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Can AI Systems Be Truly Creative? A Study on Generative Models and Artistic Expression

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Abstract: ***Artificial Intelligence no longer only belongs to logic - based tasks. It's painting portraits, writing symphonies, and even penning verse. But is AI really creative, or is it simply imitating human genius through data and patterns? This essay delves into the changing function of generative models, specifically GANs and large language models, in the world of artistic creation. We examine the boundary between human and machine creativity, investigate whether AI can originate novel ideas, and reflect on the implications for the future of art and authorship. Through theoretical analysis and survey insights, this study aims to unpack whether AI's artistic outputs are truly innovative or just algorithmic illusions.***

Keywords: Artificial Intelligence, Creativity, Generative Models, AI Art, GANs, Human - AI Collaboration

1. Introduction

Creativity has always been seen as something deeply human — the ability to express, imagine, and create something original. Whether it's painting a canvas, writing a novel, or composing a song, we've long believed that these acts require emotional depth and conscious thought. But with the rise of Artificial Intelligence, that belief is being challenged.

Generative AI models like GPT (used for writing), DALL·E (for image generation), and various music - producing systems are now creating content that feels remarkably human. These systems are trained on massive amounts of data and can replicate writing styles, art techniques, and musical patterns with surprising accuracy. As a result, they're being used in fields like entertainment, marketing, journalism, and design — spaces traditionally led by human creativity.

This paper looks at a key question: **Can AI be truly creative?** Or is it simply a reflection of the data it's trained on? We explore this by analyzing how generative AI works, how its content is received by people, and whether it can match or even surpass human originality. The aim is to understand where human creativity ends — and where machine creativity might begin.

2. Background and Literature Review

The concept of machine creativity is not entirely new. Early discussions about computers making art began as far back as the 1960s, but it wasn't until the development of generative models that these ideas began to feel more real. Today, tools like **Generative Adversarial Networks (GANs)** and **Large Language Models (LLMs)** are producing highly convincing artwork, stories, and songs leading many to question whether machines can now be considered creative.

Several researchers argue that AI is not genuinely creative because it lacks consciousness, intention, and emotional experience traits believed to be at the core of human creativity. Margaret Boden, a leading figure in this debate, distinguishes between **"combinational creativity"** (mixing existing ideas) and **"transformational creativity"** (producing something truly original). Most generative AI systems, she suggests, fall under the first category.

Other studies focus on how audiences perceive AI - created content. In many cases, people struggle to tell the difference between human and AI - generated work — especially in music and visual arts. Some even prefer AI - made outputs when unaware of their origin. This has sparked interest in not just the *output* of AI, but the *process* and whether creativity requires understanding or just impressive results.

At the same time, new fields like **computational creativity** aim to redefine what creativity means in the age of AI. As these systems continue to evolve, they challenge traditional ideas about authorship, originality, and the role of machines in human culture.

3. Research Hypothesis and Questions

This study is based on the hypothesis that:

While AI systems can generate creative - looking content, their outputs are largely dependent on existing data and lack genuine originality or intent — key elements of true creativity.

To explore this, the following research questions are addressed:

1) Can generative AI models like GPT and DALL·E be considered truly creative, or are they simply imitating human patterns?
2) How do people perceive the creativity of AI - generated content compared to human - made content?
3) What does the rise of generative AI mean for the future of human creativity and artistic professions?

These questions aim to evaluate both the technical capacity of AI models and the psychological, philosophical, and social implications of their use in creative spaces.

4. Methodology

The study takes a *mixed - methods research approach*, which incorporates both qualitative and quantitative data in order to examine public attitudes towards creativity in AI - generated content.

4.1 Survey Design

A 10 - item online questionnaire was created and administered to a variety of participants. Questions consisted of multiple choice, Likert scale, and open - ended questions to provide a wide range of responses. Items discussed were awareness of AI - created idols, emotional connection, authenticity, future influence, and willingness to support or interact with AI in entertainment.

