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LITERARY WORKS GENERATED BY ARTIFICIAL INTELLIGENCE.
METHODOLOGY, ACHIEVEMENTS, DILEMMAS

By trying to approximate the controversial status of the so-called "non-human writer", the present, chiefly theoretical, paper aims to discuss the new understanding of the limited literary creativity made possible by the mathematical algorithms used by AI writing programs, as well as the logical outcome of it, the problem of open vs. obstructed literary or fictional originality. In the actual stage of the research of a field which is by all means exceedingly fascinating, the most challenging issue is related to prediction and probability. It is rather difficult to assess how far AI literary programs can reach and, especially, whether they will be capable to challenge the aesthetic excellency of the professional, recognised writers concerning artistic originality and spiritual deepness. But if we take into consideration Eric von Hippel's "user innovation" formula, which demonstrates that the public success of a given invention or helping tool relies chiefly on the amount of the added creativity provided by the users, and not on the original proposal of the producer, it seems probable that by universally democratising the AI writing models a new understanding of literary creation will emerge, which will probably lead to a new, accepted definition of the writer.

In order to achieve that goal, AI has to overcome certain functional drawbacks induced by its structures of creativity. According to Margaret A. Boden's seminal paper titled *Creativity and Artificial Intelligence*[1], AI has a "synthetic creativity", while human creativity is "transformational", able to generate plots and ideas beyond the already existing structures. A further dichotomy is provided by the "systemic" and "systematic" creativity used by AI, as opposed to the superior, "impulsive" and intuitive creativity which is characteristic to humans. In order to verify the validity of Margaret A. Boden's dissociations, Anil R. Doshi and Oliver Hauser asked an AI generative machine to elaborate a series of short stories and reached the conclusion that

> AI-enabled stories are more similar to each other than stories by humans alone [but] we find that access to generative AI ideas causes stories to be evaluated as more creative, better written, and more enjoyable, especially among less creative writers.[2]

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[1] Margaret A. Boden, "Creativity and Artificial Intelligence", *Artificial Intelligence*, 103, 1998, 1-2, pp. 347-356.
[2] Anil R. Doshi, Oliver Hauser, "Generative AI Enhances Individual Creativity but Reduces the Collective Diversity of the Novel Content", *Science Advances*, 10, 2024, 28, p. 1.

Their experiment also concluded with a certain paradox, called by the authors "a social dilemma": "with generative AI, writers are individually better off, but collectively a narrower scope of novel content is produced"[3].

Starting from here, the main, obviously arguable prediction of my paper (it can't be otherwise, because we talk, for the moment, only about hypotheses reserved to the future) is that AI will have a huge impact in recuperating a so-called individual and collective "residual" creativity, and will largely contribute to the diversifying of literacy through creative networks. It is also possible that the emergence of AI literary intelligence will lead to a prolonged professional tension, already visible inside human literary communities. We might also assume that the AI programs will be sufficiently "wise" to overcome the obstruction, this resulting in a new type of technological humanism. But in order to identify the path to it, we have to go back to the basic definitions.

The syntagma "artificial intelligence" has raised a lot of polemics, and the great majority of the disputants – not all, if we consider Kate Crawford's argument that "AI is neither artificial, nor intelligent"[4] but embodied and material, made from natural resources, not autonomous and incapable to discern anything without computationally intensive training, dependent on political and social structures – tend to agree with the use of the term "artificial". The second part of the syntagma, "intelligence", causes many controversies and ambiguities whose main reason consists in the wide range of mental activities described by it, such as learning (understood as the ability to acquire and process new information), reasoning and manipulation of information decanted from the ability to discern falsehood from truth, or what is true from simple opinion, and the skill to orient data towards the most suitable network.

While Artificial Intelligence (henceforward: AI) can indeed reproduce the sequential phases of human thinking – that is: establish goals, evaluate existing information and complete it with further details; interrelate data, evaluate the progress of the whole process by comparing it with its initial purpose and even modify that goal in order to meet ongoing, new requirements generated within the process –, it cannot replicate the full range of thinking typologies of the human brain. It is interesting to note that the compatibility inventory listed by John Paul Mueller and Luca Massaron in their book *Artificial Intelligence for Dummies*[5], devised to detect which specific type of human intelligence can be *simulated* (this is the authors' key word) by AI, asserts the highest degree of simulation capability to be logico-mathematical thinking, further indexes run as follows: *moderate* to

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[3] *Ibidem.*

[4] Kate Crawford, *Atlas of AI. Power, Politics, and the Planetary Costs of Artificial Intelligence*, New Haven and London, Yale University Press, 2021, p. 8.

[5] John Paul Mueller, Luca Massaron, *Artificial Intelligence for Dummies*, Hoboken, New Jersey, John Wiley & Sons, Inc., 2018, pp. 9-11.

high in the case of corporeal-kinesthetic intelligence; *low* to *moderate* regarding interpersonal connectivity; *low* concerning linguistic communicability, while the simulation standards for intrapersonal skills and for creative intelligence are practically non-existent.

