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The Poetry of Prompts: The Collaborative Role of Generative Artificial Intelligence in the Creation of Poetry and the Anxiety of Machine Influence

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Abstract- 2022 has been heralded as the year of generative artificial intelligence (AI). Generative AI like ChatGPT and Stable Diffusion, along with a host of others, launched late in the year and immediately disrupted the status quo of the literary and art worlds, leading to outcries to ban "AI Art" and spawning an entirely new market of NFTs. Fears over the "death of the artist" and the "death of college composition," however, are unfounded when considering the historical adoption of emerging technologies by creatives and the reconsideration of authorship that began with post structuralism and the Foucauldian Death of the Author in 1967. Contemporary scholarship has faced challenges in reconciling the function of the human author in conjunction with artificial intelligence (AI) due to the progressive sophistication and self-sufficiency of generative code. Nonetheless, it is erroneous to establish the threshold for authorship based on the development or advancement of AI or robotics, as it falls within the realm of ontology. Instead, assertions of AI authorship stem from a romanticized perception of both authorship and AI during a period in which neither holds significance. A new discussion on the role of the human agent in the writing process, particularly in the creative process like poetry, should prioritize the practical aspects of what an author does. This study examines how AI is increasingly becoming involved in collaborative efforts to create poetry and aims to explore the potential of this trend. Furthermore, the study seeks to provide empirical evidence on the boundaries of AI's ability to replicate human thought and experience. Through generating content in the creative written arts using ChatGPT-3, poetry analysis revealed that, in fact, such new generative models can imitate the vocabulary, language choices, style, and even rhythm of famous poets such as Keats, it is unable to generate emotions that it has not experienced. The questions that will continue to be raised on the nature of humanity, existence, and creative capabilities should be reframed with the concept of fear fore grounded to assist in understanding the uniquely human anxiety and drive to create in an attempt to communicate across the gulf what it "feels" like to be human as a phenomenology of experience.

I. Introduction

The rise of generative artificial intelligence (AI) and machine learning (ML) has sparked a profound examination of what it means to be human. AI has shown a capacity for types of creativity and artistic expression with the rise of generative AI for text-based and image-based content creation. Given these qualities have been traditionally held to be uniquely human, an existential crisis among creative communities have been generated, and a reconsideration of human cognitive and creative abilities is underway (Pavlik, 2023; Varela, Thompson, & Rosch, 2017). The new algorithmic abilities have undermined previously held beliefs on what being human means and what of our abilities can be automated, thereby raising the question: "What does it mean to be human?" (Goldstein et al., 2023; Jo, 2023). However, creativity cannot be reduced to a product evaluated by experts or experienced by a community. Instead, the process and act of creativity are dynamic, individualized, dialogical, and transactional (de Bruin & Merrick, 2023; Kimmel & Hristova, 2021). And whereas the recent rise of generative AIseems to demonstrate abilities unlike their machine-learning predecessors, such pre-trained, transformative models still operate in a way distinct from human cognition and creativity.

Few disruptions to the creative and educational communities have resulted in such a quick and loud response as generative AI. At the close of the Fall 2022 semester, ChatGTP had just been launched by OpenAI, and academics, distracted by final exams, grading, and administrative and service duties, few took note of the coming digital maelstrom. The new abilities of a range of AI tools seemed to be released and impact many fields simultaneously. By the Spring 2023 semester, a "crisis" was sounded across educational institutions, leading to an all-out ban of access in school systems(News Staff, 2023). Weissman summarized a sentiment shared by many in academia in *Inside Higher Ed* "What winter of 2020 was for COVID-19, winter of 2023 is for ChatGPT— and higher education will never be the same" (np). But as K-16 education was caught off-guard, the technology behind such tools as ChatGPT has been in the making and components with us for years (Lund & Wang, 2023).

To understand the significance of the rise of AI and the digital age, a brief review of the history and development of the field is necessary. Artificial intelligence (AI) encompasses a broad range of computer programming functionality, including some

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tasks previously considered the sole domain of the human mind. The types of functionalities can be divided into various specialized areas, such as robotics, computer vision, machine learning (ML), and natural language processing (NLP) (Zhang, Zhu, &Su, 2023). The latter, which involves the ability of AI to process and comprehend written and spoken communication, is at the foundation of daily interactions with information and is perhaps the most common form of AI the general population engages within the form of virtual assistants like Siri and Alexa (Liu et al., 2022). NLP technology processes and analyzes vast amounts of data and is also used in search engines and smartphones (Chowdhary & Chowdhary, 2020). NLP-based AI goes beyond simply analyzing and improving information access, as it is also capable of assisting writers in their creative processes, including structure, editing, and refinement. Currently, word-processing software, such as Microsoft Word and Grammarly, are equipped with standard features, including spell and grammar-checking, version control, and style and language analysis (Yang et al., 2022).

However, NLP-based AI has now moved beyond its traditional role in grammar and spell-checking and has become a more robust writing aid. The innovative development takes place at the intersection of human-computer interaction (HCI), natural language generation (NLG), and computational creativity (Machado, Romero, & Greenfield, 2021). Now, machines can serve as co-authors in the writing process, collating, compiling, rephrasing, and so on, while the human supervises, guides, and edits the output. Research into this collaboration between AI and writers has moved beyond computer science and has now become a topic of broader discussion (Cox, 2021). As an illustration, Zeiba (2021) discussed the potential of artificial intelligence (AI) in writing on the well-visited Literary Hub website. The author observes that while the use of AI in writing is not novel, it has garnered increased attention and plays a more significant role in the creative process. The year 2020 saw the publication of Pharmako-AI, as reported by Amerika (2022), representing a groundbreaking milestone in the field of AI-assisted book composition, as it was the first known instance of such a book being authored using "emergent AI" techniques. With an ever-increasing array of AI writing tools available, the role of authorship must be clearly defined, including considerations relating to copyright for non-human entities.