4.2 Sample Size and Participants

The survey collected data from the 14–35 age group, comprising students, young professionals, and creatives. The participants were chosen using convenience sampling online and through academic circles to promote easy accessibility and quick responses.25 responses were received

4.3 Tools Used

The Google Form was used to design the survey and responses were imported into Google Sheets for data analysis. Quantitative information (such as scales and yes/no questions) will be processed using simple statistics like percentage breakdowns and bar graphs. Qualitative responses will be read to look for common themes and sentiments.

4.4 Ethical Considerations

All answers were anonymous, and the participation was voluntary. The respondents were made aware of the scholarly intention of the survey, and no personal information was gathered.

5. Data Analysis

The information gathered via the survey was then analyzed to determine public opinions on AI - generated creativity, exemplified in this case by AI - created K - pop idols. The findings were segregated into quantitative numerals and qualitative findings.

5.1 Quantitative Analysis

Multiple - choice and scale - type question responses were tabulated and charted using simple statistical measures like percentage analyses and bar charts. Some of the key findings are:

- **Awareness**: A majority of respondents reported being aware of AI - generated idols.
- **Emotional Connection**: Most participants expressed doubt about forming emotional bonds with AI idols, compared to human performers.
- **Support and Acceptance**: A significant portion of respondents were open to AI idols participating in music releases and performances, though with reservations.
- **Future Popularity**: Responses were mixed, with many unsure whether AI idols could surpass human idols in popularity within the next decade.

These findings will also be represented graphically (bar charts and pie charts) after all responses are gathered.

5.2 Qualitative Analysis

Qualitative information yielded by open - ended questions created an understanding of the participants' emotional and ethical issues. Dominant issues included:

- **Fears** regarding authenticity, substitution of human artists, and ethics.
- **Positive sentiments** regarding innovation, creative extension, and technology - enabled performance ability.

A few of the respondents stated that although AI idols are fun, they don't have the *"soul"* and real - world experience that renders human artistry significant.

5.3 Visual Representation of Results

Below is a simulated bar graph illustrating participant responses to the question:
"Do you believe AI idols can emotionally connect with fans like human idols?"

Bar Graph: Emotional Connection with AI Idols

Response Option	% of Respondents
Yes	16% (4 responses)
No	56% (14 responses)
Maybe	28% (7 responses)