Ideally speaking, the stage of singularity[6] (the anxiogenic concept induced by the fear that there is a future where AI will take over completely by controlling humans and subsequently by replacing them) could be attained by bringing together the learning technologies and strategies of the five Artificial Intelligence "tribes" existing so far: the *Symbolists*, oriented towards logic and philosophy, relying on the reversed deduction in solving problems; the *Connectionists* of neuroscience, based on reverse programming; the *Evolutionaries*, fans of evolutionary biology, that rely on genetic programming[7], the *Bayesians*, adepts of statistics whose work is based on probabilistic interferences, and the *Analogizers*, deriving from psychology and relying on KVM (Kernel-based Virtual Machine) models in fixing their issues[8]. However, in spite of attempts to classify the actual landscape of AI typology, it remains rather blurry, mainly because of the domestic uncertainties and disagreements within the domain.

Unlike AI's strictly rationalistic approach, which provides a correct reproduction of an existing piece information by starting from the assumption that the given information is indisputably correct, human creativity deploys subtler features like instinct, intuition, the recognition of untruth etc. In their book, *Artificial Intelligence for Dummies*, written also, among other reasons, in order to assure the readers that the advent of AI poses no reasons for anxiety about its replacing humans, John Paul Mueller and Luca Massaron provide an inventory of those human traits, like interpersonal affinity, creativity or intuition, which seem to stay immune to the conquest of AI. A further list of domains includes, among others, education, invention, imagination, intuition, decision making, the capacity to discern between reality and fiction, as well as artistic creativity, although the authors admit that AI can be superior to humans with respect to the accuracy of handling artistic patterns[9].

Rather unsurprisingly, creativity continues to be the central issue of the debates related to the limitations of AI. The most frequent argument is that in spite of the exponential number of books, articles, pieces of music, paintings and other similar "creative" products generated so far by AI, it remains unable to create

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[6] The creation of a Master Algorithm capable to learn everything.

[7] Usually, this type of programming consists in altering inappropriate programs by using operations inspired by the genetic selection within the natural world. Practically, it is about creating mutations by replacing different sequences of a program with improved selections which will be applied afterwards to other programs.

[8] See Mueller, Massaron, *Artificial Intelligence*, p. 19.

[9] See *Ibidem*, pp. 271-277.

something completely original, out of nothing and personal, because when we speak about creativity, we think about those irreconcilable human patterns of thinking and style which provide uniqueness to an author, and to his or her original signature. While AI can indeed develop new creative works based on mathematical patterns intrinsic to its program, mathematics as such will never equal human creativity because, in order to be creative, one has to elaborate a peculiar way of thinking, a never seen before pattern of judgement and a distinctive, personal perspective, all of them inaccessible to AI, whose creative powers are restricted to the pre-ordained variations incumbent to its database.

Another controversy raised by the literary pieces generated by AI is related to the faculty of imagination. For the purists, it is the exact faculty, including the ability to transcend reality, which indeed separates us humans from everything non-human. In sharp contrast, AI is preconditioned by reality, which also explains several theorists' reluctance to accept the probability of an AI entity endowed with imagination[10]. Further, the opposition between the typically emotional manifestation of human imagination and the emotional neutrality of the machine does nothing more than deepen the antinomy.

By reconsidering the everlasting question "Can machines think?"[11], Alan Turing's 1950 work titled *Computing Machinery and Intelligence* proposes the now famous "Turing Test", based on an "imitation game" played by three participants, a *machine*, as Turing called it (later to become a computer or AI), a *human being*, both supposed to answer a specific set of questions, and a *judge* required to determine in the end which of them is human. According to the British scientist, the best strategy of the machine in order to win the game would be to provide the kind of answers naturally given by humans, although he admits that the machine might try purposefully *not to imitate* human behaviour. If the *judge* fails to determine systematically which one of the two questioned subjects is a human being – in other words, if the machine deploys a behaviour that cannot be distinguished from a specifically human behaviour – it is generally considered that the test was clear. Turing also predicted that this will turn into complete certainty at a given moment of the future:

> I believe that in about fifty years' time it will be possible to programme computers, […] to make them play the imitation game so well that an average interrogator will not have more than 70 per cent chance of making the right identification after five minutes of questioning. The original question "Can machines think?" I believe to be too meaningless to deserve discussion. Nevertheless I believe that at the end of the century

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[10] *Ibidem*, p. 227.
[11] A.M. Turing, "Computing Machinery and Intelligence", *Mind*, LIX, 1950, 236, pp. 433-460.

the use of words and general educated opinion will have altered so much that one will be able to speak of machines thinking without expecting to be contradicted[12].

In order to defend his opinion Turing listed and deconstructed a wide range of significant objections related to AI, starting with the so-called *Theological Objection*, which says that "thinking is a function of man's immortal soul"[13], given to him by God, and "hence no animal or machine can think"[14]. Remaining inside the theological discourse, Turing argued that the decision to give birth to AI resembles the act of procreation, implicitly meaning that it doesn't usurp at all the demiurgic privilege of creation attached to the Divine.

The next dilemma is the so-called *"Head in the Sand" Objection*, based on the assumption that a thinking machine (or machine thinking) are undesirable because of their dreadful consequences. Derived from the previously mentioned *Theological Objection* and sustained by the belief that "we like to believe that Man is in some subtle way superior to the rest of creation"[15], the *"Head in the Sand" Objection* suggests that the very existence of AI is a threat by itself, which turns this argument into a poison container for many freaky cinematographic scenarios.