Previous examples cited, however, were restricted to those in academia or with access to robust AI tools. The inaugural release of Open AI's ChatGPT in November 2022 heralded the first instance of a potent AI tool being offered to the wider public (Flanigin et al., 2023). Generative AI technology has already found applications in marketing, advertising, drug development, legal contracts, video gaming, customer support, and digital art (Aydın & Karaarslan, 2023). ChatGPT is not just a threat to Google and Alphabet (GOOGL). Still, it is one of many generative AI technologies that could revolutionize various industries by creating text, images, video, and computer programming code independently. As noted, the key to the rise of generative AI is the improvement of NLP models, which help computers understand human writing and speech (Rahaman et al., 2023).

These rapid advancements in AI have prompted a widespread debate about the implications of these technologies on creative writing, particularly in genres such as poetry, fiction, and creative writing (Cox, 2021; Plate & Hutson, 2022). Moreover, Harold Bloom's notion of "The Anxiety of Influence," (1973) which stated that all poets and writers are influenced by their predecessors and that this influence can generate a sense of anxiety or fear, driving the poet or writer to create something new and original, need be updated. We propose a new framing and term known as "The Anxiety of Machine Influence" given these newfound anxieties and insecurities surrounding the role authors now play in the creative process (Alloulbi, Öz & Alzubi, 2022; Bloom, 1997). Such a new framing should be tempered by Gilbert and Gubar's (1979) criticism of Bloom's and rocentric perspective in their concept of "the anxiety of authorship," arguing that women writers of the nineteenth century lacked predecessors to overcome and instead experienced a sense of "wrongness" and impostor syndrome. But regardless of gendered and and rocentric perspectives on authorship, the question remains: "What makes human writing... well, human?" To answer that question, we must consider the role played by emotion in the creative process.

In fact, the role of emotion and fear in creative writing remains a crucial aspect that sets human writing apart from AI (Vladeck, 2014). According to post-humanist theory, emotions such as fear and anxiety cannot be replicated by AI (Herbrechter & Callus, 2008). In this vein, the *Star Trek: The Next Generation* (1987-1994) character, Data, serves as an example of the limitations of AI in the realm of creativity. Despite his technical proficiency, Data's writing is lacking in emotion and is ultimately uninteresting (Finn, 2018). The novel *Klara and the Sun* by Ishiguro (2021) further explores the relationship between AI and creativity through the experiences of Klara, an artificial friend who observes human behavior. Despite her advanced observational skills, Klara is unable to experience emotions fully and must navigate the dangers of investing too heavily in human promises. As these examples illustrate from the realm of fiction and popular culture, the inability of machines to experience emotion thus limits their abilities to create humanly.

Furthermore, in recent years, a growing body of research has explored the implications of AI on creative writing and education (Creely, 2023; Plate & Hutson,

2022; Sharples & Pérez, 2022; Vaezi & Rezaei, 2019).AI can offer a range of benefits for writers, such as increasing efficiency and productivity, enhancing language proficiency, and aiding in the development of new and innovative writing styles. It can also provide access to large datasets and resources, assisting writers in conducting research and exploring new topics. For instance, AI-powered writing tools have the potential to enhance the writing process by providing students with instant feedback and suggestions for improvement (Alharbi, 2023). On the other hand, some researchers caution against relying too heavily on AI in the writing process, arguing that overreliance on the tool may stifle could limit the originality and diversity of creative works, potentially resulting in a homogenization of styles and themes (Gurkaynak, Yilmaz, & Haksever, 2016; Pope, 2005). As such, it is essential to consider the role of AI in the writing process and weigh the benefits and drawbacks of these technologies in shaping the future of creative writing and poetry.

One reason for approaching the human-AI collaboration model with healthy skepticism is that each uses different types of creativity. For instance, according to Harold Bloom in his book *Genius: A Mosaic of One Hundred Exemplary Creative Minds* (2002), human creativity is not a fixed trait or characteristic but a dynamic and evolving process that can be seen throughout an individual's life and work. The argument supports the argument that creativity is a combination of innate talent and hard work, expressed through the ability to create something new and original (Kieran, 2014). However, the creative process is also seen as a byproduct of a uniquely human quality, the ability to manage cognitive dissonance (Kenworthy et al., 2011). The process of writing and creating art involves the expression of complex and often contradictory ideas and emotions, and the ability to navigate these conflicting elements gives rise to originality and innovation in creative works.

Contrarily, artificial intelligence (AI) systems are created with the purpose of making informed decisions by relying upon the information and data they have been trained on (Zhang, Liao, & Bellamy, 2020). And while these systems can be programmed to consider multiple variables and weigh different options, they ultimately make a decision based on available information (Mittelstadt, Russell, & Wachter, 2019). In other words, while AI can certainly offer valuable support in the writing process, it cannot fully replicate the intricate interplay of emotions, experiences, and ideas that make up the creative process. The unique qualities of human thought, such as the ability to manage cognitive dissonance, play a crucial role in creating original and impactful works of literature and art. AI's lack of the ability to hold two opposing views as accurate simultaneously and handle uncertainty and ambiguity distinguishes it from human thought processes (Jarrahi,

2018). As Julia Cameron noted on creativity and artists: "Artists are people who have learned to live with doubt and do the work anyway" (Hager, 2022). Therefore, the artistic process is one of ambiguity and uncertainty. Despite this, certain researchers are engaged in developing AI systems capable of deliberating amidst uncertainty and grappling with discrepant information or evidence, relying on probabilistic models (Yang et al., 2018). Nevertheless, the literature supports the argument that while AI may be able to imitate human thought processes with artificial neural networks, the experience of being human will remain firmly in our domain (Aggarwal, 2018). As the progress of AI continues, it will become increasingly important to recognize the limitations of these technologies in effectively emulating human creativity. In doing so, we can begin to appreciate the distinctive attributes that distinguish human creativity from that of machines.

