TU Delft OPEN

JHTR
Journal of Human-Technology Relations

THE WRITER IN-BETWEEN

A Post-phenomenological Analysis of Large Language Models (LLMs) and Their Implications for Writer-Tool Relations

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Article type: Research article
Review process: Double-blind peer review
Topical collection: Postphenomenology in the Age of AI: Prospects, Challenges, Opportunities.
Guest editor Dmytro Mykhailov

DOI: 10.59490/jhtr.2025.3.7398
ISSN: 2773-2266
Submitted: 12 February 2024 Revised: 9 August 2024 Accepted: 24 November 2024
Published: 12 March 2025

How to cite (APA): Yaghoobian, H. (2025). The Writer In-between: A Post-phenomenological Analysis of Large Language Models (LLMs) and Their Implications for Writer-Tool Relations. *Journal of Human-Technology Relations*, *2*(1), pp. 1-18. https://doi.org/10.59490/jhtr.2025.3.7398 For guidelines, see APA format.

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Keywords

Postphenomenology; Deleuze; Human-AI interaction; Large Language Models

Abstract

This article examines the interplay between writers and their tools within the context of generative AI word processors, using a post-phenomenological framework. It argues that despite the shift in complexity from user to tool—facilitated by advancements in technology such as Large Language Models (LLM)—the interaction between writer and tool remains deeply reciprocal and co-constitutive. This relationship challenges traditional dichotomies of user/tool, ancient/contemporary, and digital/non-digital, and advocates for a nuanced understanding that transcends binary categorizations. I illustrate how even conventional technologies like pens, as well as advanced technologies like LLMs, engage writers in a mutual shaping process, suggesting that the essence of writing technology lies not in the tool itself, but in the relationality it fosters between the user and the technological medium. This interaction wants to move towards a livelier and less humanist ontology that embraces the complex intimacies and capacities of machine-human connections. This framework allows for a post-optimal analysis of relationality and supports the extended interactions across diverse milieus. Ultimately, the paper calls for a reconsideration of digital creation stewardship, emphasizing the need for ethical frameworks that accommodate the profound implications of AI integration in writing and beyond, highlighting the capacity of writing machines for the prodigious generation within these intimate and unfolding encounters.

1 INTRODUCTION

In today's digital era, we find ourselves deeply entrenched in the realm of textuality, where the essence of nearly everything is encapsulated within the metaphor of the written word. The dominance of contemporary writing as a fundamental cultural and technological phenomenon has persisted and evolved since the seventeenth century, beginning with the revolutionary advent of the printing press. This historical milestone initiated a trajectory of evolution, from the Gutenberg press to today's digital word processors, with each advancement altering the landscape of how ideas are recorded and shared. Throughout this journey, transitioning from quill to keyboard reflects a profound transformation that has accelerated with the digital revolution. This era is defined not merely by the transposition of thoughts into text, but also by an interactive engagement with intelligent systems capable of enhancing and expanding the writer's capabilities. This transformation signifies a departure from the tactile interaction of pen on paper to a more abstracted, more dynamic form of text creation. Here, the writer engages with interfaces that understand, anticipate, and even participate in the creative process. As we navigate this transition, it becomes imperative to examine not just the tools themselves, but also the evolving nature of the relationship that writers forge with these new collaborators.

The integration of LLMs in modern writing tools, exemplified by advanced generative word processors such as Google Workspace's Duet AI, Microsoft 365 Copilot, and Apple's Writing Tools[1] —all of which utilize models like Gemini, GPT, and ChatGPT—has significantly reshaped the writing process. These integrations provide sophisticated capabilities to assist users in composing, editing, and refining content, thereby enhancing productivity and creativity across diverse writing scenarios. These tools not only streamline the process of creating and revising text but also introduce a new layer of complexity that is managed through sophisticated interfaces. These interfaces, critical in rendering the complexities of LLM artifacts more intuitive and user-friendly, shift the locus of complexity away from the user. This shift is facilitated by interfaces that serve as vital mediators, navigating and controlling situations of 'otherwise unintelligible complexity' (Hookway, 2014, p. 88). These interfaces, through the deployment of semi-autonomous agents, or "demons[2]," reveal hidden differentiations within complex systems, thus enabling knowledge and control. These agents operate in the "gulf" (p. 74)—a conceptual space between human experience and computational power—facilitating interactions that enhance usability without requiring users to engage directly with the underlying technology. In other words, this mediation translates complex computational processes into accessible and manageable experiences for users. Despite this mediated complexity, the relationship between the writer and the writing tool remains intricately nuanced, shaped by a confluence of factors like the writer's expertise, inclinations, literary style, and machine's capacity to 'surprise'. Interestingly, A. M. Turing (2009) acknowledged that machines frequently take him by surprise, which he attributes to either insufficient calculation on his part or to hurried, less rigorous computations. Turing then suggests that the element of surprise does not necessarily reflect a creative act by the machine itself, but rather the unexpected results from the machine's operations based on the assumptions and inputs provided by the human operator. This indicates that while machines may not be inherently creative, their ability to produce surprising results is tied to their interaction with human input and the complexity of the operations they perform. Turing's insights into the "mere working out of consequences from data and general principles" (p. 55) through interfaces emphasize the agential capacity of semi-autonomous

[1] https://openai.com/index/openai-and-apple-announce-partnership/

[2] Hookway utilizes the term 'demon,' as used by Maxwell and later by Kelvin (p. 84), to refer to an intelligent being or agent endowed with free will, capable of observing and influencing individual molecules of matter. In his formulation, demons symbolize the semi-autonomous agents that inhabit and operate within the interfaces of computational systems, embodying the capacity for control, differentiation, and the execution of complex tasks beyond direct human manipulation. (Hookway, 2014, p. 84)

agents to act. These agents not only facilitate control within complex systems but also challenge our assumptions about the predictability of machine behavior. I further explore this agency in Section 3.3.