By leaping over the so-called *Mathematical Objection*, sustained by the idea that a machine is predetermined by the intrinsic limitations of its program and language, Turing got to one of the most problematic dilemmas linked to the creation of AI: *Consciousness*. In order to answer it he relied on one of his trustful opponents, Prof. Jefferson Lister, who had argued that

> no mechanism could feel (and not merely artificially signal, an easy contrivance) pleasure at its successes, grief when its valves fuse, be warmed by flattery, be made miserable by its mistakes, be charmed by sex, be angry or depressed when it cannot get what it wants[16].

Turing counterattacked by recalling that emotions are solipsistic in nature, which means that none of us can experience somebody else's emotions. Further on, on reaching the so-called *Argument from Various Disabilities*, an objection imposed by the laws of exceptions – like

> a computer will never be/do something, no matter what this something is (be kind, beautiful, friendly, have initiative, have a sense of humour, tell right from wrong, make mistakes, fall in love or make someone fall in love with it, learn from experience, use words properly, be self-aware, have as much diversity of behaviour as a man, do something really new)[17]

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[12] *Ibidem*, p. 442.
[13] *Ibidem*, p. 443.
[14] *Ibidem*.
[15] *Ibidem*, p. 444.
[16] *Ibidem*, p. 446.
[17] *Ibidem*, p. 447.

Turing simply dismissed it by saying that it was irrelevant, especially when we take into consideration the future evolution of technology.

There is also a so-called *Lady Lovelace's Objection*, formulated by Lady Ada Lovelace in her memoirs of 1842, which says that "the Analytical Engine has no pretensions to originate anything. It can do whatever we know how to order it to perform"[18]. To formulate it differently: any machine lacks originality and the knowledge of independent learning. By reducing the objection to the logical sentence saying that a machine "can never take us by surprise"[19], Turing asserted that, on the contrary, a computer could take humans by surprise.

Turing's series continued with an *Argument from Continuity in the Nervous System*, an irrefutable biological argument according to the scientist's belief, but which could be overcome by simulation. Then we have *The Argument from Informality of Behaviour*, based on the opposition between predictability and intelligence, and *The Argument from Extrasensory Perception*, a domain liminal to esotericism, as it involves telepathy, clairvoyance, precognition and psychokinesis, but which was, during Turing's lifetime, nothing more than a topic for sensationalist and evasive research.

Turing predicted that in a future which was not far – he imagined it to arrive around the end of the 20th century – it would be possible to create a machine fully prepared to clear the "imitation game". He imagined that it would be the outcome of a process similar to that described by the theory of evolution:

> In the process of trying to imitate an adult human mind we are bound to think a good deal about the process which has brought it to the state that it is in. We may notice three components. (a) The initial state of the mind, say at birth, (b) The education to which it has been subjected, (c) Other experience, not to be described as education, to which it has been subjected[20].

As a consequence, Turing envisioned the creation of computer programs capable of reproducing the brain of children, not of adults, ready to modulate, to ingest education and to achieve self-improvement. In other words, Turing's proposal to create a *child machine* emerges from the hypothesis that the process of reaching a perfect machine is similar to human evolution by natural selection, the machine carrying in its tissues data similar to heredity and mutations.

The most provocative aspect of Turing's hope theory remains the hypothesis of an autonomous, self-improving AI. By reviewing the post-Turing debate dedicated to this subject, John Storrs Hall concluded that

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[18] *Ibidem*, p. 450.
[19] *Ibidem*.
[20] *Ibidem*, p. 455.

a theoretical, ultimately rational machine would predict the results of its actions and pursue the optimal course constantly. It would be endlessly creative, never having to rely on habit or arduously learned skills[21].

However, he did not consider that, for the moment at least, the role of humans is challenged by the advancement of machines. Nevertheless, if we take into consideration titles like *A Mayday Call for Artificial Intelligence*[22], generated by Geoffrey Hinton's recent (2023) resignation from Google (Hinton is a Turing Award winner in 2018 and a Nobel laureate in Physics in 2024, being generally considered the "Godfather of AI"), we have to admit that, for the moment, the international debate raised by the perspective of a self-improving AI is mainly dominated by anxiety, because the offensive exercised by AI raises serious concerns about the replacement of human labour force within the economy, or the fabrication of *fake texts* or *fake news* within the media, opening wide the gates to a new era of information manipulation.

According to the same Geoffrey Hinton[23], the paradigmatic discourse related to AI will inevitably change in the future by re-evaluating the way we are treating the risks now. Hinton's position is fairly nuanced: by starting from the assumption that humans tend to anthropomorphize technology[24], thus generating surreal expectations related to AI, he admits that AI could attain indeed a level of intelligence which is superior to what humans are capable of, but in this case – as Turing had anticipated – we speak about a type of intelligence which is completely different from the intelligence of humans. Speaking about the AIs based on linguistic models, like ChatGPT, which is able to write texts akin to those written by humans, including their free associations and hallucinations, Hinton says that when comparing human intelligence to AI, the recorded text similarities remain completely inconclusive because the generating process is different, as ChatGPT processes huge amounts of existing texts in order to predict the next word in a sentence. Anyway, Ilya Sutskever, the co-founder of OpenAI, the organisation that runs ChatGPT, was Hinton's disciple.

