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The authenticity gap: Why generative AI cannot replicate human creativity

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ABSTRACT

This article examines whether generative artificial intelligence (Gen-AI) can be considered creative when evaluated through a dynamic cross-cultural framework of creativity. Integrating the dynamic model of creativity (Corazza et al., 2022) with the four-criterion construct of creativity (Kharkhurin, 2014), the analysis evaluates Gen-AI across four dimensions: originality, effectiveness, aesthetics, and authenticity. The article advances the thesis that human and artificial creative potentials unfold through different architectures. Human creativity develops through integrative processes grounded in autobiographical experience, embodied perception, and evolving identity. Gen-AI systems expand creative search spaces through statistical learning and large-scale computational exploration. The analysis shows substantial convergence between human and artificial creativity in potential originality and effectiveness, and partial convergence in aesthetics. The principal divergence appears in authenticity. Authentic creative expression requires autobiographical grounding, reflective self-integration, and value-oriented interpretation of experience, capacities that current AI systems do not possess. Emerging technologies such as persistent memory architectures, agent-based systems, multimodal models, and quantum computing may expand the originality, effectiveness, and aesthetic range of AI-generated outputs, while only approximating surface-level features of authenticity. These findings suggest that Gen-AI can participate meaningfully in creative processes as a human-made, non-living tool, while lacking the experiential grounding that characterizes authentic human creativity. The article therefore positions Gen-AI as a collaborator and enhancer within cyber-creative processes whose value depends on human purposes, ethical responsibility, and cultural interpretation.

1. The ontological question of creative potential

Creativity has long been central to human progress, shaping cultures, technologies, and social systems. While many species exhibit culture (Boyd & Richerson, 1996), humans uniquely experience cumulative culture, where creative advances accumulate over time and reorganize social and technological environments (Lehman, 1947). Across history, technological innovations have reshaped societies, and the role of creativity has expanded and become increasingly democratized (Corazza, 2017).

Today, the unfolding technological transformation raises new questions about the nature of creative activity. Robots and automated systems increasingly perform tasks that previously required human labor and persistence. In a future shaped by advanced artificial intelligence (AI), routine activities may no longer dominate everyday life. Such a transformation raises a fundamental question: what will define human agency once survival-driven labor is reduced? One possible answer lies in creativity itself. Yet the rapid emergence of generative AI (Gen-AI) complicates this assumption by extending machine activity into domains traditionally associated with human creative expression.

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Gen-AI systems now generate artifacts in art, music, literature, and science that often resemble human creative products. Artificial agents[1] can produce outputs that rival or augment human work in novel ways (Colton & Wiggins, 2012). Generative text-to-image models such as DALL·E, Midjourney, and Stable Diffusion produce complex visual compositions, while large language models (LLMs) such as Generative Pre-trained Transformer (GPT) generate essays, stories, and analytical reports, assist with data interpretation, and support scientific discovery (Fui-Hoon Nah et al., 2023). In music, platforms such as Suno and Udio enable the production of compositions across multiple stylistic traditions.

These developments provoke both enthusiasm and unease. Many observers celebrate the expansion of creative tools. Others worry that AI systems may eventually displace human creators in domains once considered uniquely human (Corazza et al., 2025). The widely circulated twit by Joanna Maciejewska captures this tension: "I want AI to do my laundry and dishes so that I can do art and writing, not for AI to do my art and writing so that I can do my laundry and dishes." The concern expressed in such reactions points to a deeper conceptual problem that extends beyond technical performance.

The central question is therefore not simply whether Gen-AI can produce artifacts that appear creative. The deeper issue concerns the architecture of creative potential. Do human and artificial systems generate creativity through the same underlying structure, or do they represent fundamentally different modes of creative becoming?

This article addresses that question through conceptual analysis. The argument draws on a dynamic cross-cultural model of creativity that integrates the dynamic definition of creativity (Corazza, 2016; Corazza et al., 2022) with the four-criterion construct of creativity (4in1; Kharkhurin, 2014). Within this framework, creativity is expressed through four dimensions: originality, effectiveness, aesthetics, and authenticity. These dimensions provide a culturally inclusive and process-sensitive basis for comparing human and artificial creative activity.