In the evolving landscape of digital composition, post-phenomenology offers a useful lens through which we can examine the symbiotic relationship between writers and their tools. The advent of LLMs, which power the latest generation of word processors and operating systems, marks a significant shift in this dynamic. These models, with their ability to predict, learn, respond, and adapt to user input, transform the traditional writer-tool interaction. By providing real-time suggestions and feedback, LLMs facilitate the mechanics of writing, signifying a shift in our understanding of the writing process in the digital age. I refer to this interactive dynamic as a *technogenetic becoming* where human creativity and machine intelligence intricately intertwine in a dance of co-creation and mutual influence. By examining the historical, philosophical, and psychoanalytical dimensions of this becoming, I explore the co-constitutive nature of writing in the 21st century. Inspired by the notion of gulf, the in-between space emerges as a central theme, offering insights into the mediation of these relationships and the impact of semi-autonomous agents and modern "black boxes" on digital writing. Section 2.1 offers a rich historical perspective, while subsequent sections expand upon the notion of in-betweenness and examine the intricate ways in which contemporary technologies, particularly LLMs, redefine the boundaries of authorship, creativity, and the mechanics of writing. This discourse sets the stage for a broader discussion on the integration of AI in creative and communicative practices, challenging traditional conceptions and fostering a deeper understanding of the co-creative potential of human-machine collaboration. In the ensuing sections, I assess the ethical, philosophical, and practical dimensions of these configurations. By integrating Deleuzian and Simondonian perspectives, I advocate for a shift from a human-centric to a more distributed, relational understanding of these interactions, highlighting the complex, interdependent networks that characterize contemporary writing environments.

2 IN-BETWEENNESS: THE EVOLVING SYMBIOSIS OF WRITERS AND WRITING TOOLS

We make tools, they strike back. (Flusser, 2017)

This section explores the symbiosis between writers and writing tools, tracing how these instruments–ranging from Nietzsche's typewriter to Derrida's computer–have profoundly shaped our cognitive processes, writing practices, and the very essence of textual creation. I argue that the relationship between writers and tools is not merely utilitarian, but deeply intertwined with the writer's thoughts, creativity, and expression, leading to a mutual transformation that defines the act of writing itself.

2.1 EVOLVING SCRIPTS: INSIGHTS FROM NIETZSCHE AND DERRIDA

The evolution of writing technologies, from the mechanical intricacies of typewriters to the digital sophistication of word processors, has significantly influenced the many ways in which we engage with the written word. A cursory examination of the historical trajectory of (electro)mechanical typewriters and word processors, both as mechanical and media machines, offers a rich tapestry of evidence illustrating the profound impact of writing tools on the experience and process of writing. One notable example from the annals of history is the case of Friedrich Nietzsche, whose diminishing vision led him to turn to the typewriter—a groundbreaking writing technology of his time—in the late 19th century. Despite encountering technical challenges, Nietzsche recognized the profound impact of this new tool, observing that "our writing tools are also working on our thoughts" (Kittler, 1999, p. 200, cited in Ching, 2018). This insight highlights how writing instruments influence users' cognitive processes, shaping

their perceptions, emotions, and intellectual endeavors. As we advance nearly a century from Nietzsche's reflection, we encounter Jacques Derrida's contemplation of the nature of word processing. Derrida's experience with the Mac computer, a device far more complex than Nietzsche's typewriter, evokes a sense of both fascination and apprehension. He describes the computer as an entity that restores a form of *immediacy* to text, making it more fluid and akin to speech (Derrida, 2005, p. 23). However, Derrida also expresses a candid hesitancy, attributing it to an unfamiliarity with what he calls the "internal demon" of the computer – with its humming, glowing, blinking presence that is not present in pens or typewriters (p. 23). He believes that the internal mechanisms of these machines surpass human comprehension, making one feel as if they were dealing with a "soul or desire" of an "other unconscious" (p. 23) that challenges our understanding of tools as inert instruments. In his view, it should take a great degree of confidence to trust what he referred to as a "strange whisperer" (p. 27) on which the processed text appears *ethereal* (p. 30) and less *corporeal*.

Examining Derrida's experience through the lens of Freud's "uncanny" can yield a deeper understanding of his reservations. The *uncanny*, as Freud describes, is the eerie feeling arising from something being both familiar and simultaneously alien or strange (Freud, 1976). In Derrida's case, the computer, a tool he utilizes for writing, is familiar to him much like a pen or a typewriter. Yet, its intricate and opaque mechanisms, which he refers to as an internal demon, strike him as decidedly unfamiliar, much like an animate mystifying entity with a seeming consciousness of its own. Like encountering a sentient doll or an animated inanimate object in Freud's examples of the uncanny, Derrida's interaction with his computer straddles the line between the animate and the inanimate, the comprehensible and the incomprehensible, resulting in a disquieting sensation of both recognizing and being estranged from this "strange whisperer". Drawing on this understanding, we can see that Derrida's interaction with his computer is not simply about the application of a tool; it is a relational process involving human, machine, and their shared milieu. Simondon (2017) offers a perspective in which the "strange whisperer" is viewed more than just a complex technical object; it is a construct interlaced with human essence *crystallized* within its code and mechanics (p. 18), which Derrida may have felt apprehensive about because of its apparent self-regulation and potential hegemony. Yet, from a Simondonian angle, this "strange whisperer" is not merely external or alien; it is intrinsically bound to the human condition, reflecting our characteristics, desires, and limitations. In Derrida's interaction with his Mac, he is engaged in a reciprocal dynamic, rather than a simple and unilateral user-tool relationship. This dynamic is uniquely marked by a tension between control and release, between the known and the unknown, and between the visible and the opaque. The shift from tangible media to digital platforms represents more than a simple change in the physical realm of writing; it signifies a profound transformation in the phenomenological landscape of human-tool relations. Although this conception incorporates a sense of unease or uncanniness that Derrida experienced, it does not negate it. Rather, it situates it within a complex frame of human-tool. In other words, far from being merely instrumental, these interactions are imbued with a sense of communal sharing and partnership. In engaging with the ideas posed by Walter Benjamin, one discerns an intricate depiction of the human-tool relationship as a multifaceted interaction, one that transcends simple utility and enters the realm of existential entwinement. Benjamin posits that the objects we create not only serve to mirror our own selves, but also actively participate in shaping the milieu in which they exist. These objects, then, are not inert entities; they engage in dialogue with their own form and function, while simultaneously mediating our engagement with the world. It is through this mediating role that our relationships with objects often oscillate between possessiveness and practicality, fostering a sense of ownership that Benjamin identifies as the most intimate connection one can establish with an object. However, he elucidates that this ownership does not animate the object within the bounds of the human experience; rather, it is within the object that the human finds a space to "live" (Benjamin, 1999). This intimate bond

shows that our interactions with objects are pervaded by a collective essence or communality, irrespective of whether this shared nature is acknowledged.