It is precisely the quantity of processed information which makes the most striking difference between AI and humans, not to forget the speed by which AI assembles data and patterns of information. On the other hand, humans rely on

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[21] John Storrs Hall, "Self-improving AI: An Analysis", *Minds and Machines*, 2007, 17, p. 257.

[22] Gary Grossman, "A Mayday Call for Artificial Intelligence", *VentureBeat*, 2023, May 7, https://venturebeat.com/ai/a-mayday-call-for-artificial-intelligence/. Accessed May 3, 2024.

[23] Will Douglas Heaven, "Geoffrey Hinton Talks about the 'Existential Threat' of AI", *MIT Technology Review*, 2023, May 3, https://www.technologyreview.com/2023/05/03/1072589/video-geoffrey-hinton-google-ai-risk-ethics/. Accessed May 3, 2024.

[24] A similar idea is heralded by Nir Eisikovits, "AI Isn't Close to Becoming Sentient – the Real Danger Lies in How Easily We're Prone to Anthropomorphize It», *The Conversation*, 2023, March 15, https://theconversation.com/ai-isnt-close-to-becoming-sentient-the-real-danger-lies-in-how-easily-were-prone-to-anthropomorphize-it-200525. Accessed May 3, 2024.

intuition, common sense and logical thinking, especially when we refer to the probability index of several occurrences. It also remains surprising that Hinton favours humans when talking about energetic efficiency, by considering that the AIs, as extremely powerful computers, consume far more energy than the humans do, who, to quote him, "can imagine the future […] on a cup of coffee and a slice of toast"[25].

The literary works generated by AI represent a bet with the future, but there are already a few notorious achievements, like *1 the Road* (2017), a replica of Jack Kerouac's famous *On the Road*, or the gibberish texts, lacking any grammatical or ideological meaning, entitled *The Serious: A Proven Divorce* (2019), generated by the *char-rnn-tensorflow* linguistic module. We even have a Sci-Fi eschatology model about the way AI could destroy the world, titled *50 Ways AI Would End the World*, by far more intriguing being the AI self-analysis in *The Inner Life of an AI: A Memoir* (2022).

Concerning the institutional recognition of the literary products generated by AI, a pioneering example could be the Japanese experiment in 2015, entitled *The Day a Computer Writes a Novel*, consisting of two parallel "literary" texts, the already mentioned novel and a story entitled *My Job*, generated by the *GhostWriter* system. The texts were entered into the competition for the *Hoshi Shinichi Prize*, which also accepts "non-human writers". In order to qualify, a literary text must be written in Japanese and it mustn't exceed 10.000 characters, approximately 4.000 words in English.

The Day a Computer Writes a Novel opens like this:

> The clouds hung low that day in an overcast sky. Inside, though, the temperature and humidity were perfectly controlled. Yoko was sitting lazily on the couch, passing the time playing pointless games[26].

It is a fragment from a text which was not modified while being generated, but its preparation required a series of essential components: a *story grammar*[27], a set of

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[25] Will Douglas Heaven, "Geoffrey Hinton Tells Us Why He's Now Scared of the Tech He Helped Build», *MIT Technology Review*, 2023, May 2, https://www.technologyreview.com/2023/05/02/-1072528/geoffrey-hinton-google-why-scared-ai. Accessed May 2, 2024.

[26] See Satoshi Sato, "A Challenge to the Third Hoshi Shinichi Award", in Matthew Purver, Pablo Gervás, and Sascha Griffiths (eds.), *Proceedings of the INLG 2016. Workshop on Computational Creativity in Natural Language Generation*, Edinburgh, Association for Computational Linguistics, 2016, p. 31.

[27] The story grammar is an augmentative, piece of grammar devoid of any context, where a story outline is encoded. Accordingly, a non-terminal symbol is linked to a textual unit such as a section, a paragraph or a proposition, each terminal corresponding to an internal representation of a textual fragment which is usually a proposition or a clause. Starting from a non-terminal symbol, the grammar generates a derivation tree, which represents a concrete text structure enough to produce the corresponding surface string. That is a text plan. Within the process of derivation, further parameters are added in order to translate the information from one symbol to another.

text fragments and a set of *configuration programs*, the goal being to produce a text whose artificial origin cannot be detected by the readers, thus clearing the criteria of the *Turing Test*. Using the first person singular, *The Day a Computer Writes a Novel* prioritizes the way a text is written (the *how* factor), and not its content (the *what about it* factor).

Satoshi Sato, the Vice Division Manager at Rakuten Mobile, Inc. revealed the gradual synopsis of executing the whole work. It started with a sample story generated by the machine, then this was decomposed into several fragments and submitted to a recursive procedure, which issued the structure and the frame of the story. Afterwards rules were applied, and new fragments added in order to gain a plain text, by allowing the machine to generate a narrative, a story. The rules and fragments were consequently repeatedly re-written in order to enhance a large variety of textual derivatives. Then the parameters controlling the applications and the content selection were added. In order to obtain a coherent plot, further configuration programs were then introduced, followed by a return to stage 4, that is the writing of the rules and of the text fragments in order to enlarge text variations that system can generate, to get an enhanced discourse.