The analysis is grounded in the thesis that Gen-AI can produce artifacts that meet several conventional criteria of creativity, yet human and artificial creative potentials emerge from fundamentally different architectures. The following sections first examine this architectural divergence and then compare human and Gen-AI creativity across originality, effectiveness, aesthetics, and authenticity.

2. Ontological architectures of creative potential

The dynamic cross-cultural model of creativity enables examination of creativity at the level of its underlying architecture. The question is not only whether artificial systems can produce novel outputs, but whether human and machine creative potentials unfold through the same ontological structure. Here, the architecture of creative potential refers to the configuration of processes and resources through which a system generates, develops, and evaluates novel ideas.

Human creativity develops through an integrative structure grounded in lived experience. Autobiographical memory, personal values, emotions, and identity-driven motivations shape creative exploration. Ideas emerge within an evolving narrative of the Self. As creative work enters sociocultural contexts, feedback from audiences and institutions can become incorporated into this narrative. External reception thus influences the creator's internal organization and future creative trajectories.

Gen-AI systems operate through an expansive computational architecture. Their outputs are produced through operations on large datasets, probabilistic modeling, and statistical pattern learning. During the generative stage, artificial systems recombine patterns learned from training data to produce new configurations. Evaluation typically occurs through external mechanisms such as user feedback, reinforcement learning, or system optimization. These processes do not involve autobiographical memory, identity formation, or reflexive self-integration. A related distinction applies to learning: authentic human learning involves the active construction of meaning, whereas machine learning processes information without self-directed involvement in meaning-making (Runco, 2025a).

This distinction does not place Gen-AI outside the history of human creativity. Gen-AI systems are themselves products of cumulative human invention, scientific modeling, engineering, design, and cultural imagination. Their creative role is therefore derivative and mediated: they extend human creative agency through computational means, but they do not originate creative meaning from lived experience, selfhood, or moral reflection.

The difference between the two architectures can therefore be described as a divergence between integration and expansion. Human creativity integrates new ideas into an evolving structure of Self, meaning, and identity. Artificial creativity expands the space of possible outputs by scaling data, parameters, and computational processes. This divergence does not imply that artificial systems cannot generate novel or valuable artifacts. From an external evaluation perspective, AI-generated outputs may meet many conventional indicators of creativity. The crucial difference lies in the architecture used to generate and evaluate these outputs. The following sections examine the four dimensions of creativity to clarify where human and artificial creative potentials converge and diverge.

3. A dynamic cross-cultural framework of creativity

Determining whether Gen-AI participates in creativity requires conceptual clarity about what creativity is. This question has been debated extensively in the creativity literature. In the Western tradition, the standard definition of creativity (Runco & Jaeger, 2012) requires recognition by a particular field in a specific epoch of two core criteria: originality and effectiveness. Originality encompasses novelty and unexpectedness, whereas effectiveness refers to usefulness, value, or meaningfulness. This dual focus emerged in nineteenth- and early twentieth-century discussions and was clearly articulated by Stein (1953): "The creative work is a novel work that is accepted as tenable or useful or satisfying by a group at some point in time" (p. 311). Mayer (1999) similarly observed that most definitions summarized in *The Handbook of Creativity* (Sternberg, 1999) converge on novelty and utility as the central components of creativity.

Subsequent work has refined these criteria. Some scholars have emphasized non-obviousness as an additional criterion (Simonton, 2012; United States Patent & Trademark Office, 2024). Non-obviousness, however, can be understood as a necessary aspect of originality itself, since a product that merely extends an existing idea in an obvious way does not qualify as genuinely original (Corazza, 2016). Originality, therefore, requires both novelty and unexpectedness. Boden (2004) proposed that creativity involves novelty, surprise, and value. Surprise overlaps with non-obviousness, whereas value corresponds broadly to effectiveness. Piffer (2012) included impact as a further dimension, which can also be subsumed under effectiveness. Sternberg and Lubart (1995) added high quality to novelty and utility. Despite