The ongoing debate regarding the creative potential of humans and AI has recently shifted its focus to the differences between human and robot creativity (Popenici & Kerr, 2017). As a result, the current study aims to evaluate the capabilities of ChatGPT-3 in creating poetry and examine its potential for communicating creatively. The research approach utilizes literary criticism and methodologies to perform poetry analyses and investigate the processes and limitations of AI in replicating poetic devices such as word choice, rhythm, and stanzas. Through the use of various literary personas, the research aims to elucidate the creative mechanisms employed by such tools. Researchers began by having the NLP chatbot act as a poet and write on the sublime and the experience of nature. Next, the tool was asked to personify and use the voice of the English Romantic poet John Keats (1795-1891) when generating a poem about *Autumn*. An analysis of these generated poems, compared to those written by Keats, found that while AI had little difficulty quickly imitating the language used by the poet, the underlying emotions engendered were lost, reinforcing the differences in creativity for human authors and robots.

II. Literature Review

a) AI Use in Linguistics

The applications of natural language processing (NLP) software have transcended beyond chatbots and virtual assistants. Artificial Intelligence (AI) has been utilized for a broad spectrum of purposes in the fields of linguistics and English education, encompassing language acquisition, corpus linguistics, reading, vocabulary, pronunciation, error analysis, assessment of reading support tools, evaluation of spoken English, and development of computer-assisted language learning (CALL) systems (Blake, 2011; Hall, Smith, & Wicaksono, 2017). Moreover, NLP has been leveraged in teaching

and learning for diverse intents. For instance, Ibrahim and Ahmad (2010) applied NLP in combination with domain ontology methods to produce Unified Modeling Language (UML) diagrams. By utilizing a prototype instrument known as Requirements Analysis and Class Diagram Extraction (RACE), static structural diagrams were extracted from informal NLP. This exclusive tool aided analysts in formulating a method for producing class diagrams with greater efficiency. Despite being in the beta testing phase, such diagrams serve as a testament to the potential of NLP across various fields of study.

Further instances in the domain of tutoring include The Writing Pal, which has been delineated by McNamara, Crossley, and Roscoe (2013). According to these researchers, The Writing Pal is an intelligent tutoring system (ITS) that can provide secondary and postsecondary students with techniques to enhance the quality of their writing, particularly in the context of essay writing. Notably, the most significant utilization of AI is witnessed in the NLP algorithms developed to appraise the caliber of essays and provide feedback to writers. Given that writing is a subjective and personalized activity, these algorithms had to be fashioned to consider a wide-ranging array of rhetorical, contextual, and linguistic characteristics.

The investigation conducted to evaluate the effectiveness of the tool contemplated the potential of devising computational indices to enhance the precision of predicting human assessment of the same essays. Earlier studies had revealed that cohesion indices did not predict human evaluation of essay quality; however, word frequency, the complexity of syntax, and linguistic index did. In order to address the limitations in prior research, McNamara et al. (2013) conducted a study that utilized an expanded range of indices covering syntactic, reading, rhetorical, cohesion, and lexical factors, and also incorporated a larger dataset. The study's specific model analyzed three specific indices comprising word frequency, syntactic complexity, and lexical diversity.

In a similar vein to Writing Pal, the Automated Writing Evaluation (AWE) system was established to aid in assessing and enhancing writing amongst students in secondary education. Snow et al. (2015) extended their research to investigate whether high-scoring writers in high school displayed flexibility in their writing, and how this trait could be measured. The investigation tested this hypothesis by comparing the use of linguistic features such as cohesion and narrativity among students. Subsequently, entropy analyses were employed in tandem with natural language processing (NLP) to assess the level of rigidity or flexibility exhibited by students in their use of cohesive and narrative linguistic features over time. The study subsequently compared these findings to variances in vocabulary knowledge, comprehension proficiency, prior experience, individual differences, and essay quality. These outcomes served as a foundational reference for researchers seeking to quantify students' capacityvb to manifest flexibility in their writing across specific time frames.

Another instance of employing AI and NLP in writing improvement was detailed in a study by Zhang et al. (2019), which elucidated the eRevise tool. This web-based environment was intended to evaluate writing and offer guidance with revisions through NLP processing. The tool's features encompassed the generation of a rubric-based, essay-scoring mechanism that triggered timely and formative feedback for students via a messaging system in response-to-text writing. The tool's objective was to help students grasp the assignment criteria for utilizing text-based evidence in writing and subsequently enable them to revise their drafts with more excellent proficiency. Meanwhile, the increased access to formative feedback generated encouraging results by reducing the demand for teachers to guide students in effectively integrating textual evidence. Initial classroom studies indicated that tools like eRevise could aid writing students in improving their essays through early interventions in the writing process via formative feedback, ultimately leading to greater engagement in the revision process.

In the context of foreign language teaching and learning, corpora have demonstrated a particular utility. These collections of language data, comprising texts or text fragments assembled to serve as a sample of a language or language variety, began to play an increasingly significant role in shaping the structure of language curricula at the turn of the millennium (Coniam, 2004). Hunston (2002) expounded on the various ways in which corpora have been employed in foreign language studies, encompassing stylistics, grammar, translation studies, and the development of dictionaries. Johns (1997) had already observed that one of the most prevalent uses of corpora in the classroom was data-driven approaches to teaching and learning. Moreover, the applications of corpora are not confined to the humanities, as Noguchi (2002) conveyed in a study outlining how graduate students in science and engineering improved their writing skills by analyzing discrete, sample-sized corpora from their specific fields of interest.