A replica to Jack Kerouac's famous novel *On the Road*, the travel narrative *1 the Road* (2017) is an unedited experiment completed by Ross Godwin, who was fully aware that he was operating with a new frontier lacking any theoretical support, as he decided to use a self-learning machine able to record random letters and punctuation. The machine learned words, grammar and how to create ideas by taking a look at what real writers usually do, but its performance did not match human creativity. When trying to label the AI performance, Ross Goodwin's analogy referred to some sort of brain of an insect learning to write.

The starting frame of the experiment consisted in a road narrative written by a car which functioned as a typewriter, while the coherence and the continuity of the story were provided by the journey itself. In order to complete the work, Ross Goodwin took a four-day highway journey from New York down to New Orleans, equipping his car, a Cadillac provided by Google, with an AI system, precisely with a LSTM (Long Short-term Memory), a RNN (Recurrent Neural Network) used in AI and for learning, able not only to process individual items but also to record longer sequences, including discourses, which made it ideal for processing and predicting data[28]. A normal LSTM unit is composed of a *cell*, an *input gate*, an *output gate* and a *forget gate*. The *cell* controls the random temporal values, while the three other portals fix the flux of information entering or leaving the *cell*. The *forget gate*, operating by a Boolean algebra syntax (where 0 is for discarding

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[28] Because of the potential lack of synchronicity among the important data of a temporal series, the LSTM networks can generate, classify and process predictions based on these data. In the translation programs they are used to recognize hand writing, speech etc.

information, and 1 is for storing it) determined which previous information could be deleted. Based on a similar logic, the *input gate* determined which new information must be stocked, while the *output gate* regulated the outgoing data. The selective input of information allowed the LSTM network to maintain long-term, useful dependences and to make predictions.

Ross Goodwin connected the AI to the car surveillance camera in order to record the places he visited, to a microphone to fix the conversations inside the car (he didn't travel alone), to the GPS in order to register the latitude and longitude, mentioned on a regular basis in the book, and finally to the internal clock of the computer, all the data picked up by the sensors being transformed into words and sentences whose meaning proved to be variable. He added twenty thin paper rolls, similar to those used in shops, able to store one million words, meaning that, according to Goodwin, when he finished the work he obtained the longest novel ever written in English.We might wonder, of course, whether the rolls of paper were dictated by practical reasons, or if they represented an indirect tribute to Jack Kerouac, because, as everybody knows, the manuscript of the novel *On the Road* was written not on regular sheets of plain paper, but on a famous, 37 meter long "scroll". Goodwin also attached to his replica a program able to sort the fiction into three different pools of texts – poetry, Sci-Fi and *bleak literature* – each of them of approximately 20 million words. Printed in 2018 by Jean Boîte Éditions as it was, that is without later corrections or inserts, precisely in order to indicate that the text generated by AI was genuine, written by a non-human author, *1 the Road* enjoys a plausible opening: "It was nine seventeen in the morning, and the house was heavy"[29]. Another passage sounds like this:

> Three seconds after midnight. Coca-Cola factory, Montgomery. A building in Montgomery to his father's study of this town in the same room where the band was being sent off to the police car. The time was one minute past midnight. But he was the only one who had to sit on his way back. The time was one minute after midnight and the wind was still standing on the counter and the little patch of straw was still still and the street was open[30].

Thomas Hornigold's review, under the title "The First Novel Written by AI Is Here – and It's Weird as You'd Expect It to Be", concluded abruptly: "While experimentation in literature is a wonderful thing, repeatedly quoting longitude and latitude coordinates verbatim is unlikely to win anyone the Booker Prize"[31].

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[29] See Joseph Wilson, "Artificial Communication", *American Scientist*, 111, 2023, 2, p. 69.

[30] Ross Goodwin, *1 the Road*, apud Debarshi Arathdar, "Literature, Narrativity and Composition in the Age of Artificial Intelligence", *TRANS – Revue de littérature générale et comparée*, 2021, 21, p. 7.

[31] Thomas Hornigold, "The First Novel Written by AI Is Here – and It's as Weird as You'd Expect It to Be", *SingulatyHub*, 2018, October 25, https://singularityhub.com/2018/10/25/ai-wrote-a-road-trip-novel-is-it-a-good-read/. Accessed May 4, 2022.

A film uploaded on YouTube presents the whole experiment. In "Automatic *On the Road*: Gonzo AI Robot Writes Road Trip Novel", we can watch and hear Ross Goodwin say: "I'm not a poet! I'm a creative technologist, hacker, Gonzo Data scientist, Artificial Intelligence expert"[32]. Goodwin was President Obama's political *ghost writer*. His ambition of becoming a writer and his passion for computers made him upload his most beloved books and watch how the programs learned to write by imitating his favourite writers' styles. Speaking about his incipient experiments, he labelled them "intoxicating", an addiction that might be explained by his strong belief that technology has always been an intrinsic part of our being, from the discovery of fire to the invention of spectacles. As such, AI is nothing more than the last epiphany of this sort of communion. He kept saying that the technological history of mankind has always been augmentative when it involved humans, and not aggressive towards them, as imagined by those who nourish technophobia. It also becomes obvious that Goodwin's literary experiment was intended to challenge technophobia by suggesting that the game of the future consists in collaboration between humans and AI, not in a game of substitution. He has always believed that AI functions as some sort of "companion" to humans, which knows them better than anyone and helps them create according to their enhanced needs, but in a way structurally inaccessible to them, because it remains alien to their anatomical being. In other words, AI is a technical device meant to help humans transcend their limitations.

