the court ruled that the products created were not subject to protection. The above cases demonstrate an anthropocentric approach to the definition of copyright (Kenneth-Southworth & Li 2022: 420), as they take into account the criterion of subjectivity (Wan & Lu 2021). Although the conditions of originality and authorship were separated in the *Feilin v. Baidu* case, the court nevertheless upheld the requirement of human authorship. This may indicate that the Chinese legal system is open to providing copyright protection for AI-generated objects, but with an emphasis on human self-expression (Lee 2021: 211-222).

Thus, in various countries around the world, it has been found that the authorship of human creators is protected, while the ‘creativity’ of artificial golems is mostly perceived as programmed functioning. Only in a few documents have attempts been found to recognise the subjectivity of AI (Halevy’s theory, the court decision recognising authorship in favour of the *Dabus* algorithm) in view of the originality of the results of project activities.

Concluding discussion

The golem has evolved from an image of a defender of the Jewish people and a monster with superhuman physical strength capable of killing its creator to a contemporary and postmodern concept of technological progress that embodies

the fears and uncertainties of the modern era and raises questions about singularity. In this context, everything from transhumanistic artificial cyborgs to anthropomorphic robots, humanoid androids, and post-human digital avatars bears the mystical imprint of an artificial body rebelling madly against its creator. The simultaneous technological perfection and slavish weakness of the golem allow it to take radically opposite subject positions, which can be reinterpreted as needed by the narrator. It can be created as a slave or defender of its creator, or, conversely, as a rebel and murderer with a clearly expressed public position. This explains why he is still popular, appearing in plays, films, illustrations, video games, science fiction stories, etc. Even in the European Commission's current regulatory documents on the implementation of AI, the risks of artificially created systems are being explored, prompting constant references to the mythological golem, which (according to the plot) got out of control and killed its creator.

Hallevy's theory highlights a legal model of responsibility that directly assigns responsibility to the AI system if it meets the physical and mental elements of a crime, thus defining the subjectivity of AI in the organisation of the production process. The facts studied in legally approved decisions on the possibility of recognising AI as an inventor in various countries around the world do not, for the most part, provide sufficient grounds for proper recognition of its authorship. However, several positive court decisions recognising authorship in favour of the *Dabus* algorithm, adopted by the judicial panels of the South African Court and the Australian Court (2022), raise questions about the deterministic role of AI technology in the organisation of creative activity. Therefore, it is worth adding to the conclusions a recommendation to AI implementation specialists to adequately assess the technological functionality of modern golems, without diminishing their significance in exchange for glorifying the role of the human creator. After all, according to the mythological plot, the creator's procrastination led to technological singularity.

Creepy examples of the existence of golems in mythology, scientific and journalistic literature, illustrations, spectacular performances, or modern technological experiments generate a sense of fear, induce cognitive dissonance, and create the uncanny valley effect. The latter serves as a protective reaction of a person to the behaviour of artificial golems. The practices of brain-computer interface functioning that have been examined also did not provide sufficient evidence of the subjective creativity of artificial intelligence. Although the ultimate goal of AI is to imitate human cognitive abilities, it remains spatially and temporally detached, which prevents it from achieving the unique subjectivity that defines human thinking. After all, in such a practice, it will be extremely difficult to identify the creativity of a technological golem and the associated risks. With a malfunctioning BCI, a person can become a monster to themselves. Therefore,

the prospects for the formation of a new golem prototype depend entirely on technological progress and are of particular importance in the context of trends developing in the context of transhumanist ideas. The radical improvement of human physical and intellectual abilities prompts a rethinking of the foundations of human identity and self-awareness, and also provokes discussion about the ethical, philosophical, and social aspects of such changes. As a result, this study makes an important contribution to understanding the complex dynamics between technological innovation, cultural change and philosophical doctrines in the modern world and recommends assessing the prospects for AI development with an emphasis on the issue of subjectivity and control over technology.

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