# New insights challenge biases in AI-generated art and creativity assessment



This comprehensive paper advances the discourse on creativity, art, and artificial intelligence (AI) by integrating cognitive psychology and empirical aesthetics insights into the AI creativity debate. It highlights two key domains: first, the operationalization of creativity through psychological indices in both closed- and open-ended tasks, and second, the aesthetic evaluation by lay observers of AI-generated artworks. This approach invites fresh empirical research inspired by psychological frameworks while acknowledging the evolving nature of AI-generated art.

The authors clarify that comparisons between human and AI artistic outputs focus on the products rather than the underlying creative processes. While human creativity typically stems from a personalized, often unpredictable and emotion-driven journey shaped by cultural and historical contexts, AI creativity relies on computationally driven analyses and recombinations of extensive training data. This does not imply AI replicates human cognition but instead produces formally comparable artistic products. Interestingly, both human and AI creativity depend fundamentally on prior knowledge—humans draw from accumulated experience while AI utilizes vast datasets—challenging simplistic dismissals of AI creativity as mere replication.

In examining creativity assessment, the paper draws on classic psychological definitions emphasizing novelty and usefulness. Creativity in humans involves generative and evaluative phases, and research has begun exploring AI's potential in both creating and assessing creative outputs. The authors stress the need for standardizing indices used to assess creativity—such as fluency, flexibility, originality, and utility—to facilitate robust comparisons across studies of human and AI creativity. Current research evaluates AI models using tasks like the Alternate Uses Test and Five Sentence Creative Story, measuring multiple dimensions from novelty to usefulness. Such standardization would improve consistency and clarity in interpreting AI’s creative capacities.

The second major focus is the aesthetic appreciation of AI-generated art by non-expert observers. Studies reveal that people often associate abstract art with AI and figurative art with humans, reflecting an implicit bias that abstract art is the prototypical AI style. This bias may be rooted in earlier experiences with simpler AI art and persists despite advancements enabling AI to generate realistic, figurative works. Understanding and potentially mitigating this bias through exposure or education is an important research avenue.

Moreover, a notable aversion to AI-generated art exists, with viewers generally rating such art as less authentic, emotional, and valuable than human-created pieces—even when the quality is comparable. This aversion, observed also in AI-generated music and choreography, may reflect "algorithm aversion," where machine-made creations are undervalued, though in some contexts "algorithmic appreciation" of precision-based tasks occurs. The paper proposes five key research questions to further explore this aversion: whether artistic style influences acceptance, if witnessing the AI production process can bolster appreciation, how knowledge of effort and time investment affects judgments, the role of emotional engagement, and the distinction between liking as pleasure versus interest.

For example, witnessing AI artists at work might invoke empathy and motor simulation similar to observing human creators, potentially increasing aesthetic appreciation. Similarly, informing viewers about substantial time and effort by AI could counteract assumptions that AI creativity is effortless and thus less valuable. Emotional engagement is complex; while some argue AI art lacks genuine emotion due to absence of human intent, evidence shows audiences can still experience emotional responses to AI art, paralleling how people engage with fictional or decorative works without personal emotional narratives. Furthermore, considering "liking" through models that distinguish immediate pleasure from deeper interest and understanding can deepen insights into AI art appreciation.

By bridging psychological methods with AI creativity studies, this paper contributes to framing creativity as a multidimensional construct that challenges anthropocentric views and acknowledges the diverse cognitive and cultural factors shaping human and AI creative products. It advocates for an interdisciplinary research agenda that addresses cognitive biases, refines creativity metrics, and explores contextual factors in aesthetic appreciation. Such efforts will be crucial in advancing responsible innovation and positioning the UK as a leader in AI and creative technologies, fostering environments where human and artificial creativity can coexist, complement, and inspire.

Overall, the paper underscores that while AI-generated art and creativity present unique challenges and biases, they open exciting pathways to better understand the human creative mind and develop AI systems that enrich creative endeavors. Encouraging empirical research grounded in cognitive psychology and empirical aesthetics promises to unlock new dimensions in AI creativity assessment and public engagement, guiding positive, informed integration of AI in the art world and beyond.

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