[1] We use the term "agent" in a psychological context to refer to an entity capable of autonomous, intentional, and morally grounded actions, aligning with theories of human agency (Bandura, 2001). In contrast, we refer to "artificial agents" when discussing Gen-AI systems that simulate agent-like behavior – such as setting goals, producing sequences of outputs, or interacting adaptively with prompts – but do this without consciousness, introspection, or value-based reasoning. This distinction is crucial; it differentiates human agents, whose creative actions may be influenced by deeply held beliefs or emotional experiences, from Gen-AI agents, whose outputs are produced through statistical patterning and probabilistic optimization. By emphasizing this distinction, we highlight that while Gen-AI may mimic certain behavioral aspects of agency, it fundamentally lacks the core components that underpin genuine creative expression.

these variations, most Western formulations remain primarily product-oriented, evaluating creativity through observable outcomes.

In contrast, many Eastern perspectives emphasize the creative process and its role in personal development. Creativity is often associated with inner growth, personal fulfillment, and aesthetic satisfaction (Lubart, 1999; Raina, 1999; Westwood & Low, 2003). Kharkhurin (2014) integrated these perspectives into the *4in1* model of creativity. The model retains originality and effectiveness while adding aesthetics and authenticity. These four dimensions form a *culturally inclusive* framework that can be applied across creative domains.

The *aesthetics* dimension refers to the capacity of creative work to evoke meaningful and emotionally resonant experiences. Creative artifacts capture aspects of reality through configurations that combine order and complexity or balance and tension. Aesthetic sensitivity, therefore, contributes to creative potential by enabling individuals to express layered insight through perceptual and conceptual forms.

Authenticity extends the framework further. It concerns the alignment between a creator's values, identity, and expression and is often regarded as a cornerstone of human creativity (Kharkhurin, 2014; Runco, 2023b). In individualist traditions, authenticity is frequently interpreted as the expression of an inner Self or personal uniqueness, whereas in collectivist traditions it may involve harmonization with community and social expectations. Contemporary psychological research has conceptualized authenticity as a multidimensional construct encompassing self-awareness, unbiased processing, a relational orientation, and congruence between actions and values (Kernis & Goldman, 2006; Kharkhurin, R&R; Wood et al., 2008).

Some traditions extend authenticity into the spiritual or transcendental domain. Creativity has been described as a connection to universal truths or higher sources of meaning (Kharkhurin, 2015; Maslow, 1962). Artists frequently portray creative practice as a contemplative process that allows access to insights beyond ordinary cognition. Although such interpretations remain difficult to operationalize, they underscore the depth and complexity of authenticity as a structural dimension of creative life.

The emphasis on authenticity foregrounds the importance of process in creativity. Process refers to the introspective, exploratory, and iterative activity through which creative products emerge. Whereas originality, effectiveness, and aesthetics are often evaluated externally, authenticity highlights the creator's relationship to the work and the integration of personal experience into creative expression.

This process orientation was articulated in Corazza's (2016) dynamic definition of creativity, which conceptualized creativity as *potential for originality and effectiveness*. Creativity is not a static property but a dynamic unfolding characterized by possibility, uncertainty, estimation, and projection into the future. Creative trajectories often include periods of inconclusiveness, failure, or delayed recognition before eventual achievement (Corazza, 2020). Each creative act remains open-ended: every solution generates new possibilities, and every product can be reinterpreted or transformed. Importantly, this dynamic definition can be applied across the classic analytical perspectives of creativity: person, process, product, and press. Within each perspective, a distinct form of potential for originality and effectiveness can be identified (Corazza & Glăveanu, 2020). The development of creative potential in humans depends on factors such as tolerance of ambiguity (Zenasni et al., 2008) and self-regulation (Ivcevic & Nusbaum, 2017; Zielińska et al., 2025). However, the dynamic creativity framework extends beyond the human species, considering creative potential at four levels of complexity (material creativity, biological creativity, psycho-social creativity, and artificial creativity). Corazza (2019) integrated these levels into a Dynamic Universal Creative Process, which enabled co-creative collaboration between humans and machines.