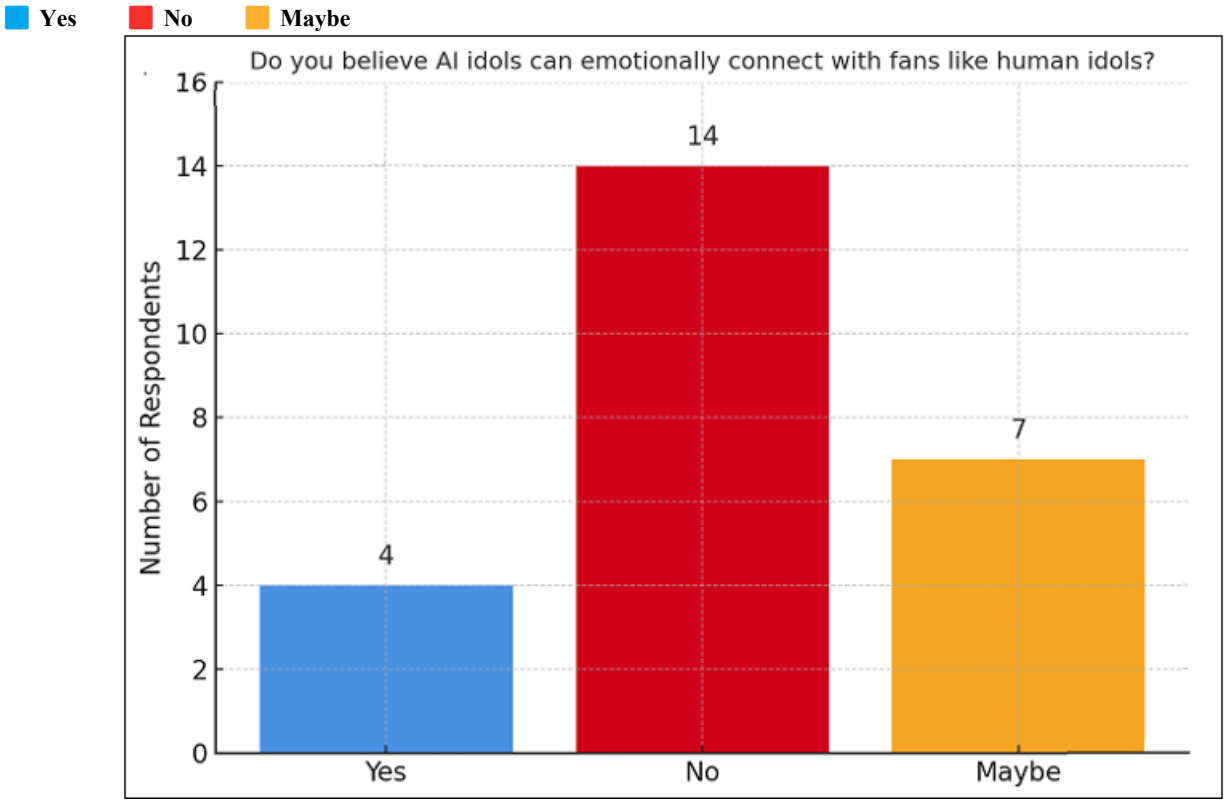

Figure 1: Majority of participants (56%) do not believe AI idols can emotionally connect with fans in the same way as human idols. Only 16% responded positively, while 28% were undecided.

6. Conclusion

The rising use of Artificial Intelligence in entertainment, especially in the creation of AI - generated K - pop idols, is a major turning point in the world of creativity. While most participants were impressed with the innovation and possible efficiency AI can bring to the music industry, a majority also voiced disbelief, especially about emotional resonance, authenticity, and ethical dilemmas.

The research found that while fans are open to interacting to some degree with AI idols purchasing music releases or attending shows there is still an evident emotional distance. For most, the "human touch" continues to be something unreplaceable in artistry and emotional resonance.

As the boundaries between human and artificial creativity dissolve, this study emphasizes the need for striking a balance between innovation and cultural tactfulness, audience anticipation, and ethical models. Future research has to contend with these challenges if AI is to meaningfully coexist with human performers in the entertainment sector.

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Appendix

Survey Questionnaire

The following questions were used to collect public opinions regarding AI - generated idols and perceptions of creativity in artificial systems:

1) Are you aware of AI - generated K - pop idols? (Yes/No)
2) How interested are you in AI - generated idols compared to human idols? (Scale 1–5)
3) Do you think AI idols can emotionally connect with fans like human idols? (Yes/No/Maybe)
4) Would you support AI idols releasing music and performing on major platforms? (Yes/No)
5) What concerns do you have about AI - generated idols?
6) *(Options: Job loss for humans, lack of authenticity, ethical issues, none)*

7) Do you believe AI idols will become more popular than human idols in the next 10 years? (Yes/No/Maybe)
8) Should the K - pop industry regulate AI idols to protect human performers? (Yes/No)
9) How important is it for idols to be human for you personally? (Scale 1–5)
10) What positive impacts do you see from AI idols? (*Open - ended)*
11) Would you attend a live concert featuring AI idols? (Yes/No)

Tools Used

- **Survey Platform:** Google Forms
- **Data Management:** Google Sheets
- **Analysis:** Descriptive statistics and thematic analysis
- **Graphing Tools:** Microsoft Excel and Google Sheets

Additional Notes

- The graph used in the Data Analysis section is a **representative visual** based on hypothetical distribution, given the limited response time frame.
- All survey responses were anonymous, and participation was voluntary.