Artificial Intelligence, Artists, and Art: Attitudes Toward Artwork Produced by Humans vs. Artificial Intelligence

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Abstract

Recent advances in AI and machine learning have raised questions about higher-skilled and creative endeavors in which AI might match or even outperform humans. Art is one domain in which advances in AI have recently caused lines over authorship to become blurred. Coeckelbergh (2017) argues that AI generated products can be considered "art" by both objective and subjective criteria. [1] In light of this point, the question "Can AI create art?" should be differentiated from the question "Can AI create art that is *good* and *worthy*?" (Qfiasco, 2018). [2] Taking this question as a point of departure, this study asks whether artwork created by AI are evaluated equally to artwork created by human artists and if so, how knowledge of the artist's identity (AI or human) affect participants' evaluation of the artwork. This study approaches these questions using Schema theory and the theory of Computers Are Social Actors (CASA) in order to consider how previously held biases and social norms might affect peoples' evaluation of AI created artwork.

There already exists substantial discourse from the technical perspective that discusses creative artificial intelligence (Eppe et al., 2018; Walther, 1994). [3][4] However, research considering AI created artwork often fails to bring in nuanced, humanistic perspectives. This is a shortcoming because measuring aesthetic value requires taking into consideration multiple factors, including stimulus, personality, and situation. The aesthetic of AI created art can be better understood if these aspects are considered (Jacobson, 2006), rather than merely focusing on the technical competence of an AI artist. [5]

Therefore, this study adopted scales used in the art world in order to better capture peoples' perception of AI art.

This study used a 2x2 survey-experiment design (real vs attributed identity of artists, human vs AI created artwork) to examine participants' attitudes toward AI artwork. Participants (n=288) were recruited using Amazon Mechanical Turk (MTurk). First, four groups were formed based on the real identities of artists (AI vs. Human) and attributed identities of artists (AI vs. Human). Then, participants were randomly placed into one of four groups, which were A) AI artist (actual) x AI artist (attributed), B) human artist (actual) x AI artist (attributed), C) human artist (actual) x human artist (attributed), and D) AI artist (actual) x human artist (attributed). The study employed three types (two images per type) of AI-created artworks and three types of human-created artworks. The pieces were chosen for their similarity in composition and style. The AI-created artworks were based on several already existing AI art generators. Multiple AI generators were selected because each generator had different ways of producing images, or "styles," even though they were all AI-based. Human-created artworks were chosen based on the rough similarity of style or theme with each AI-created artwork.

Six images of artwork (either AI-created or human-created) were shown to participants. Participants were given either the actual identity of the artists or an attributed identity. Screening measures were undertaken to ensure that participants were unaware of the purpose of the

study and lacked familiarity with the stimulus material.

All participants were asked to evaluate the artwork on the same set of dependent variables, which were adopted from those used among art studios and which consist of criteria related to originality, the degree of improvement or growth, composition, development of personal style, experimentation or risk-taking, expression, successful communication of idea, and aesthetic value (Sabol, 2006). [6]

Results from the survey-experiment revealed preliminary significant differences in evaluation between human-created artworks (M= 3.18, SD = 0.56) and AI-created artworks (M = 3.13, SD = 0.64); p = .065, and it is possible to infer that such differences are due to human-created artworks receiving significantly higher ratings in "composition (AI artists: 3.34 ± 0.65, human artists: 3.63 ± 0.72); p < .000," "degree of expression (AI artists: 3.22 ± 0.70, human artists: 3.41 ± 0.66); p = .02," and "aesthetic value (AI artists: 3.16 ± 0.61, human artists: 3.34 ± 0.63); p = .02."

Interestingly, acknowledging the identity of the artist, either AI or human, did not influence the overall evaluation of artworks (p = .569), except "development of personal style (AI artists: 3.19 ± 0.69, human artists: 3.35 ± 0.67); p = .04." However, participants who agreed with the statement "AI cannot produce art" gave significantly lower ratings (M=2.81, SD=0.59) compared to people who disagreed (M=3.26, SD=0.61); p < .000. An independent-samples t-test was conducted to examine the influence of the perceptions toward AI created art on the evaluation of AI created artworks, and this also yielded statistical significance.

The results of this survey-experiment shed light on the ways that people evaluate AI and human artwork, including the degree of skill and creativity they assign to each. Such evaluation has implications not only for the way that society views AI created creative projects, but also for the ways that society defines concepts like creativity and art more broadly. This study contributes to understanding of public perceptions of AI in a novel circumstance, that of the art.

References

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