Integrating the dynamic approach with the 4in1 model yields a dynamic cross-cultural architecture of creativity: creativity requires the potential for originality, effectiveness, aesthetics, and authenticity. These dimensions should not be interpreted as rigid or mutually exclusive criteria. Instead, they operate as interacting conditions within a multidimensional space (Kharkhurin, 2014). Creativity can therefore be evaluated through overlapping features rather than strict inclusion or exclusion, consistent with a family-resemblance perspective (Medin & Smith, 1984).

Within this framework, creativity is best understood as potentials that may or may not be realized in a given episode of creative activity. These potentials unfold into two broad phases: before and after novelty generation. The pre-generation phase refers to the internal processes that precede the emergence of a creative output. During this stage, motivation, knowledge, experience, and exploratory cognition shape the space of possible ideas (Corazza & Agnoli, 2022). The post-generation phase begins once an artifact or idea is produced and enters a sociocultural environment where it is interpreted, evaluated, and potentially adopted.

Distinguishing between these phases clarifies how creative potential develops and how it becomes socially recognized. The distinction between pre-generation and post-generation phases, therefore, provides an analytical tool for comparing human and artificial creative processes. It allows the present analysis to examine not only creative outputs but also the structural conditions through which originality, effectiveness, aesthetics, and authenticity emerge.

Many other frameworks have been proposed to explain creativity, including the 4Ps (Rhodes, 1961), Geneplore (Finke et al., 1992), the 5As (Glăveanu, 2013), the 7Cs (Lubart, 2017), and the 8Ps (Sternberg & Karami, 2022). These approaches provide valuable insights into creative individuals, cognitive mechanisms, and environmental influences. Nevertheless, we choose the dynamic cross-cultural model because it identifies dimensions observable in creative outputs while remaining sensitive to process and grounding. This combination makes the framework particularly suitable for comparing creativity across human and artificial agents.

4. Originality

Originality refers to the production of ideas or artifacts that are novel and unexpected within a given domain. Originality potential unfolds across both pre- and post-generation phases. In the former, originality emerges through exploratory processes that generate departures from existing patterns. In the latter, it becomes a matter of sociocultural recognition, where audiences and institutions evaluate whether an artifact appears novel relative to the current state of the art.

Gen-AI systems demonstrate substantial capacity for originality across both phases. Regarding the pre-generation phase, contemporary models are trained on datasets far exceeding the knowledge base any human individual could acquire in a lifetime. Combined with rapid retrieval and synthesis, this scale allows Gen-AI systems to recombine information at speeds and volumes that surpass human exploratory capacity (Corazza & Agnoli, 2022; Marcus & Davis, 2019). At present, however, these systems typically do not autonomously initiate creative goals. The initiating drive of the creative process usually remains dependent on human prompting.

Regarding the post-generation phase, the originality of AI-generated artifacts becomes visible across multiple creative domains. In visual art, generative models trained on large image corpora produce new compositions that echo existing artistic traditions without replicating them. A well-known example is the GAN-generated portrait "Edmond de Belamy," auctioned at Christie's (2018), which demonstrated that neural network outputs could be recognized as original works in the art market. More recent transformer-based image models such as Midjourney and DALL·E extend this capacity by producing stylistically diverse and contextually adaptive imagery. At the same time, debates about memorization and the reproduction of training fragments raise unresolved questions concerning authorship and originality in AI-generated art (Carlini et al., 2023; Rotolo, 2025).

Comparable dynamics appear in other domains. LLMs generate

stories, essays, and poems that recombine linguistic structures in unexpected ways. While grounded in learned linguistic patterns, these outputs exhibit combinational novelty and, as Veale et al. (2019) argued, syntactic creativity – the capacity to recombine grammatical and semantic units in ways not anticipated by humans. This aligns with the concept of linguistic creativity presented in Chomsky's (1965) theory of Generative Grammar, although in computational systems such generativity emerges through statistical pattern learning. In music, generative platforms such as Suno and Udio blend stylistic conventions from multiple genres, producing hybrid compositions that listeners often perceive as novel (Knotts & Paz, 2025). In science, AI systems explore problem spaces at unprecedented scales; AlphaFold, for example, predicted protein structures with a level of accuracy previously unattainable by earlier computational methods (Jumper et al., 2021).