Building on Benjamin's thesis, the Deleuzoguattarian framework offers a compelling extension to his exploration of the human-object nexus. Deleuze and Guattari (1987) dismantle the conventional, unidirectional paradigms of interaction by asserting the existence of a "plane of immanence," where all entities—human and non-human—are intermeshed in a network of relations that defy linear causality[3]. This conceptual matrix is enclosed in their contention that "a line of becoming has neither beginning nor end, departure nor arrival, origin nor destination" (p. 293). This perspective enriches Benjamin's insights by situating the notion of ownership within a broader, more dynamic process of technogenetic becoming. In this light, ownership is reimagined not as an end state of control but as a perpetual unfolding within the interstices of the human-object relationship. Thus, the synthesis of Benjamin's reflections with Deleuzoguattarian philosophy serves me to illuminate the ways in which objects and humans co-constitute one another, participating in a constant flux of reciprocal influence and transformation. The concept of the human living within the object is recontextualized as an assemblage—a coming-together of *heterogeneous* elements that continuously engenders new configurations of existence and experience. In recognizing this, we are invited to reconsider the very essence of ownership, communality, and the relational fabric that weaves together the technological landscape with the human state. In other words, in engaging with and utilizing technical tools, these instruments encapsulate aspects of their users, challenging the traditional dynamics of control. As such, the human becomes an object among objects. At the heart of this ownership lies a *desire* on both the human and the object side to *extend*–a lure to become more. This is not simply a subject-less or an object-less coupling, but an *action*-filled one. Human-tool coupling becomes irreducible to the material specificities of the object or the social qualities of the human, but something more. Thus, technological mediations, in the case of writing, are reciprocally transformative and *maximizing*, not just for the tool but also for the writer. It is neither the writer nor the tool that writes, but the open, connective, creative, proliferating whole. Our development of awareness requires that we turn toward this relationality as a becoming with phenomena as they are constituted as something graspable, meaningful, and significant. This awareness, facilitated through technical and intersubjective interactions with various tools, underscores our continuous reinvention through the artifacts we create and the competencies we cultivate. The traditional epistemic stance, which often enshrines the human subject as the prime mover and arbiter of technological use and development, is disrupted by this Deleuzoguattarian (1987) contention that the point of departure is always the *in-between*, "running perpendicular to both" (p. 293) writer or tool, thereby advocating for a reconceptualization of agency and interaction that transcends human-centric perspectives and situates the dynamic processes of becoming, connection, and multiplicity at the core of technological entanglements. Such perpendicularity highlights a multi-vectorial approach to relationality, where human and object are not *endpoints* but rather part of a continuous field of interaction and mutual transformation. Within this interstitial space, or gulf, following Hookway's terminology, agency is dispersed across a network, delineating the locus where the network's emergent traits—or what may be called the *technological landscape*—are negotiated and actualized.

Further reflecting on the concept of in-betweenness, Deleuze and Guattari (1987) insist that "the beginning always begins in-between" (p. 329), a statement that dismantles the primacy of the human as the sole initiator of action. This stance compels us to rethink the human-object

[3] For example, in the context of writing with LLMs, the "plane of immanence" can be understood as the shared creative space where the writer and the AI tool interact, generating new ideas and content. Where "lines of becoming" can be seen as the trajectories of this interaction, leading to the emergence of novel writing styles, genres, or forms of expression.

coupling as a dynamic, ever-evolving entanglement, wherein the human is not the solitary creator but a participant in a broader process of becoming. Recognizing this, the previous analysis of the technological landscape needs to be expanded to account for the myriad ways in which objects and humans co-constitute each other. Our tools and instruments—be they computers, writing software, or the humble pen—do not just serve our purposes but actively shape our capacities, our forms of expression, and ultimately, our very being. Hence, applying Deleuze and Guattari's notions of points, lines of becoming, and perpetual in-betweenness serves not only to revise but also to significantly deepen the examination of the interplay between humanity and technology. By anchoring the analysis in these concepts, I aim to transcend the limitations of a unidirectional, human-centered perspective and embrace a more holistic understanding of the complex, interdependent networks that define our interactions with the material world. This (re)framing not only aligns with the overarching aims of the article, encompassing the discourse on writing with AI and LLMs, but also provides a lively theoretical foundation that supports a more nuanced exploration of the entwined processes of human and object becoming. Transitioning from the historical insights of Nietzsche and Derrida, I now advance toward examining the role of AI and 2s in contemporary writing. This progression from mechanical and digital tools to AI signifies an important development in the study of writing technologies. In the ensuing discussion, I aim to critically examine the implications of AI on creative processes, exploring the nuanced debates around authorship, agency, and creativity within this technological context.