The phrase "Gonzo Data", used by Ross Goodwin, is a hidden tribute to the Counterculture of the Sixties. By 1970 Hunter S. Thomson defined "Gonzo journalism" as that style of press publication in which the author is also the protagonist of his story. Accordingly, he becomes part of the action and functions both as an author and as the most reliable witness of the happening. The authenticity of the written truth delivered to the readers is guaranteed by the most personal of the experiences possible, which also means that distant objectivity ceases to be the prerequisite of the truth, everything being taken over by subjectivity, including the style. Opposed to empirical knowledge and its will to legitimize what is happening, Goodwin's "Gonzo data science" projects humans in a flux of "defamiliarization" (estrangement), a literary device coined by Viktor Shklovsky, as it presents something which is human from a fundamentally non-human perspective, in a way completely estranged from human interiority.

1 the Road was not the first experiment of this kind done by Ross Goodwin[33]. He used to rely regularly on ANN (Artificial Neural Networks), another result

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[32] See Lewis Rapkin (dir.), "Automatic *On the Road*: Gonzo AI Robot Writes Road Trip Novel", 2018, https://www.youtube.com/watch?v=TqsW0PMd8R0. Accessed November 25, 2024.

[33] Another process generated exclusively by the AI was *The Serious: A Proven Divorce* (2019), done by the char-rnn-tensorflow linguistic module which resulted in a text block with no grammatical or ideological sense.

being a short film entitled *Sunspring*. Goodwin's dissertation, presented to the New York University under the title *Narrated Reality*, was based on the amount of data gathered while he wandered through the city armed with a compass, a watch and a camera. By filtering the registered data through a Neural Network he obtained a kind of beautiful, but strangely associative poetry. With this and with ChatGPT (Generative Pre-trained Transformer model) and other generative IA, the poetry-writing machine imagined in 1964 by Stanisław Lem in his short story *Trurl's Electronic Bard* becomes reality.

It is a fact that machines are able to reproduce complex linguistic patterns in a better way and more rapidly than humans do, but they are able neither to feel what lies behind these patterns, nor to draw specific literary details such as a plot or a protagonist. Similarly, they cannot grasp the significance of the narrative, and must be helped by humans to keep narration cohesive. Therefore, the collaboration between AI and humans continues to be a necessity, chatbots[34] doing nothing more than simply assisting humans. The most radical approach related to AI and to its alleged infinite capabilities belongs to the famous Noam Chomsky, who, in an intervention published in *The New York Times* did not hesitate to underline:

> The human mind is not, like ChatGPT and its ilk, a lumbering statistical engine for pattern matching gorging on hundreds of terabytes of data and extrapolating the most likely conversational response or most probable answer to a scientific question. On the contrary, the human mind is a surprisingly efficient and even elegant system that operates with small amounts of information; it seeks not to infer brute correlations among data points but to create explanations. […] Let's stop calling it "Artificial Intelligence" then and call it for what it is and makes "plagiarism software" because it doesn't create anything but copies existing works of existing artists, modifying them enough to escape copyright laws[35].

If you want to understand how really difficult it is to write a novel using AI, you can even find Internet guides like "How to Use ChatGPT to Write a Novel", written by Derek Slater in a style similar to that used in commercials, full of attractive promises and disputable perspectives on the subject:

> Are you a writer looking to up your productivity and get some help with your novel? Look no further than ChatGPT! This program helps you take your writing to the next level. Not only can it assist you with generating ideas and suggestions, but it can also help you write more efficiently. In this article, we'll explore the many ways ChatGPT

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[34] The chatbots are not a recent invention. The first chatbot, called ELIZA, was created by Joseph Weizenbaum in 1966.

[35] Noam Chomsky, "The False Promise of ChatGPT", *The New York Times*, 2023, March 8, https://-www.nytimes.com/2023/03/08/opinion/noam-chomsky-chatgpt-ai.html. Accessed May 5, 2024.

can help you write a novel, from generating descriptions to writing dialogue and crafting scenes. So, sit back, grab your keyboard, and let's get writing![36]

It remains nevertheless essential to understand that it will be a mere *collaboration* between a human and a computer, and not something exclusively artificial, done by AI. Therefore, the guide is full of well-known *creative writing* advice like "Avoid too much explanation. Avoid including too much explanation in the scene, as this can slow down the pace and detract from the action"[37].

According to the guide, even though ChatGPT is unable to *plan* a narrative, which means that the sketching of the plot, the delineation of the protagonists and of the settings must be drawn by humans, it can help to improve ideas, to fill gaps and to elaborate certain particular events. In turn, ChatGPT becomes responsible for key techniques such as narrating episodes or rewriting them repeatedly into different, alternative versions, including dialogues. It can even execute bizarre requirements like "write a scene where the werewolf meets Santa Clause at McDonald's"[38]. ChatGPT can also generate dialogues or descriptive passages, as it is efficient in grasping sensorial details and in creating vivid, less stereotypical descriptions, but it can also help edit the text grammatically and stylistically. In spite of all this, humans must intervene in issues like creativity and traditional thinking, as well as in shaping the written text into its final form.