These observations suggest that Gen-AI satisfies the criterion of originality in a meaningful sense. Its outputs often appear novel and surprising within their respective domains. At the same time, the mechanisms through which novelty emerges differ from those of human creators. AI systems generate originality primarily through large-scale statistical recombination and computational exploration of representational spaces. Human creators, by contrast, explore conceptual spaces through cognitive processes embedded in experience, interpretation, and meaning-making. Despite these differences in generative mechanisms, the observable outcomes of both processes can meet conventional criteria of originality within the post-generation phase of creative evaluation.

5. Effectiveness

Effectiveness concerns the value and impact of creative work for creators, audiences, and broader cultural or scientific communities (Kharkhurin, 2014). Effectiveness potential develops during the pre-generation phase through the framing of problems and the resources available for addressing them, and it becomes fully visible in the post-generation phase when creative outputs enter social contexts and produce consequences.

Gen-AI demonstrates substantial effectiveness across multiple domains. Transformer-based systems such as Med-PaLM 2 interpret and generate medical knowledge in natural language and achieve expert-level performance on medical licensing-style examinations (Singhal et al., 2023). By analyzing large medical datasets, these systems assist clinicians in diagnosis and treatment planning and support the development of new approaches to medical decision-making. Such applications illustrate how AI can contribute to effective problem-solving in complex knowledge environments.

Gen-AI tools also enhance effectiveness in the creative industries by augmenting human production processes. In visual design, generative systems provide layout suggestions, automate repetitive technical tasks, and propose stylistic variations. These capabilities allow artists and designers to concentrate on conceptual and expressive aspects of their work while computational systems handle production tasks that require speed and large-scale iteration.

AI has also generated cultural and scientific events that demonstrate effectiveness at broader societal scales. In the arts, the Christie's (2018) auction of the AI-generated portrait "Edmond de Belamy" marked a widely recognized moment in the commercialization of AI art. In science and engineering, AI-driven discoveries are beginning to influence research trajectories and technological development, sometimes with paradigm-shifting implications (Mohaghegh, 2024).

At the same time, evaluating effectiveness requires attention to ethical and societal consequences. AI-generated media has raised significant concerns related to misinformation, privacy, and algorithmic bias. Synthetic images, voices, and videos can impersonate individuals without consent, undermining trust and autonomy, while biased training data can reproduce social stereotypes at large scales (Bender et al., 2021). Questions of authorship and transparency further complicate evaluation, as AI-generated texts or media may mislead audiences if their origins are not disclosed (Floridi et al., 2018). These issues illustrate the darker side of cyber-creativity (Corazza et al., 2025).

These observations indicate that Gen-AI satisfies the effectiveness criterion in many practical contexts. AI systems produce outputs that creators and audiences value, contribute to cultural and scientific developments, and influence public discourse. The effectiveness of these systems, however, remains intertwined with ethical and societal challenges that shape how their contributions are interpreted and governed.

6. Aesthetics

The aesthetic dimension of creativity concerns a work's capacity to evoke resonance, balance, and emotional engagement while sustaining curiosity through complexity and tension (Kharkhurin, 2014). Rather than treating beauty or truth as fixed properties, aesthetic value in creativity emerges from arrangements of expressive elements that invite interpretation and reflection across cultural and individual contexts.

Gen-AI systems demonstrate many of these aesthetic properties in practice. In visual art, diffusion-based models such as Stable Diffusion or Midjourney produce images that capture textures, patterns of light and shadow, and stylistic coherence across complex compositions. These outputs often reveal layered structures that stimulate aesthetic appreciation through harmony and visual detail.

Comparable dynamics appear in other domains. In music, generative systems such as Suno and Udio create compositions that balance rhythm, melody, and structural symmetry while blending stylistic traditions from multiple genres. By combining elements from classical, jazz, and electronic music, these systems produce works that merge familiarity with surprise and generate aesthetic tension (Briot et al., 2020). In visual design, generative tools similarly combine color palettes and formal structures to produce coherent and often visually striking compositions.