2.2 INFORMATION DYNAMICS AND AI IN WRITING

Modern language modeling is the task of unsupervised training for string and sequence prediction tasks, that is, evaluating the likelihood of a token[4] given either its preceding or surrounding context. This area of natural language processing has witnessed major paradigm shifts in approaching the problem. The foundational work of Bell Laboratories engineer Claude Shannon in 1949 set the stage for these developments, with substantial progress materializing in the 1980s through applications in automatic speech recognition, machine translation, and various classification tasks (Rosenfeld, 2000). The integration of AI and machine learning into writing practices has ignited extensive theoretical and philosophical discussions on the concepts of authorship, agency and the nature of creative labor. These discussions are informed by a rich interdisciplinary mix of epistemology, ontology, aesthetics, and the ethics of engaging with contemporary computational technologies in writing. Central to these discussions is a fundamental reevaluation of the concept of information, drawing on the contrasting theories of Claude Shannon and Gilbert Simondon, which I believe are crucial for deepening our understanding in this context. Shannon's work (1949) defined information in terms of quantifiable predictability, where a message's content is measured by its unlikelihood within a given probabilistic framework. In contrast, Simondon's approach (2020) to information offers a dynamic interpretation, viewing it as the product of tensions and disparities (p. 11). These tensions and disparities are not conflicts or contradictions but are essential for the process of individuation, which is central to his formulation, where something new and stable emerges from a previously unstable, metastable state (p. 5). He positions individuation as "an event and an operation within a reality that is richer than the individual that results from it" (Simondon, 2020, p. 53). Tensions and disparities serve as catalysts for change and evolution in both informational and biological contexts. Therefore, for Simondon, information is not just a

[4] In the context of language modelling, a "token" typically represents the smallest unit of processing, which can be a word, part of a word, or even a single character, depending on the tokenizer's granularity. Tokenizers dissect text into these units for a language model to analyze and predict. Thus, when discussing the likelihood of a token, it refers to the model's capability to predict or determine the probability of encountering a specific token based on the tokens that precede or surround it in the text. This is a fundamental aspect of training language models to handle tasks like text generation, machine translation, or semantic analysis.

transmitter of signals, but also acts as a generative force that facilitates the convergence of disparate realities, resulting in the creation of new and complex formations (Simondon, 2020, pp. 5, 11). The dichotomy between Shannon's static model and Simondon's dynamic process is particularly relevant in the context of AI writing. AI writing tools have moved beyond *prescriptive* rule-based operations to embrace statistically driven neural suggestions based on complex algorithms. This transformation warrants detailed exploration through a post-phenomenological lens, focusing on the lived experience of writing, the mediating role of technology, and the transition from human-as-sole-creator to a collaborative human-machine dynamic. Simondon's perspective profoundly enriches the discourse on human-tool interaction by illustrating the catalytic role of information in this interplay, effectively bridging disparities to foster the emergence of novel complexities. This stands in contrast to Shannon's model, which is fundamentally anchored in the quantification and regulation of information. Simondon conceives information as a qualitative, generative force. It is through this conceptual lens that the nuanced interplay between *differentiation* and *integration*, facilitated by artificial intelligence in the creative process, can be fully appreciated.

Digging deeper into this comparison, if Shannon's conception of information is visualized as delineating the relationship between a dynamic entity and its relatively stable context, Simondon's notion of information can be envisaged as the interrelation between two dynamically evolving entities. The convergence of these entities culminates in the creation of a context that is significantly *more* intricate than the mere aggregation of its constituent elements. While Shannon's framework treats information as a quantitative and regulative variable, Simondon's perspective champions a qualitative and generative approach. Simondon's focus is not on the quantification or measurement of differences, but on the *reconciliation* of these differences at a specific order of magnitude, in such a manner that their synthesis engenders an outcome of heightened complexity and intensity at a superior order of magnitude. Simondon's information can thus be described as a *differential force* that reconciles variances across magnitudes, catalyzing further intensive differentiation processes. This conceptualization positions Simondon's information not just as an *epiphenomenon* of difference, akin to Shannon's information, but also as a foundational catalyst for other epiphenomena (Hoelscher, 2021, p. 27) as well. Simondon's information operates at profound levels of interaction and transformation, serving not only as an epiphenomenon in its own right but also as a facilitator of more complex and intensive forms of differentiation and integration. In this light, Simondon's theory offers a richer, more dynamic understanding of information's role in the creative interplay between humans and machines, emphasizing the generative potential of *qualitative differences* in engendering novel complexities.

3 REFRAMING WRITER-TOOL INTERACTIONS

The essence of writing is significantly influenced by the tools we use, manifesting differently across mediums and epochs. Historically, writing was viewed as an all-encompassing activity that engaged the whole body, demanding endurance and discipline, as Ingold (2015) observes. The writer had to achieve a seamless union with their instrument, whether a pencil or a quill, through diligent practice until this interaction evolved into an instinctive process. Ong (2013) refers to this technogenetic becoming as the "interiorization of technology," where the act of manual writing involves the entire body, particularly the hand. It is important to note that even traditional handwriting does not eschew technology; using a pen involves a degree of instrumentality, regular replication, and mechanical iterability.

In the realm of contemporary AI word processors, our engagement with text undergoes a profound transformation, moving beyond the traditional view of writing as a fluid, gestural act that embodies the interconnectedness of life's processes—a concept that Ingold (2015) vividly captures with his emphasis on the continuity and fluidity inherent in manual writing. Instead,

inspired by Ihde's (2009) explorations of the human-technology nexus, language in the digital age is reimagined as composed of discrete, modular blocks. These digital text assemblies are not randomly constructed, but are shaped by sophisticated patterns uncovered through advanced statistical analyses and neural network algorithms. This shift marks a leap in technological capability and signals a sophisticated recalibration of our conceptualization of language itself.

Moreover, Heidegger's conceptualization of thinking as a form of *handiwork*, as expounded by Derrida (1985), posits a foundational action that exists before any dichotomy between practical activity and theoretical contemplation (Derrida, 2005, p. 21). This distinction becomes particularly salient in the context of *handwriting* versus *typing*. According to Ingold (2007, p. 3), the modern writer is a "wordsmith," who creates verbal constructs that are materialized through mechanical means—a process fundamentally different from traditional handwriting. Yet resorting to typing does not entirely disengage the hand; rather, it involves the hand in a new form of interaction—one of different commands, inductions, and engagements (Derrida, 2005, p. 21). The computer's interface disrupts the direct, tactile engagement of the hand with the page, distributing and diluting the manual "ductus" that once guided the pen (Ingold, 2007). Consequently, writing on a computer minimizes the writerly aesthetic risk and the need for manual dexterity traditionally associated with handwriting, as word processors automatically correct errors in grammar, spelling, and punctuation. Advanced features, such as paraphrasing, adjusting tone, detecting sentiment, checking for plagiarism, and even generating text sequences, represent a significant departure from traditional writing risks, introducing instead a novel form of *uncertainty* rooted in the *opaque* workings of complex statistical language models. I revisit the concepts of uncertainty and indeterminacy in section 3.2.