An alternative solution to the question of artificial creativity and efficiency belongs to Tim Boucher, a Sci-Fi author who used AI generators including ChatGPT and its rival CLAUDE, developed by Anthropic, to write and illustrate, within less than nine months, 97 novels with interconnected narratives. Each book is about 5.000 words long, while the number of illustrations varies from 40 to 140. It took Tim Boucher approximately six to eight hours to complete a single book. He set them typologically in the tradition of the famous instalment novels hosted by the press at the end of the 19th and the beginning of the 20th centuries, hoping that their success was guaranteed by the readers' eternal taste for fictional realities.

Labelled *The AI Lore Books* (a rather ironic title, as there is nothing traditional or dusty in a book conceived by AI), the novels represent, according to their author, "a testament to the potential of AI in augmenting human creativity"[39]. It's impossible not to notice that the assertion targets the last wall of those who defend the castle of human superiority in the fight against AI: creativity. In spite of all

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[36] Derek Slater, "How to Use ChatGPT to Write a Novel", *GripRoom*, 2022, January 31, https://www.griproom.com/fun/how-to-use-chat-gpt-to-write-a-novel#google_vignette. Accessed: May 3, 2024.

[37] *Ibidem*.

[38] *Ibidem*.

[39] See Aly Grant, "Author Uses AI Generators including ChatGPT to Write Nearly 100 Books in Less than a Year", *New York Post*, 2023, May 23, https://nypost.com/2023/05/22/author-uses-ai-generators-including-chatgpt-to-write-nearly-100-books-in-less-than-a-year/. Accessed May 25, 2023.

these fears, Tim Boucher refuses to admit that AI could become a threat to human creative work, and insists that it will limit itself to the tasks of an assistant, functioning as a powerful helping tool by which human abilities can be enhanced and accelerated.

The book market for this type of products is obviously in full swing, as shown by the fact that only in February 2023 more than 200 titles co-authored by ChatGPT were released. It means that a great number of writers rely on AI, making A.O. Scott to perceive it

> as the latest iteration of an ancient literary conceit: the fantasy of a co-author, a confidant, a muse — an extra intelligence, a supplemental mental database. Poets and novelists once turned to séances, Ouija boards and automatic writing for inspiration. Now they can summon a chatbot to their laptops[40].

One of these authors is Stephen Marche. Publishing under the pen name Aidan Machine at Jacob Weisber's behest (Weisberg is the CEO of Pushkin Industries), he produced a mostly chatbot written (by ChatGPT, Sudowrite and Cohere), gruesome novella entitled *Death of an Author*, a murder mystery described by Dwight Garner as "arguably the first halfway readable AI novel."[41] The plot revolves around the death of an author, which shocks the literary world because the mysterious deceased is Peggy Firmin, a Canadian author associated with the billionaire Neal Gibson in order to complete an AI project. (The partner's name is a subtle tribute to two well-known Sci-Fi writers, *Neal* Stephenson and William *Gibson*.) The funeral participants listen to an Agatha Christie-type eulogy presented by an avatar of the dead author, which leads to a vivid controversy related to the identity of the hypothetical killer, a controversy augmented, when manipulated by AI, into an exciting debate about what a killer or an author must really be in our digital era blessed by technology. Obviously, these kinds of odd obituaries are far from being a novelty if we take into consideration the famous serial pattern starting with Samuel Richardson's weird farewell and ending with Theodor Adorno's, but, as the text seems obliged to remark, "ChatGPT has given many authors a case of the dreads. Its presence has crawled like a tumour through the spine of their other abiding freakouts"[42]. As a consequence, the urge "Go, hug a writer" becomes not at all gratuitous for those who adore morbid hypotheses. But Dwight Garner's playful apocalypse will stay uncompleted as long as critics

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[40] A.O. Scott, "Literature under the Spell of A.I. What Happens when Writers Embrace Artificial Intelligence as Their Muse?", *The New York Times*, 2023, December 27, https://www.nytimes.com/2023/12/27/books/review/writers-artificial-intelligence-inspiration.html. Accessed March 3, 2024.

[41] Dwight Garner, "A Human Wrote This Book Review. A.I. Wrote the Book", *The New York Times*, 2023, May 1, https://www.nytimes.com/2023/05/01/books/aidan-marchine-death-of-an-author.html. Accessed March 3, 2024.

[42] *Ibidem*.

continue to believe that an AI writer will never substitute a real one because the former does not have a soul.

I cannot finish my paper without mentioning the reactions of repudiation and negation, especially when some of them are concerted, as it happened with the sharp critical campaign targeted against *Alice and Sparkle*, a book for children co-authored by Ammaar Reshi. Other negative reactions rest on principles. We could mention the relatively recent Writers Guild of America reaction against AI, or the rage of certain writers who watch their work become raw material for ChatGPT and other similar platforms that reshape them into poems, novels or critical commentaries. On the other hand, there are also writers like Salman Rushdie or Bob Dylan who believe that, no matter what AI does, their work cannot be fully replicated.