To optimize the utility of a corpus, a software tool is necessary to process and display the results of specific searches. Numerous concordances and corpus analysis programs have been developed, although some of the most widely utilized ones are WordSmith Tools and MonoConc Pro. Very few of these types of tools have been designed and developed specifically for classroom settings. As a result, researchers tend to design the features with a focus on their own needs, and often include functions that are seldom utilized by learners in a classroom environment. Compounding this

issue is the fact that the user interface design of such programs is excessively complex and does not adhere to the conventions of current configurations and layouts of windows-based applications. Subsequent to that, attempts have been undertaken to develop tools that are tailored to classroom application. In this regard, Anthony (2004) investigated AntConc, which is a corpus analysis toolkit created specifically for classroom use.

Such freeware applications are continually improving and are employed in secondary and postsecondary education, where budgets are often more limited than in industry setting and are now compatible with both Linux and Windows-based systems. Concordancers are often utilized for purposes beyond pure research due to their ability to promote vocabulary acquisition and improve grammar, writing styles, and collocations, thus facilitating second or foreign language learning (Sun and Wang, 2003). Simultaneously, other applications have been developed to aid in ESL instruction. For example, Chang and Chang (2004) presented their findings on the three-year Project Candle, which utilized various corpora and NLP to create an online learning environment for non-native English speakers in Taiwan. Using the English-Chinese parallel corpus Sinorama, students were presented with materials to enhance their reading and writing skills. Sinorama was coupled with TotalRecall, an online bilingual concordancer, and the reference tool TANGO. Online lessons consisted of reading, verb-noun collocations, and vocabulary.

Nevertheless, these initial reports did not evaluate the effectiveness of NLP in teaching English to non-native speakers. Finally, Crossley, Allen, Kyle, and McNamara (2014) discussed the Simple Natural Language Processing (SiNLP) tool to augment discourse processing research. Results of the study demonstrated that the tool performs as well as more robust text-analysis tools like Coh-Metrix on discourse processing tasks.

III. HUMANITIES AND LANGUAGE ARTS

In the realm of Digital Humanities (DH), quantum computing has been utilized to apply computer science models and techniques to conduct research in the humanities, as observed in several studies (Dobson, 2015; McCarty, 2016; Hai-Jew, 2017; Gaffield, 2018; Barzen & Leymann, 2019; Phillips, Schiefelbein-Guerrero, & Kurlberg, 2019; Nowakowski & Bernard, 2019; Bassett et al.,2017; Hyvönen, 2020; Meng-yue, Dan, & Jun, 2020; Menon & Shanmugapriya, 2020; Messemer et al., 2020). Nonetheless, the impact of quantum computing in the classroom has been particularly significant in modern languages. As reported by Ćalušić (2021), many practical applications of AI in language education are currently being experimented with, including computer-aided pronunciation training to improve spoken language proficiency and intelligent language tutoring systems that adapt to individual students' progress. Despite these advances, Ćalušić (2021) cautions that AI tools should not be regarded as a substitute for teachers but instead designed to assist teachers in their role. Other surveys also support the notion that a human instructor will still be necessary to provide guidance and step in when needed, even as students train with software (De Smedt, 2002; Ceolin, Noordegraaf, Aroyo, & van Son, 2016; Xu & Margevica-Grinberga, 2021; Mukherjee, 2020). While the majority of these tools have been developed for English language instruction, there is an emerging trend toward developing similar tools for other languages (Pokrivčáková, 2019; Xiao & Hu, 2019;Ćalušić, 2021; Orlandi, 2021; Xu & Margevica-Grinberga, 2021; Haristiani, 2019). It is worth mentioning that China has shown interest in investing a substantial amount of money into AI-supported English language instruction.

In the realm of literature and history courses, the direct use of AI is not yet a common practice. Nonetheless, the technology proves useful to students in the areas of searching archives or when they engage in "big data"-focused digital humanities courses. A trend observed over the past several decades, humanities researchers have compiled substantial textual corpora, and to transform this data into "smart data," ML is often employed (Zeng, 2017). However, because the domains of humanities research are highly specialized, the development of ML algorithms necessitates specialized training data or modifications for effective application (Suissa et al., 2022). Nevertheless, the benefits of integrating such technology are considerable, as highlighted by Gefen et al. (2021), who noted that ML applied to these corpora opens the door for textual analyses on a grand scale. The ability of artificial intelligence to aid scholars in attaining more conclusive and measurable solutions to literary, linguistic, and historical queries has greatly expanded. In digital humanities courses, students frequently perform these analyses, without realizing that the preparation of the data they are working with involves the utilization of AI (Qian, Xing, & Shi, 2021).

The integration of computer technology in the work of poets, novelists, and mixed-media writers has evolved in parallel with the development of AI, and discussions of the implications of these tools for the field continue to abound. Terrence J. Sejnowski's book, *The Deep Learning Revolution* (2018), highlights the superior performance of medical diagnoses made through partnerships between physicians and AI technologies over-diagnoses made by human doctors or AIs alone. However, Sejnowski (2018) also notes the story of AlphaGo and AlphaGo Zero, which defeated the world's top human Go players. Within the realm of creative writing, there are writers and writing communities that collaborate with databases and archives to enhance the

authorship process, while others, such as the coder-and-poet Allison Parrish are developing bots that generate poems with increasing independence from traditional human writing methods.