Within the intricate web of AI's complexities, the sophisticated algorithms that fuel modern word processors do more than aid the mechanical facets of writing; they enter into a form of co-creation, blurring the lines between human intentionality and technological mediation. In other words, the underlying neural algorithms not only extend human thought but also emerge as active participants in the creative process, reshaping the essence of the written word itself. In sections 3.1 to 3.2, my focus shifts to the complex relationship between humans and digital tools, examining software complexity, AI essence, and co-creative potential in AI-assisted writing, prompting a reevaluation of writing, author identity, and the creative process.

3.1 LOCUS OF COMPLEXITY AND INTENTIONALITY

As technology advances, it increasingly divorces itself from its tangible, material essence, shrinking opportunities for us to physically and intuitively engage with it. This phenomenon is particularly pronounced in the realm of software development, a sector often overlooked in computational tool analyses. The continuous enhancement and complexity of software systems render their internal mechanics progressively impenetrable and obscure to users. This evolution, driven by a design philosophy that champions user-friendly interfaces, results in a deliberate concealment of the operational complexity behind sleek, intuitive, and appealing user interfaces. The principle that simplicity equates to goodness underpins this approach, creating a stark contrast between the accessible facade of software applications and their complex, labyrinthine back-end processes. The incorporation of AI technologies into everyday software has prompted efforts by tech companies to further refine user experiences, aiming to demystify black-boxed decision-making processes and enhance interpretability. Yet, the tension between the allure of simplicity and the challenges posed by complexity has been a central theme in Human-Computer Interaction (HCI) discourse from the outset.

The discussion of black boxes, as delineated by Galloway (2021), offers a useful perspective through which we can examine the dichotomy between surface simplicity and underlying complexity. Galloway theorizes that black boxes operate as either *cyphers* or operational *functions*, encapsulating the transformation of technology from transparent, mechanical

systems to opaque, computational ones. Marx (2004), in his use of the black box cypher in Capital, articulates a dual nature within these artifacts—a "rational kernel" enveloped by a "mystical shell." This metaphor resonates with the current trajectory of software development, where the rational, operational core of technologies like LLMs is shrouded into a mystical, inaccessible exterior. The mechanical typewriter, as a cypher black box, captivates through its internal mechanisms alone, a stark contrast to the electrical typewriters, Derrida's Mac, and contemporary Generative AI word processors. These modern artifacts embody black-box *functions*, signifying a departure from the direct, tangible interaction of Marx's concept to one where the interface mediates our engagement with the machine's complexity. In my pursuit of navigating beyond the traditional binary view of technology as either simply accessible or overwhelmingly complex, I aim to establish a more balanced understanding of the intricacies inherent in LLMs and their impact on co-creative writing processes. This effort seeks to break from a dichotomous view in the hope of arriving at a flattened, neutral space (perhaps at the risk of wishful thinking). This and the following sections propose a benign formulation of LLM complexity and uncertainty, and how it could contribute to co-creative writing configurations. I argue that the intricate complexity of LLMs creates a dynamic interdependence between humans and digital tools, marked by a significant shift in the locus of intentionality. This shift demonstrates that the complexity of technology actively shapes and influences human creativity, suggesting that technology is an active participant in creative processes where changes in technology directly affect how we perceive and enact intentionality.

The locus of complexity and intentionality are both set in motion in LLMs, no longer mainly confined to the exterior or the interior of the artifact; it is extended to the space *in-between* the user and the machine, channeled *through* the use of the artifact. Ippolito et al. (2022) report in a study that writers' diverse conceptualizations of these systems illustrate this dynamic relationship. For instance, poet Michelle Taransky envisions the AI as "a combination of a many-many sided dice rolling next to many intricately linked simultaneous Google searches of the entire Internet as it existed when Wordcraft [LLM-powered writing assistant used in their study] was made." This metaphorical understanding reveals how writers grapple with and make sense of the system's complexity. Similarly, short story writer Wole Talabi conceptualizes AI as a database with an additional layer of language rules that combine to generate coherent text.

Ippolito et al. (2022) further report that some participants in their study anthropomorphized the AI writing assistant, treating it like a collaborative partner. For example, poet Eugenia Triantafyllou described in their usage diary needing to name the AI behind the tool: "Bot' seemed both too generic and somewhat disrespectful. I finally settled on Rain Man, in honor of the 1988 Rain Man movie. Hoffman plays an institutionalized savant who has special powers of mind alongside serious deficits." Similarly, author Ken Liu, a short story writer, discussed how "attributing intention to AI is a form of magical thinking... It's like mental scaffolding needed to facilitate the use of LLM [originally referred to as LaMDA in Ippolito et al. (2022); hereafter referred to as LLM] in the story composition process." In contrast, other participants preferred to conceptualize the AI writing tool in more utilitarian terms, similar to previous technologies like typewriters and word processors. Aaron Winslow saw it as a way to accelerate the writing process, while poet Diana Hamilton explained avoiding the chatbot interface because they disliked the "pretense" of talking to a person. These diverse perspectives illustrate the varying ways writers relate to and make sense of the complex AI systems they interact with, either projecting human-like qualities and agency onto the AI or maintaining a view of it as an inanimate tool for augmenting writing. The metaphors and comparisons they employ provide a glimpse into how writers grapple with the opaque complexity of LLMs as they mediate the writing process.