Aesthetic impact may also emerge through the juxtaposition of coherence and contradiction. Generative models frequently combine naturalistic and surreal elements, producing images that are simultaneously recognizable and unsettling (Schmidhuber, 2010). In literature, LLMs generate poetry and prose that juxtapose unexpected images or condense emotional content into brief metaphors.

These observations suggest that generative AI can produce outputs that satisfy many aesthetic criteria of creativity, including order, harmony, meaningful complexity, and productive tension. At the same time, human aesthetic experience is deeply grounded in embodiment and perceptual memory. Embodiment anchors perception in lived bodily experience and shapes the felt quality of aesthetic response (Damasio, 1999; Gallagher, 2005; Varela et al., 1991). Over time, individuals accumulate rich perceptual memories that influence how they perceive rhythm, structure, and form (Barsalou, 2008; Eichenbaum, 2012; Schacter & Addis, 2007).

This embodied history contributes to what has been described as creative perception: the ability to recognize configurations in the world that carry aesthetic or creative potential (Kharkhurin & Charkhabi, 2021). Through this process, individuals may identify what Kharkhurin (2014) termed the "fundamental truth of nature," a configuration whose complexity resonates with perceptual experience. Gen-AI lacks such embodied perception and experiential memory. Its aesthetic outputs emerge through statistical relationships in training data and acquire aesthetic meaning primarily through human interpretation.

Thus, although Gen-AI can approximate aesthetic form and produce visually or sonically compelling artifacts, the experiential grounding of aesthetic perception remains characteristic of human creators. This distinction becomes even more pronounced when considering the final dimension of creativity: authenticity.

7. Authenticity

Authenticity introduces a different level of analysis and reveals the point at which human and artificial creative potentials diverge most clearly. It refers to the extent to which creative work expresses a creator's inner orientation while remaining aligned with personal values and broader cultural meaning (Kharkhurin, 2014). Across disciplines, authenticity has been associated with congruence between inner states and outward expression in psychology (Kernis & Goldman, 2006), the realization of one's true Self in existential philosophy (Heidegger, 1927/1962), and the preservation of origin or genuineness in cultural theory (Beverland, 2005; Trilling, 1972). These perspectives converge on the idea that authentic creativity arises from a structured relationship between personal experience, identity, and expression.

One way to conceptualize this relationship is through the distinction between the natural and the nurtured Self (cf., Gallagher, 2000). The former refers to the embodied, affective, and intuitive core of subjectivity. The latter reflects the narrative and symbolic structures acquired through socialization, language, and autobiographical experience. Authentic expression emerges when impulses rooted in the natural Self are articulated through the symbolic resources of the nurtured Self. This integrative process presupposes capacities for contemplation, emotional awareness, and value-directed self-evaluation that develop through lived experience.

Human creativity is therefore deeply connected to autobiographical grounding. Creative ideas emerge from personal traits, motivations, and self-beliefs (Kaufman & Sternberg, 2019), as well as from episodic memories and autobiographical narratives that give meaning and context to expression (Gerver et al., 2023). These experiences shape how creators interpret events, formulate problems, and express ideas. Gen-AI systems operate through a different architecture. They are trained on aggregated datasets and generate outputs through statistical generalization. Even when tailored to particular users, personalization reflects external adjustment rather than the development of intrinsic identity or value orientation (Colton et al., 2012). Without autobiographical memory or a subjective perspective, AI-generated artifacts cannot carry the same personal grounding that characterizes authentic human expression.

The experiential foundations of authenticity also include embodiment and perceptual memory. As discussed in the context of aesthetics, the lifetime of embodied engagement with the world shapes how individuals perceive rhythm, structure, and significance in creative work. Perceptual memory accumulates through experience and influences how creators identify patterns, tensions, or meaningful configurations in their environment.