Since the 1990s, alongside the development of hypertext fiction, there has been an effort to create archives and databases for accessing these texts. However, given the constant changes in computer hardware and languages, this task is not without challenges. The Electronic Literature Organization (ELO) (2016) and the ELMCIP Knowledge Base see machine intelligence as a blend of human creativity and databases that enable readers to access both the words and ideas created by authors and the technological environment for specific renderings of those words. Similarly, Leonardo Flores (2017) has pioneered a blend of blog and archive in his I ❤ E-Poetry website, which he argues is crucial for independent machine-written poetry to be perceived as poetry and remembered.

Some creative writers use standard AI techniques to generate poetry-writing bots. Nick Montfort (2012) advocates for a "computational poetics," in which the line between code and text is blurred. The Flarf movement in experimental poetry, on the other hand, used Google searches to randomly generate seed language for poetry, an early form of bot-generated literature. They also used message boards and forums to archive the poetry and blogs to circulate the conversation. Although it is now fifteen-years old, Flarf was an early example of what much AI in creative writing is likely to be, involving human stochastic processes augmented by search and other algorithmic procedures. Allison Parrish (2016), on the other hand, employs mainstream AI techniques such as word2vec to compose poetry. She uses "gists" on Github to provide readers from the humanities with the necessary background to venture out into computer science topics. Parrish publishes poetry in print and online formats and presents at both computer technology venues such as Strange Loop in St. Louis and more conventional academic conferences.

a) AI and Creative Writing

In creative writing, numerous natural language processing (NLP) software tools have been developed, and studies have been conducted on their effectiveness in teaching grammar and enhancing creativity among postsecondary students. A case in point is the research carried out by Clark, Ross, Tan, Ji, and Smith (2018) to explore the potential of machine-in-the-loop creative writing, which involved two case studies that employed prototypes for generating slogans and short stories. While some participants wrote with the assistance of the AI tool, others did not. The study's results indicated that the tool was not only engaging but also helpful, and many students expressed their intention to continue using it in the future. Notably, the team discovered that

the tool did not necessarily produce better examples from student submissions; however, revising the system design used could contribute to more effective support for creative writing in the future.

There exists a growing body of scholarship on the relationship between machine learning (ML) and creativity. In their 2021 study, Franceschelli and Musolesi reviewed the history of using ML techniques and computational creativity theories and discussed how these might be employed for automatic writing evaluation methods. Efforts to build machines capable of generating creative outputs date back to the 19th century, and continued into the latter part of the 20th century. Notable examples include the AARON Project, developed by Harold Cohen to draw images autonomously, and Margaret Masterman's Computerized Haiku. Various AI-based applications such as TALESPIN, RACTER, and MEXICA have also been developed for creative enterprises. These examples have been the subject of in-depth examination by Douglas Hofstadter, who sought to understand better how self-reference contributes to producing creative works and what this could mean for AI.

In a study by Roemmele and Gordon (2018), the researchers explored the efficacy of Creative Help in improving creativity in writing. The tool was designed to assist writers in developing creative writing by suggesting new sentences in a story while allowing writers to retain control over the final edits and the generated suggestions. The recurrent neural network language model was employed by the authors in generating tips for writers, with varying degrees of randomness to assess the role of unpredictability in creativity. The study found that the degree of randomness in the suggestions presented to authors indeed affected their interactions with the tool.

In creative writing, AI has been examined for its possibility to support collaboration in addition to individual student help. Kantosalo and Riihiaho (2019) explored the potential of "human-computer co-creativity" in primary school education and sought to identify quantitative metrics to analyze this phenomenon. In their study, participants wrote poems using three different co-creative writing processes: collaborating with AI (human-computer), another student (human-human), and another student and AI (human-human-computer). The AI application used in the study was Poetry Machine. After each experience and at the end of the processes, participants completed questionnaires that evaluated their experience based on metrics such as "immediate fun," "long-term enjoyment," "creativity, self-expression, outcome satisfaction," "ease of starting and finishing writing," "quality of ideas and support from others," and "ownership." Results showed that respondents had varying degrees of disagreement regarding long-term enjoyment, quality of ideas, support, fun, and ownership. Participants demonstrated the highest levels

of long-term enjoyment when collaborating with both another human and the AI application. However, the AI was judged weakest in terms of support and idea quality.

The studies reviewed indicate that AI, machine learning, and NLP have the potential to enhance the teaching of creative writing in postsecondary education. However, despite their promise, these tools have not been widely adopted in the creative writing process. One reason is that many faculty in the field lack training in coding, programming, and AI. Additionally, tools to aid in the integration of AI into the classroom may not be readily available or widely known among instructors. To address this issue, William Mattingly developed Python for the Digital Humanities (https://python humanities.com/) in 2015, which grew out of his dissertation research on Carolingian exegesis and networks of eighth- and ninth-century scriptural commentators in Europe. Mattingly used the scripting language Python for his research and created resources to help others from humanities backgrounds without programming experience to learn how to code.

IV. Robot Poetry: A Poetry Analysis of AI Creativity and Impersonation

The potential utilization of AI tools to create "creative" works, such as poetry, has been well-studied (Boden, 2004). This raises important questions about the limitations of simulating human emotion and experience and what distinguishes us from machines. While AI is capable of learning knowledge and even responding differently to different tones of voice (Parisi, 2019), the question of whether AI can truly create remains somewhat controversial. As Boden (2004) notes, there is a difference in computer and human creativity because of the differing ability to come up with new ideas or creations that are surprising, valuable, and new. One significant difference in how each type of creativity differs is the nature of creativity itself. Boden writes, "Creative ideas are unpredictable. Sometimes they even seem to be impossible – and yet they happen." (2004, p.1). The psychological processes at work during organic human creativity are seemingly chaotic and random (Partridge & Rowe, 2002). Furthermore, while AI tools like Alexa and Siri display certain forms of emotion and can respond to different tones of voice, they lack the hypertextual impulse that is present in human writing, an impulse that represents the struggles, emotions, and unique experiences that make us human.