Additionally, these varying interpretations demonstrate how, despite the simplified interface, users might mistakenly equate what is actually a high degree of mediated complexity (Janlert,

2017, p. 89) with the intrinsic complexity of the LLM writing artifact. This stems from the fact that LLMs operate through complex interactions in a *transparent* or rational space, in which no particular demand is placed on the user's skills. Transparency is a realm in which the theoretical ideal is to metaphorically strip an object of its material, and physical presence, rendering it virtually invisible. In this configuration, variations in the degree and scale of the internal complexities of either the writing machine or the writer are mutually compensated by the other in a dynamically mediated relational space.

Expanding upon the dynamics between writers and LLMs, Verbeek (2005) differentiates between "cyborg intentionality" and "composite intentionality," enriching our understanding of the interplay between human and technological intentionality. For Verbeek, "cyborg intentionality" signifies a profound integration between the human and the technological artifact, resulting in a new, hybrid entity (p. 391). This integration is not just functional, but ontological, altering the entity's way of experiencing the world beyond the capabilities of either component alone. This is seen in examples like vision-enhancing implants or artificial heart valves, which embody a fusion that blurs the distinctions between the biological and technological. In contrast, for him, "composite intentionality" is characterized by a cooperative yet distinct interaction between human and technological agents (p. 392). This concept does not imply a fusion into a singular being, but rather a partnership where each retains its identity while contributing to a shared purpose. Technologies, under this framework, possess their own "directedness" (p. 392) towards reality, which, when aligned with human intentionality, gives rise to composite intentionality. Technologies such as sound recorders, which perceive reality in ways distinct from human senses, exemplify how these separate yet aligned intentionalities can coalesce.

While postphenomenology offers a fertile ground for empirical studies that aim to reconceptualize intentionality within the intersections of technology, subject, and object, it encounters limitations, as highlighted by Mykhailov & Liberati (2023). The critique emphasizes that postphenomenology primarily frames technology as a mediator in a subject-object relationship, inadvertently marginalizing technology as merely supplementary rather than recognizing it as a distinct entity of interest. This perspective suggests a potential oversight in postphenomenology's ability to fully capture the multifaceted roles that technology can embody beyond mere mediation. Furthermore, Mykhailov & Liberati (2023) critique the tendency within postphenomenology, as seen in Verbeek's notion of cyborg intentionality, to adopt a reductionist stance that prioritizes human intentionality, thus diminishing the agency and transformative capacity of technologies themselves. The concept of composite intentionality, while insightful, tends to subordinate technological intentionality to human intentionality, thereby underplaying the independent directedness and potential of technology. This reductionism within the theory of mediation overlooks the autonomous agency or intentionality technologies might wield, focusing instead on their role in mediating human experiences and intentions rather than exploring their unique contributions (p. 6).

In response to these limitations, I propose a more expansive framework in this article, drawing on Deleuzoguattarian and Simondonian perspectives on information and becoming. This approach diverges from postphenomenology's experiential and phenomenological commitments, instead advocating for a broader and more inclusive ontology. Deleuzian and Simondonian theories prompt a shift from a human-centric view to a distributed, relational ontology that more adequately addresses the complexity and processual nature of technological mediations. Building upon these theoretical insights, the next section, 3.2, delves into contemporary technological artifacts. These artifacts boast neural architectures, which embody the complexity and processual nature of technology that our expanded framework aims to understand. Navigating the realms of indeterminacy and co-creativity within the adjacent possibility space, we engage with the inherent opacity of machine learning (ML) technologies.

This opacity, central to debates on explainable AI, highlights the ethical and societal challenges intertwined with our growing reliance on AI systems.

3.2 INDETERMINACY AND CO-CREATIVITY IN ADJACENT POSSIBILITY SPACE

Contemporary life is now marked by the presence of sophisticated, hidden technological artifacts. Characterized by complex, multi-layered neural designs, these systems operate in ways that are not fully transparent. This opacity is a key issue in AI research, particularly in the context of explainable or interpretable machine learning. This subfield aims to create AI systems that provide clear explanations of their decision-making processes, addressing the black box problem and ensuring fairness, accountability, and trust in AI-generated outputs. Within an empirical-analytical framework proposed by Ihde (1990), a variety of relational typologies between humans and technology are delineated. Among these concepts, "background relations" is especially relevant, describing how technology integrates into and evolves with our experiential context, thereby adding a distinct "texture" to these experiences. This idea of texturing corresponds with the post-phenomenological view of how generative LLMs shape our interactions with text. Interestingly, this idea resonates with Roland Barthes' (1975) discussion in *The Pleasure of the Text*, where he describes a process of "perpetual interweaving," leading to the "unmaking" of the writing subject and its dissolution within the tapestry of their own creation, akin to "a spider dissolving in the constructive secretions of its web" (p. 64). This process might be more delicately described as a perpendicular technogenetic becoming, in which the boundaries between the creator and the creation become fluid and porous. In this dynamic, LLMs–reminiscent of Barthes' metaphorical spider–craft intricate webs of language that emerge from a synergy of intentionality and autonomous computational creativity. This interplay underscores more than the mere convergence of human and technological capabilities; it signifies a transformation of the very nature of textual creation, where the distinction between writer and written blurs, ushering in an era of digital interactivity marked by more integrated collaboration.

The outputs of LLMs, often referred to as "stochastic parrots" (Bender et al., 2021), surpass traditional human-guided processes, displaying a unique blend of complexity and unpredictability that develops autonomously. By retroactively learning and re-conceiving their previous states, they draw upon and impose their present suggestions, and lend a shaping to their subsequent results. This form of content generation based on preceding sequences helps bring the agential capacities of these tools as actants to the fore. However, the directionality of the decisions these models make is constrained by their training data, manifesting what Leahu (2016) terms as an "ontological surprise." The surreal and unexpected agency of LLM outputs has also been noted by various authors in Ippolito et al. (2022)'s study. For instance, an LLM suggested a "wolf plucking petals with human hands" to poet Diana Hamilton. It also proposed "an inanimate rod as man's best friend" (p. 8). Eugenia Triantafyllou, an author and short story writer, described the tone of these suggestions as "absurdist, spooky action at distance," which they found was well-suited for writing poetry. Ken Liu observed: "By taking the seed from the LLM and saying, "Yes, and …" I can force myself to go down routes I wasn't thinking of exploring and make new discoveries" (p. 8). These examples underscore how LLMs can introduce unexpected elements that spark creative exploration in writers.