Authenticity also manifests through vulnerability, imperfection, and creative struggle. Human creative practice frequently involves error, failure, and unintended outcomes that are later incorporated into the creative process as "happy accidents" (McCormack et al., 2019). Some artists even suggest that their work stems from acknowledging this fundamental error,[2] along with the accompanying frustration and the desire to reduce it. Rough brushstrokes, dissonant harmonies, or unfinished poetic phrases can signal expressive depth and the trace of a creative search that remains partially unresolved. Gen-AI systems, in contrast, are designed to minimize error through optimization procedures. Their outputs typically lack the unpredictability and expressive vulnerability that reveal a human creator's presence. Some artistic practices deliberately introduce algorithmic noise or glitches into AI-generated outputs to foreground errors. Even in such cases, the deviation from optimization is designed by human artists and remains externally induced rather than emerging from the system's own creative struggle.

Reflection and introspection further contribute to authentic creativity. Creative activity often becomes a site of self-discovery, where individuals examine their values, experiences, and identities. Practices such as meditation and deliberate self-reflection can deepen the relationship between creative expression and inner life (Hughes et al., 2023). Artificial systems do not engage in introspection. They process information through algorithmic optimization without self-awareness, moral evaluation, or reflective agency (Schmidhuber, 2010).

Many artistic and philosophical traditions extend authenticity beyond psychological alignment to include connections with broader sources of meaning. Creative practice has been interpreted as a way of engaging with universal truths or transcendent principles (Coleman, 1998; Kharkhurin, 2015; Maslow, 1962). Empirical studies also suggest that contemplative practices can foster spiritual development in creative contexts (e.g., Astin et al., 2010; Hari Narayanan, 2021). Gen-AI operates entirely within statistical and computational systems. While it may imitate stylistic features associated with human creativity, it does not participate in these experiential or transcendental dimensions of meaning.

The divergence becomes most evident when authenticity is examined across the pre- and post-generation phases of creative potential. In the pre-generation phase, human creators generate ideas through autobiographical experience and reflective valuation, so new ideas both arise from and shape the creator's evolving identity. Gen-AI produces candidate outputs through statistical recombination of training data, a process that lacks autobiographical grounding and reflective integration.

In the post-generation phase, human creators evaluate and reinterpret their work through introspection, moral orientation, and identity coherence. External reception becomes integrated into the creator's evolving self-model. AI systems evaluate outputs through optimization signals, user feedback, or external scoring mechanisms. These adjustments modify parameters but do not reorganize an internal identity structure.

For this reason, authenticity marks the most decisive boundary between human and artificial creativity. Gen-AI can produce artifacts that appear original, effective, and aesthetically compelling. However, these artifacts do not arise from autobiographical experience, reflective self-integration, or existential meaning-making. This conclusion is consistent with Runco's (2023a) argument that AI may produce artificial creativity, or pseudo-creativity, when its outputs satisfy product-level criteria while lacking the intentionality, authenticity, and human processes involved in creative expression. Advances in memory architectures, multimodal perception, or artificial agency may simulate outward aspects of authenticity, but they are unlikely to reproduce the lived experience and reflexive identity that ground authentic human creativity.

8. Human responsibility in cyber-creative processes

The preceding analysis can be represented as a comparative synthesis of human and artificial creative potential. Table 1 presents the main points of convergence and divergence across the dynamic cross-cultural framework. The table also highlights the ethical and cultural dynamics of human creativity as the activity of responsible living beings situated in social worlds, which is further developed in the final paragraph.

This divergence parallels earlier debates concerning artificial intelligence more broadly. Many AI systems achieve impressive performance on benchmarks associated with intelligence, including linguistic fluency, statistical generalization, and visual recognition (Bubeck et al., 2023; Chollet, 2019; Radford et al., 2021). Yet they often struggle with tasks that require deeper understanding or flexible reasoning (Dettki et al., 2025; Marcus & Davis, 2019). A similar pattern appears in creativity. Gen-AI can satisfy several formal criteria of creativity while remaining detached from the experiential and reflective processes that characterize authentic human creative expression. Recent evidence

[2] This idea was entertained in Kharkhurin's (2017) 3-channel verbal video installation "Lazy Contemplation."

Table 1
Human and generative AI creativity across the dynamic cross-cultural framework.