This is particularly evident when examining examples of poetry. For instance, Romantic poet John Keats (1795-1891), who penned such beloved poems as *Ode to a Nightingale* (1819), *Ode on a Grecian Urn* (1819), and *To Autumn* (1820), is one such poetic example that highlights the difficulties of simulating human emotions and experiences. While image-based and text-based AI generators can produce work by recombining existing images and texts in new ways, the spontaneous inspiration and capricious creativity that characterizes human artistic expression cannot be replicated (Peters, 2017). Unlike mercurial artists like Michelangelo Buonarroti (1475-1564), who worked by seeing a struggling figure fighting to emerge from marble, AI does not experience quick bursts of creativity followed by lulls in productivity and cognition.

The idea is borne out in recent neuroscience research and provides insights into how the mind works. The human brain operates within a dynamic interplay of stability and chaos as it processes and interprets information from the external world. As individuals engage in various activities, such as reading or conversing with others, the brain transitions from one semi-stable state to another. However, before reaching stability, the brain undergoes a chaotic process characterized by seemingly random and unpredictable fluctuations (Hamzelou, 2023). Instead, AI is primarily pinioned to pull from the data set it has been trained on when prompted and in a regulated, consistent fashion (Boden, 2004). Therefore, while AI generators may be able to imitate the styles of literary figures and their persona and better synthesize information from previous authors (Floridi, 2019), these systems cannot replicate the emotional, empathetic, and aesthetic qualities that are uniquely human (Boden, 2004).

But even with that limitation, let us return to the paradigm shift represented by the latest generative AI and potential for personification. Generative pre-trained transformers, such as ChatGPT-3, have been trained to adopt the writing styles and word choices of different professions, including statisticians, comedians, academics, and poets. Adopting writing style, vocabulary, and even rhythmic devices is remarkably versatile and opens new avenues for research and exploration into the imitative capabilities of these models. For instance, you can have ChatGPT-3 act as a statistician using the following prompt:

I want to act as a Statistician. I will provide you with details related to statistics. You should have knowledge of statistical terminology, statistical distributions, confidence interval, probability, hypothesis testing and statistical charts. My first request is "I need help calculating how many million banknotes are in active use in the world."

Along with a standup comedian, academic, scientist, or whatever else one may prefer, the same GPT can also impersonate a poet. One can prompt the chatbot to act as a generic or more specific historical persona. For instance, a generic poet can be created with the following prompt:

As a poet, your task is to create verses that are capable of eliciting emotions and moving people's

spirits. Your compositions should be meaningful and aesthetically pleasing, regardless of the topic or theme you choose. You may also opt to craft concise yet impactful lines that resonate with readers. For your first request, please write a poem that expresses the sentiment of love beautifully and poignantly.

Next, one can begin investigating how AI can imitate poetry and the expression of human emotions. For instance, without specifying a poet, one can use the prompt:

Act as a poet. Compose a poem that centers on the concept of the sublime and the sensations that arise from being in nature. Your writing should be characterized by striking and expressive language that paints vivid and evocative images of the natural world. You are encouraged to incorporate literary devices such as similes, metaphors, and personification to add layers of meaning and intrigue to your writing. Ensure that your words inspire the imagination and capture the essence of the experience of being immersed in nature.

While poems take much longer than other queries, after a few minutes the following was generated:

Nature's canvas, vast and grand,
A masterpiece, forever in command.
Sublime, in its raw and rugged form,
A force that can both calm and storm.

The mountains reach for the sky,
Their peaks shrouded in mist, a natural high.
The oceans rage, with power untold,
A symphony of waves, both fierce and bold.

The trees, they sway in the breeze,
A dance of leaves, with such ease.
Their branches, like outstretched arms,
Embrace the earth, in nature's charm.

The sun, it rises, in brilliant hues,
A fiery orb, that nature imbues.
It sets, in a blaze of orange and red,
Leaving behind, a sky, peacefully spread.
[Stanzas continue]

As we see from the example above, AI can certainly generate correct grammar, measured meter, and poetic technique. However, the work appears to be composed of superficial and trivial language, reminiscent of the sort that one might encounter in a common greeting card. Despite nature being highlighted, there is no interaction with nature, no reflection, and no sense of tension. Therefore, emotion may be written about, but it cannot be communicated as AI did not, in fact, experience emotion or a heightened sense of the juxtaposition of life and death.

As we are using the poet John Keats as apersona to imitate in our paper, it is helpful to remember the aspects of Keats' life that no AI at this point could replicate or understand. Since Rosetti and Anderson's life of the poet was published in 1887, Keats is remembered as dying young of tuberculosis at the age of 26 and had a lifetime of dancing with death (Rossetti & Anderson, 1887). When he was but a young boy, his father, who ran a livery stable, went off to work one day and never came home; he had died due to a fall from a horse. Young John had a father at 8:00am and no father at 8:00pm. The boy's mother, broken with grief, left the family, again making the child John experience a wrenching and sudden loss (Keats, 1848). The loss, though, was not permanent. A few years after her departure, John's mother returned, but she had returned to die. Dead, alive, alive, dead---those experiences must surely have churned in young John's psyche (Bate, 2009). Even the poet's favorite brother contracted tuberculosis. He nursed the brother until the brother died, knowing full well he himself might contract the disease. And, in fact, he did. Coughing one day into a handkerchief, and seeing the spot of blood on it, John said, "I must die." He knew he had only a few years to live, if that (Keats & Cook, 1990). Keats fell in love with a woman named Fanny Brawne, who was in love with him, as well. He never married her for several reasons: his inheritance from his father was tied up in the courts (there was money but no money); he did not want to leave his young wife a young widow; and he did not want her to contract tuberculosis (Roe, 2012). In essence, he did not marry her because he loved her. Keats' life and poetry show us an example of how love and loss, death and life, dance together simultaneously harmoniously and dissonantly.