Steven Johnson's concept of *adjacent possibility* can help explain the contours of the agency of generative writing. In his piece, *The Genius of the Tinkerer*, Johnson (2010) articulates the adjacent possible as a kind of shadow future, lingering on the fringes of the current state, representing a spectrum of all the ways in which the present might evolve. This perspective is cogent and helpful when considering ideas as outcomes of an intricate array of systems. However, it warrants additional elucidation. Johnson briefly proposes that ideas do not spring solely from the human subject as their originator, suggesting instead that they are "almost

invariably networks of other ideas," where the use of "other" falls short of capturing the material essence of these ideas. Turning our attention to LLMs, where the extent of the possibility space remains undefined, the boundaries of adjacent possibility are in perpetual flux, complicating any attempts to predict forthcoming developments. The contemporary writer is no longer an isolated subject, aloof from the tool (Ingold, 2007, p. 144), but a figure deeply "enriching the relational complexity, enabling more expansive and more encompassing fields of potential operation" (Hoelscher, 2021, p. 167). The dynamics within these fields of potential operation are not exclusively *generative*; they can also be *regulative*. LLMs possess the dual capacity to *broaden* or *restrict* the writer's creative domain, shaping the emergence of ideas through their intricate, emergent behaviors. These behaviors can simultaneously unveil new opportunities and enforce specific constraints on emergent possibilities within the adjacent possible for writing. This duality underscores the complex interplay between technological affordances and creative expression, highlighting how LLMs can serve as both catalysts and gatekeepers of creative potential.

3.3 AGENCY, AND SCOPE

The agency of tools that mediate our writing practices is attributed to their capacity to effect change, as Latour (2007) elucidates, "making some difference to a state of affairs" (p. 52) within a network of relationships. The agential capacity of writing tools to both extend and challenge the dynamics within the networks they engage with is evident, as discussed for Nietzsche and Derrida in section 2.1. The nature of the networks these tools are part of, and the roles each actor within these networks assumes, vary significantly due to their distinct capabilities and modes of interaction. For example, the agency of a pen as a non-digital tool is primarily physical and manual; it functions by leaving a spontaneous physical mark on a surface, serving as the lasting imprint of a manual gesture. This form of agency, though straightforward and directly observable through the act of writing onto the page, also includes moments when the pen may refuse to write, revealing a negotiable and exertable aspect of its agency through material failures. In contrast, LLMs, as digital and algorithmic objects, exhibit agency not only through the output of text but also through the processing and synthesizing of vast amounts of data. LLMs operate within significantly more complex networks compared to traditional writing tools. While the network that a pen enables might include the writer, the paper, the ballpoint, and the ink, LLMs are part of expansive digital and computational networks that include data sources, algorithms, developers, users, and even other AI systems. These networks are highly multidimensional, involving continuous interactions and data exchanges that far exceed the simple, linear relationship between a pen and paper. Additionally, unlike simpler tools such as pens, LLMs embody a far more complex level of *interfacing*. LLMs are not just tools; they function as *nodes* within extensive networks that include vast data repositories, reinforcement learning frameworks, and regulatory algorithms, significantly expanding their scope and impact within the writing process.

On the technical front, interestingly, LLMs are increasingly employed as language agents within complex settings, utilizing middleware to enhance their functionalities. The integration of LLMs with external tools, optimized through graph-based approaches, can significantly enhance their reasoning capabilities (Cao, 2023). The development of agentic LLMs involves autonomous agents that delegate tasks among themselves, either directionally or non-directionally, in sequential or dynamic workflows. This creates an intriguing scenario where the writer acts as one of many agents within a network of LLM agents. Presently, platforms like *Langchain*[5] and *CrewAI*[6] exemplify such agentic frameworks, offering diverse methodologies for establishing task-based agentic workflows.

[5] https://github.com/langchain-ai/langchain
[6] https://github.com/crewAIInc/crewAI

4 NAVIGATING THE WRITER-AI SPACE: IMPLICATIONS AND REFLECTIONS

Objects, including technological artifacts, possess a capacity for meaningful utterances, communicating with their sensible surroundings. This is more so salient in AI systems, such as LLMs, which are recognized for their enhanced levels of interactivity and responsiveness. In a post-phenomenological framework, both intelligent and non-intelligent objects are analyzed for how they mediate human experiences. While this approach enriches our understanding of human-technology interactions, it risks adumbrating the deeper philosophical underpinnings and linguistic frameworks embedded within these technologies. Specifically, it might not adequately address the Cartesian humanist principles that often shape software development—principles that emphasize a clear division and dominance of human cognition over the material, technological world. This oversight can allow prevailing biases and specific linguistic structures within technology to go unexamined, as the focus remains on surface interactions rather than the foundational ideologies that inform the design and operation of these systems. By not probing these deeper layers, post-phenomenology may inadvertently sustain the traditional biases and worldviews encoded in technological artifacts, thus missing an opportunity for a more critical examination of how technologies influence and are influenced by human values and assumptions. The textual data underlying LLM training are not essentially *read* by machines but *processed*. In other words, the generated content is the result of statistical probabilistic evaluations of contextual word representations that encode linguistic structure into predictable sequences. As discussed before in section 2.2, any meaningful sense of the produced content emerges as an epiphenomenon of human behavior previously collected, captured, and learned (Galloway, 2021). LLMs thus mirror our own cognitive biases and social prejudices (Gadiraju, 2023), sometimes acting as stochastic parrots. In other words, in writing with LLMs, we are not working in tandem with a form of intelligence coming from a conception of the world radically other, strange, and richly different from our own. Perhaps they only offer a sham facsimile of *wonder* – short-lived with no spontaneous affect (Abram, 2018). However insubstantial and self-undermining this endeavor of creating an intelligent non-human entity might be, our interactions with LLMs are deeply contextual (Lewis, 2018) and dynamic. Moreover, the relationships we form with LLMs, just like with any other AI artifacts, remain dependent on *intrinsic* dynamics and *extrinsic* conditions. Adopting Deacon's perspective provides a deeper understanding of AI, especially LLMs, highlighting their nature as a complex web of emergent phenomena. This view aligns with Simondon's conception of information, discussed before, as an epiphenomenon arising from differences between entropies (Deacon, 2011, p. 371), where what is missing—or the "hole" as he called it (p. 22)—catalyzes new formations. Deacon emphasizes the significance of "absential" elements– the significance of what is absent rather than present (p. 15). In the realm of AI, this perspective directs our attention to unexpressed potentialities and inherent absential qualities within AI interactions. Although these qualities are not overtly visible, they critically influence the evolution of AI technology and our understanding of its capabilities and impacts. In this Deaconian framework, we are encouraged to look beyond the superficial capabilities of LLMs and consider what they lack, particularly human-like qualities such as genuine understanding or consciousness. I argue that the evolutionary narrative of AI is as much about its latent capacities as its current functions. Deacon's exploration of *emergentism* (p. 159) leads us to a deeper philosophical interrogation: What constitutes *understanding* in an entity? According to Deacon, *understanding* transcends mere mechanical processing of information and involves a contextually interpretive act that imparts meaning. While LLMs are adept at parsing and predicting linguistic patterns, they do not partake in this interpretive process in a human-like manner, lacking the subjective experiential aspect, or *qualia*, which are integral to human understanding and consciousness. This distinction is vital in Deacon's philosophy, where consciousness is seen not as an incidental byproduct but as a central element of emergent phenomena (Deacon, 2011). Therefore, although LLMs mark a