Dimension	Human creativity	Gen-AI creativity	Relation
Generative architecture	Integrative, autobiographical, embodied, and identity-based.	Expansive, statistical, data-driven, and computational.	Different architectures.
Originality	Novelty emerges through experience, interpretation, and meaning-making.	Novelty emerges through recombination and expansion of the search space.	Substantial convergence in outputs.
Effectiveness	Creative value includes usefulness, cultural impact, and responsibility.	Produces useful outputs in science, art, design, and communication.	Strong convergence, ethically conditional.
Aesthetics	Grounded in embodied perception, perceptual memory, and cultural sensibility.	Produces formal coherence, harmony, complexity, and tension.	Partial convergence.
Authenticity	Grounded in autobiographical memory, self-integration, values, vulnerability, and moral reflection.	Can simulate style and expressive continuity, but lacks lived experience and reflective identity.	Decisive divergence.
Ethical-cultural embeddedness	The creator is a responsible living being situated in cultural and social systems.	The system is a non-living tool embedded in human institutions and governed by human purposes.	Human responsibility remains primary.

comparing divergent creativity in humans and LLMs was consistent with this distinction: LLMs can perform strongly on specific tasks, but such performance does not mean that artificial systems replace the values, reflection, effort, emotion, and lived experience involved in human creativity (Bellemare-Pepin et al., 2026).

Future technological developments may expand the creative profile of AI systems. Advances in long-context memory architectures (Ding et al., 2023; Munkhdalai et al., 2024), agent-based systems capable of extended interaction (Libert, 2024), multimodal models integrating language with perceptual input (Yang et al., 2025), and emerging quantum computational approaches (Domingo et al., 2023; Klusch et al., 2024) may increase the originality, effectiveness, and aesthetic range of generative models. Such developments may also simulate surface features associated with authenticity, including stylistic continuity or distinctive expressive patterns. However, these capabilities do not establish the autobiographical grounding, reflective self-integration, or moral evaluation that characterize authentic human creativity.

Rather than replacing human creativity, Gen-AI is more productively understood as a participant in cyber-creative processes (Corazza et al., 2025). Gen-AI is itself a result of cumulative human creativity, emerging through scientific modeling, engineering, design, and cultural imagination. As a non-living tool, it can support human growth when integrated ethically and responsibly. Depending on interaction modality and domain integration, AI systems may function as assistants that automate technical tasks (Yin et al., 2024), sources of inspiration that generate unexpected ideas (Wyszynski et al., 2024), collaborators that co-produce variants under human guidance (Braguez, 2023; Kalving et al., 2024), augmenters that extend creative exploration in computational environments, or competitors that stimulate new benchmarks and challenges (Li et al., 2024). These roles expand the creative toolkit and reshape how ideas are generated, refined, and realized. They may also support science, education, design, accessibility, artistic practice, and other domains where creative work contributes to human flourishing.

The findings of this analysis, therefore, support a balanced perspective on artificial creativity. Gen-AI can contribute meaningfully to creative processes and produce outputs that satisfy several conventional criteria of creativity. At the same time, the integrative architecture through which human creators transform lived experience into creative expression remains distinct. Humans remain responsible for setting goals, interpreting outputs, assigning value, and evaluating consequences.

This responsibility reflects the inherently social nature of human creativity. Creative work is produced by living beings embedded in cultural communities, shaped by shared norms, values, and histories. It carries implications for others in terms of meaning, impact, and ethics. This consideration is especially consequential in education, where treating AI-generated pseudo-creativity as equivalent to authentic human creativity may redirect attention away from the human processes through which creative potential develops (Runco, 2025b).

Human creators thus provide the autobiographical grounding, reflective judgment, and ethical orientation through which creative work acquires personal and cultural significance. A productive partnership between human ingenuity and artificial generation may therefore expand the creative landscape while preserving the distinctive role of human creativity in cultural and intellectual development.

CRediT authorship contribution statement

Anatoliy V. Kharkhurin: Writing – review & editing, Writing – original draft, Project administration, Investigation, Formal analysis, Conceptualization. **Giovanni Emanuele Corazza:** Writing – review & editing, Investigation, Funding acquisition, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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