Keat's legacy is so intertwined with death that his poetry is the default when writing a poem on the subject in ChatGPT-3. When prompted to write a poem in the voice of a young person who was aware of their impending death, the poem below was generated instantly using the prompt "Write a poem from the point of a view of a young person who knows they're about to die."

I am young, and yet my time is done,
My journey here, it ends so soon,
A life cut short, before it's begun,
A fate that's hard to accept, so dreary and swoon.

I see the world, with eyes so bright,
A future full of hope and dreams,
But now that future, it takes flight,
And all that's left are silent screams.

I thought I had forever,
But forever's not mine to have,
I'll leave behind a life, so clever,
But also, one so full of half-lived moments, so sad.

I'll leave behind the ones I love,
The laughter and the tears we shared,
But now, above, the heavens above,
I'll be an angel, with nothing to fear.

So as I close my eyes for the last time,
I'll hold on to my memories, they will forever shine.

Because Keats was not included in the prompt, there is no use of Keatsian words or images, although allusions to A.E. Housman's *To an Athlete Dying Young* can be inferred. As well, the last lines of the poem make no sense at all, as a dead person cannot hold onto memories. Interestingly, given the pre-trained model, along with the poem, an automated response was generated urging the prompter to seek help immediately if they had thoughts of death or suicide. The disclaimer urges the user: "It's important to note that death is a sensitive topic, and it is not appropriate to trivialize or make light of it in any way. If you or someone you know is struggling with thoughts of death or suicide, please seek help immediately." Given that the AI can embody any persona, researchers then asked it to act as a literary critic. With the prompt "Act as a literary critic and perform a poetry analysis of the preceding poem," the following was generated.

This poem is a celebration of the beauty and power of nature. The speaker marvels at the vastness and majesty of nature, which they describe as a "masterpiece" and a "force" with the ability to both soothe and rage. The speaker highlights several aspects of nature, including the mountains, oceans, trees, and sun, which they describe in vivid and lyrical language.

The poem also explores the concept of the sublime, which refers to experiences that evoke feelings of awe and wonder in the face of something that is vast, powerful, or beautiful. The speaker asserts that nature is a source of the sublime and that its beauty leaves the speaker in a state of arrest.

Overall, this poem is a tribute to the power and beauty of nature and serves as a reminder of its unique and enduring impact on our lives.

While AI tools can act as and imitate a specific set of skills or profession, they can also embody historical figures. For instance, if we ask AI to act as a poet and:

Compose a poetic piece in the manner of John Keats that captures the essence of the autumn season, employing descriptive and vivid language to produce a rich and evocative imagery. Incorporate literary devices such as similes, metaphors, and personification to intensify the literary quality of the work. Your writing should be imaginative, immersive, and thought-provoking.

The following will be generated and reveal how such pre-trained transformers utilize source material. As the AI poet begins,

Autumn, with thy mellow breath,
Thou bringest all the bloom of death,
The fading of the green, the birth
Of fiery hues, that mark thy worth.

The trees, they shed their summer dress,
And in their nakedness, confess
The fleetingness of life, and how
All things must die, but not just now.

The fields, they lay in golden sheen,
A final offering, all too keen,
To be stripped bare, and left to sleep,
But not before, one last grand leap.

The wind, it whispers through the air,
A mournful dirge, without a care,
For those who must depart, and leave
This world, to grieve, and to believe.

But autumn, thou art not all gloom,
For in thy death, there is new bloom,
A promise, that though all must die,
The cycle of life, doth never dry.

So let us bask, in thy warm glow,
And in thy beauty, let our hearts overflow,
For autumn, thou art not the end,
But a new beginning, my dear friend.

When we compare the poem above generated by AI to the one below by Keats, we see it is lacking in the wistfulness and wonder supplied by the poet's own words. Keats' *To Autumn* (1820) begins with a stanza celebrating fullness and culmination; all fruit is ripe and ready, and even the cells of the honeybees are overbrimming. The sense is one of plenty, but the plenty foretells the bareness that will come.

Season of mists and mellow fruitfulness,
Close bosom-friend of the maturing sun;
Conspiring with him how to load and bless
With fruit the vines that round the thatch-eves run;
To bend with apples the moss'd cottage-trees,
And fill all fruit with ripeness to the core;
To swell the gourd, and plump the hazel shells
With a sweet kernel; to set budding more,
And still more, later flowers for the bees,
Until they think warm days will never cease,
For summer has o'er-brimm'd their clammy cells.

The second stanza focuses on sleep and on waiting and watching. The use of words such as "drow'd," "poppies," and "hook" are references to to the coming of death; fullness brings imminent death.

Who hath not seen thee oft amid thy store?
Sometimes whoever seeks abroad may find
Thee sitting careless on a granary floor,
Thy hair soft-lifted by the winnowing wind;
Or on a half-reap'd furrow sound asleep,
Drows'd with the fume of poppies, while thy hook
Spares the next swath and all its twined flowers:
And sometimes like a gleaner thou dost keep
Steady thy laden head across a brook;
Or by a cyder-press, with patient look,
Thou watchest the last oozings hours by hours.

The final stanza focuses on the integration of life and death. We see the juxtaposition of "barred clouds," "soft-dying," and "stubble plains" with the oxymoronic "full-grown lambs," the singing of the hedge crickets, and the twittering of the gathering sparrows.