significant stride in AI development, their capabilities when viewed through Deacon's lens of emergentism reveal a dual narrative. They mirror certain human abilities while fundamentally missing others, especially those absential qualities pivotal for true understanding and consciousness. This recognition not only delineates the inherent limitations of AI but also imparts valuable insights into human cognition and the intricate interplay between humans and their technological creations.

The view of technology I advance here discards any pretense of human dominance, suggesting that such a stance would negate responsibility for the unintended outcomes of our interactions with technology. It embraces what Latour (2012) describes as a "compositionist" modernity, which does not position human progress as an escape from nature or a descent from it, but rather as a deepening journey towards entanglement and familiarity with diverse non-human entities, suggesting a more interconnected existence. Latour uses the parable of Frankenstein to illustrate the folly of the modernist narrative of emancipation from nature. Latour illustrates this idea using Frankenstein, arguing that the real sin is not the creation of the monster, but rather the abandonment of the creation. This resonates with Sloan's (2023) characterization of LLMs as "monstrous"–not in a pejorative sense, but in recognition of their artificial, constrained nature, with the limitations and potential harms of LLMs arising from a failure to fully engage with and care for these creations, just as Frankenstein's monster became a criminal due to abandonment. Stuart Kauffman (2016), a researcher in complex systems, extends the Latourian compositionist view to the concept of emergentism in human interactions with the world. He proposes that individuals are drawn into the "adjacent possible," a realm of emergent opportunities that we often help to bring into existence, albeit unknowingly (p. 76). This perspective prompts a reevaluation of our role in the co-creation of future possibilities, emphasizing a shared journey with the nonhuman world.

In the treatment of writing, technologies like LLMs have become a chief modality in our practices, reshaping our interactions with text. However, as Sloan (2023) argues, LLMs operate within a limited world of text disconnected from the rich sensory reality that grounds human language. The constraints and limitations of these models show their artificial nature, even as they enable co-creativity within the adjacent possible space. Despite all limitations, the adoption of tools such as ChatGPT across various sectors–from academic to professional settings–underscores their utility and the ethical considerations they bring to the forefront. These models offer substantial benefits in terms of efficiency and productivity, yet they also raise significant ethical questions concerning plagiarism, preservation of originality, and transparency of AI involvement in creative processes. As Sloan (2023) suggests, the development of multimodal AI models, which incorporate diverse sensory inputs, may offer a path towards more grounded, contextually aware AI creativity. This points to the potential for a more nuanced and productive collaboration between human and machine creativity in the future, one that acknowledges the artificial nature of AI while harnessing its potential. Latour's call to "love your monsters"–to care for and take responsibility for our technological creations–provides a compelling framework for navigating this emerging landscape.

At a time when disentangling from the non-human world of technology seems impossible, recognizing the agency of these technologies helps us move away from simply representational or instrumental views of their utility. This awareness is crucial as we navigate the ethical landscapes these tools create, focusing on misinformation, manipulation, and the reinforcement of harmful stereotypes. In professional contexts, the lack of disclosure regarding AI involvement calls for greater transparency in managing stakeholders' expectations and trust. Moreover, the broader implications for academic integrity necessitate increased awareness among educators about the ethical and pedagogical challenges posed by these AI tools (Pack, 2024). In synthesizing the various perspectives and theoretical insights presented in this article, it is clear that the relationship between writers and LLMs is not just transactional but deeply

transformative. Examining historical, philosophical, and technological aspects reveals a complex network of interactions that redefines the nature of writing in the digital era. The integration of LLMs into writing practices goes beyond augmenting mechanical writing; it is reshaping the creative processes of writers. This assemblage challenges notions of authorship, creativity, and the very act of writing itself. As we advance into a technologically enriched future, it is imperative to remain critically engaged with these developments, ensuring that our ethical frameworks evolve to address the implications of deepening human-technology entanglements.

Data Access Statement

No new data was generated or analysed.

Contributor Statement

All authors contributed equally to the article.

Use of AI

During the preparation of this work, the author(s) used ChatGPT (OpenAI) and Claude (Anthropic) for paraphrasing and editing assistance. After using this tool/service, the author(s) reviewed, edited, made the content their own and validated the outcome as needed, and take(s) full responsibility for the content of the publication.

Funding Statement

The authors did not receive any financial support for the work on this article.

Conflict of Interest Statement

There is no conflict of interest.

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