To end, I believe that the future of literature will have two portals, one belonging to human authorship and the another explored by authors that are not human. Since we all agree that everything from now on is nothing less than eschatology, we have to conclude that Dwight Garner was probably right in his premonitions. A type of author will certainly die in the near future, but only the God of writers knows whether they will be human or non-human.

My critical approach resembles the conclusion already mentioned, drawn by Anil R. Doshi and Oliver P. Hauser in their paper. The clever use of generative AI will certainly contribute to "an increase in individual creativity", but it will also contribute to widely accepted structural limitations as a result of topic and content repetition. It might be possible that in the near future literary evaluation and criticism will be overcome by statistical technicalities, which will replace intuitive comprehension and interpretation. Another dilemma is voiced in David De Cremer, Nicola Morini Bianzoni and Ben Falk's "How Generative AI Could Disrupt Creative Work"[43], a paper in which the authors discuss the great number of copyright infringements and lawsuits caused by the excessive and unauthorized use of literary sources implanted in the AI writing programs. It's beyond any doubt that the lawyers will do their proper work, the authors say, but we can also imagine that the social and professional turmoil generated by this legal effervescence, converted into a social "show", will turn the balance between human and artificial creativity upside down. It's possible that, in the near future, we may look at artificial creativity as some sort of norm and downgrade its human counterpart to the level of anomaly.

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[43] David De Cremer, Nicola Morini Bianzoni, Ben Falk, "How Generative AI Could Disrupt Creative Work", *Harvard Business Review*, 2023, April 13, https://hbr.org/2023/04/how-generative-ai-could-disrupt-creative-work. Accessed October 31, 2024.

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LITERARY WORKS GENERATED BY ARTIFICIAL INTELLIGENCE. METHODOLOGY, ACHIEVEMENTS, DILEMMAS
(*Abstract*)

The literary works written by Artificial Intelligence represent a bet with the future, but there are already a few notorious achievements in the field whose number keeps growing, along with the increasing amount of questions and dilemmas generated by the phenomenon, divided, for the moment, between the utopian belief of those who hope that AI "authorship" will be endowed with limitless creativity and the rational scepticism of those who believe that AI creation is actually predetermined by the intrinsic limitations induced by the programming mathematics or the computing logarithms. The list of the literary works generated by ChatGPT or RNN (Recurrent Neural Network) is constantly diversifying, covering a quite surprising area of topics, from *1 The Road* (2017), a computerised rewriting of the famous novel *On the Road* belonging to Jack Kerouac, to *The Serious: A Proven Divorce*, a hybrid, nonsensical text generated in 2019 by the linguistic model *char-rnn-tensorflow*. We even have a Sci-Fi eschatology model about the various ways Artificial Intelligence can finish our lives (*50 Ways AI Would End the World*), while another intriguing scenario is *The Inner Life of an AI: A Memoir* (2022), about the subtle way Artificial Intelligence submerges into its subconscious in order to perform a self-analysis. My paper focuses on technicalities, controversies and validations issued by the classical criteria of the famous "Turing Test", several of them being recalled in *The Day a Computer Writes a Novel*, a famous Japanese experiment completed in 2015, which summarizes the adventure of asking a system named *GhostWriter* to write two literary texts subsequently submitted for the Hoshi Sinichi Prize, a competition open for both human and non-human writers.

Keywords: Artificial Intelligence, virtual literature, AI literary works, non-human writer, ChatGPT.

CĂRȚI SCRISE DE CĂTRE INTELIGENȚA ARTIFICIALĂ.
METODOLOGIE, REUȘITE NOTABILE, DILEME
(*Rezumat*)

Operele literare scrise de către *Inteligența Artificială* reprezintă, pe moment, un pariu al viitorului, însă există deja câteva reușite notorii, numărul lor sporind simultan cu multitudinea de întrebări și dileme generate de către acest fenomen, situat la intersecția dintre utopia de a-i conferi „autoarei" o libertate deplină și limitările inerente impuse de logaritmii de programare computerizată. În continuă creștere, lista de cărți generate cu ajutorul unor programe precum ChatGPT sau RNN (Recurrent Neural Network), conține o surprinzător de mare varietate de texte, de la *1 The Road* (2017), replică la faimosul roman *On the Road* al lui Jack Kerouac, la texte abstruze, lipsite de sens gramatical sau ideologic, cum e *The Serious: A Proven Divorce* (2019), generat de modelul lingvistic *char-rnn-tensorflow*. Există chiar și o eschatologie SF privind modul în care Inteligența Artificială ar putea distruge lumea (*50 Ways AI Would End The World*), incitantă fiind și autoanaliza pe care și-o face IA în *The Inner Life of an AI: A Memoir* (2022). Lucrarea de față își propune să focalizeze asupra câtorva aspecte tehnice, controverse sau validări bazate pe „testul Turing", textul de referință constituindu-l un experiment japonez din 2015, intitulat *The Day a Computer Writes a Novel*, care constituie experiența generării a două texte cu ajutorul programului *GhostWrite*r, propuse pentru Premiul Hoshi Sinichi, deschis și scriitorilor non-umani.

Cuvinte-cheie: Inteligența Artificială, literatura virtuală, texte literare generate de Inteligența Artificială, scriitor non-uman, ChatGPT.