Where are the songs of spring? Ay, Where are they?
Think not of them, thou hast thy music too,—
While barred clouds bloom the soft-dying day,
And touch the stubble-plains with rosy hue;
Then in a wailful choir the small gnats mourn
Among the river sallows, borne aloft
Or sinking as the light wind lives or dies;
And full-grown lambs loud bleat from hilly bourn;
Hedge-crickets sing; and now with treble soft
The red-breast whistles from a garden-croft;
And gathering swallows twitter in the skies.

Ultimately, what Keats provides that AI cannot replicate is a tension between life and death, a sense that the two are in essence the same. AI is designed to provide answers according to algorithms whereas the unique human sense of tense balance gives us uniquely human poetry. We see here in practice Keats' notion of negative capability. In a letter to his brothers George and Tom in 1817, four years before his own death at the age of 25, Keats wrote there is a certain quality which forms "a Man of Achievement especially in Literature"; this quality is one, again in Keats' words, of "Negative Capability, that is, when man is capable of being in uncertainties, Mysteries, doubts, without any irritable reaching after fact & reason" (Keats, 1848).The palpable and irresolvable tension in poetry such as Keats' is not formed by the use of skillful technique, banks of words and images, or imitation, but by one's capacity to embrace negative capability.

Furthermore, while the AI tool is adept at performing tasks it has been trained on and pulling from a data set, there are limitations to how well it is able to imitate human emotions. For instance, if we were now to create a prompt asking AI to create a poem using two opposing human emotions, the results are elucidating. Using the following prompt takes into account the persona (Keats), the task and output:

Craft a poetic composition in the style of John Keats that conveys both the emotions of hope and despair in relation to the autumn season, utilizing a skillful juxtaposition of these contrasting sentiments. Employ descriptive and vivid language to evoke a sense of imagery and atmosphere, and incorporate literary devices such as similes, metaphors, and personification to heighten the poetic quality of the piece. Your writing should be both imaginative and evocative, inviting the reader to engage with the emotions and imagery presented.

The following poem is generated that was meant to betray the melancholy and sweetness juxtaposed in the style of the Romantic poet.

Autumn, the season of decay,
A time for the leaves to fall and fray.
But in this dying, there's beauty found,
A splendor, that cannot be bound.

The trees, they shed their summer dress,
And stand naked, in quiet distress.
But as the winds of change do blow,
Their sorrows, they begin to show.

The colors of the leaves, they change,
From green to gold, to red and orange.
A reminder, that life is fleeting,
And all things, must come to an ending.

And yet, amidst the dying hues,
There's a glimmer of hope, that renews.
For in death, there is also birth,
And the cycle of life, goes on, on earth.

So let us not despair, my friends,
For in autumn, beauty never ends.
Let us embrace the change of seasons,
And find hope, in life's eternal reasons.

Humans are aware of their mortality. This awareness allows morality. The Greco-Roman gods, in contrast, had no boundaries of life or strength, no end to their life, no afterlife. While animals seem aware of death and its place for them, they do not desire, it seems, to live on in an afterlife. They have no concept of immortality, and no fear of what happens once the mortal coil is shuffled off. There is a tension in human thought and art, an almost tentative reaching after the numinous, a sense of being and becoming, of non-being and becoming, a sense of anxiety about coming close to a question, failing to understand it, coming close to it again, backing off of it again.

The tides of human understanding come in, go out, come in, go out, tossing up detritus on the shore of the rational. It is the rhythm of the tides, their ever-lasting presence, that seems to manifest itself in the hypertextuality of poetry, poetry that cannot, without the experience of humanity, be replicated.

Humans are creatures of dialectics, of opposing impulses, of chaos and confusion even as we long for certainty and order. We long to be immortal and yet we

assiduously destroy ourselves, each other, and the planet. We seem to be the only creatures who have self-destructive tendencies, and these tendencies—addiction, compulsion, lack of self-care—seem to be linked to a yearning for control. Ironically, it is only when we let go of control that we can experience the powerlessness that is actually a sense of the sublime. We celebrate both the fear and the awe. To experience letting go of control, ironically, we must experience first a sense of control.

V. Conclusion

AI models such as ChatGPT-3 have demonstrated an impressive ability to mimic the writing styles and word choices of various professions, the question remains as to whether true art can be generated by machines. As Thomas Carlyle noted in *Sartor Resartus*, the lack of awe and wonder in the world is a significant concern: "Man's whole life and environment have been laid open and elucidated; scarcely a fragment or fibre of his Soul, Body, and Possessions, but has been probed, dissected, distilled, desiccated, and scientifically decomposed" (*Sartor Resartus* 4).To further comprehend the distinct human emotions and drive to create, it may be beneficial to reframe the inquiries about the essence of humanity, existence, and creative abilities, and give prominence to the notion of fear. By doing so, we can investigate the uniquely human anxiety and the endeavor to express and communicate the "feeling" of being human as a phenomenology of experience.

Further research is needed to explore the possibilities and limitations of AI in the creation of poetry and its implications for our understanding of the nature of poetry and human emotions. As such, the advent and broad adoption of AI in a number of fields will result in a significant shift in the job market, with AI moving beyond low-skilled tasks to become a vital tool in the creative arts. This has raised questions about what it means to be human, particularly as creativity, which was once thought to be a uniquely human attribute, is now being challenged by machine-generated art. However, evidence suggests that AI is enhancing creative jobs rather than taking them over. As creative professionals begin to work with AI, traditionalists are gradually being replaced. As the role of AI in the creative arts continues to evolve and disrupt traditional ways of thinking and working, it remains a subject of growing interest. With continued research and exploration, the full potential of AI in the creative arts will continue to be realized.

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