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The impact of exposure to generative AI art on aesthetic appreciation, perceptions of AI mind, and evaluations of AI and of art careers

W P Malecki
University of Wroclaw, Poland

Tanja V Messingschlager
University of Würzburg, Germany

Markus Appel
University of Würzburg, Germany

Abstract

Visual art is increasingly created by generative artificial intelligence (generative AI). This study, conducted online with 470 US participants, investigated whether exposure to art attributed to AI may influence aesthetic appreciation, perceptions of AI mind, and evaluations of AI (acceptance of AI as an artist, evaluation of AI as an identity and realistic threat) and of art careers. Exposure to art introduced as generated by AI (vs a human artist) reduced appreciation. No significant impact was observed on the other dependent variables. For ostensibly AI-generated art, higher appreciation was associated with more acceptance toward AI as an artist and lower levels of AI realistic threat. This suggests that mere exposure to art attributed to AI may not be sufficient to induce a change in perceptions of AI mind, evaluations of AI and of art careers, but these effects might occur if AI-attributed art is appreciated aesthetically.

Keywords

Aesthetic appreciation, AI art, AI threat, generative AI, mind perception

Corresponding author:
W P Malecki, Department of Literary Theory, Institute of Polish Studies, University of Wrocław, Plac Nankiera 15, 50-140 Wrocław, Poland.
Email: wojciech.malecki@uwr.edu.pl

While AI-generated visual art (hereafter AI art) has existed at least from the 1970s (Cousins, 2023), it is only in recent years that it has begun to attract significant scholarly and public attention (Knight, 2023). This is mainly due to the development of software that, when prompted by users, can generate a digital artwork within a relatively short period, sometimes even fractions of a second (Sauer et al., 2023). The prompts can be both general and specific and concern the content and form of an artwork alike, including its artistic style (Oppenlaender et al., 2023). Some AI-art software is even capable of imitating the style of particular artists, from historical figures such as Picasso to contemporary digital creators such as Greg Rutkowski, whose name was one of the most popular prompts in the world in 2022 (Heikkilä, 2022). Given that prompting is relatively easy to master even by people with no artistic background or talent and that most of the software is either affordable or free (Oppenlaender et al., 2023), the use of generative AI software is becoming increasingly popular, as reflected in the rise of the value of the companies producing it (Bernal, 2019; Jackson, 2023; Shvets, 2022). The software is used for personal entertainment, commercial purposes, and even artistic competition, with one AI-created artwork famously winning a state art contest (Strowel, 2023).

The effects of AI art exposure

The emergence of technologies with capacities previously attributed exclusively to humans has always provoked significant public concerns (van der Laan, 2016). This has been the case with personal computers, machine translators, autonomous cars, and others (Rapaport, 2023; Townsend et al., 2021; Vieira, 2020). This is also the case with generative AI. Perhaps most obviously, artists have expressed worries that the emergence of generative AI will change how society perceives their profession such that it will be perceived as expendable and unsustainable (Xiang, 2022). After all, while humans need years of training to develop the artistic skills sufficient for creating a genuine artwork and then need hours, days, or longer to create an artwork itself, generative AI, once provided with sufficient data and resources, can learn the skills and create an artwork in much less time (Sauer et al., 2023). The emergence of generative AI has also increased the public perception of AI as an existential threat to humans. It is seen as blurring the boundaries between human beings and machines and a harbinger of a substitution of the former by the latter (Vacar, 2023).

For these and related reasons it has been recently postulated that there is a need to study the influence of exposure to AI-attributed artworks on perceptions of AI (the so-called Lovelace Effect), thereby focusing not so much on "the level of the machine (how AI functions and what it does)" but rather on "the level of reception (how users and observers attribute meaning to AI)" (Natale and Henrickson, 2022: 13). The Lovelace Effect theory stems from the Computers Are Social Actors (CASA) paradigm, which postulates that when exposed to computer behaviors that cue humaneness, such as performing tasks traditionally ascribed to humans, people will apply social scripts that are appropriate for human-human interaction, thereby effectively treating computers as humans (Lombard and Xu, 2021; Nass and Moon, 2000). This theory implies that, since art is typically seen as "the pinnacle of human achievement,"

meaning, intelligence, creativity, and other higher cognitive functions, people exposed to artworks attributed to AI may be more likely to treat AI as a human, leading to a change in perceptions of AI in general and evaluations thereof (Hageback and Hedblom, 2021). This effect would be analogous to the way the exposure to the news of the supercomputer DeepBlue defeating the human grandmaster Kasparov at chess influenced people's perceptions of how intelligent computers are and what they can do (Bory, 2019; Turner, 1997). In particular, exposure to AI art may lead people to perceive AI as more human-like by attributing to it the capacity for having a mind, and to accept it as a legitimate artist (Appel et al., 2020; Messingschlager and Appel, 2025; Nass et al., 1994). If exposure to AI art can elicit these responses, it may also lead individuals to evaluate AI as a threat. Specifically, individuals may perceive AI as undermining their sense of human identity and posing a risk to their prospects on the job market (Gabbiadini et al., 2023, 2024; Złotowski et al., 2017). This may be particularly evident in negative evaluations of human opportunities as artists as becoming less viable (Bebernes, 2023; Wingström et al., 2022; Xiang, 2022).

Thus far empirical research on exposure to AI art has not systematically focused on how the experience of AI-attributed art may influence perceptions of and attitudes toward AI. Instead, the major part of the empirical literature investigated how pre-existing attitudes toward AI influenced the experience of AI-attributed artworks, with those artworks being appreciated less than their human-attributed counterparts (Agudo et al., 2022; Bellaiche et al., 2023; Chamberlain et al., 2018; Gangadharbatla, 2022; Hong and Curran, 2019; Millet et al., 2023; Ragot et al., 2020; Wu et al., 2020; Xu et al., 2020). That said, empirical studies have started to shed some light on the impact of AI-attributed art on attitudes to and perceptions of AI, directly or otherwise. For instance, a recent study showed that exposure to a ChatGPT-attributed non-fiction text increases "the perception of the conversational chatbot as a realistic and symbolic threat to various aspects of human life, including safety, jobs, resources, inequality, identity, uniqueness, and value" (Gabbiadini et al., 2023: 2). Two more studies, by the same team, indicated that exposure to AI-attributed music and artworks increases the perceptions of AI as a threat to human identity (Gabbiadini et al., 2024). Yet, to our best knowledge, there is a lack of empirical studies that consider other effects of exposure to AI art than the perception of threat, including on the perceptions of AI mind, evaluations of AI as a legitimate artist, and evaluations of human career prospects in the arts.

Study overview and predictions

To address this gap, we conducted a pre-registered experimental study. Participants were randomly assigned to three conditions: a control group, and two experimental conditions. Participants in both experimental conditions were shown the same artworks, all generated by AI, but in one of these conditions, the authorship was ascribed to AI while in the other to humans. In the control condition, no artwork was presented. The purpose of including this condition was to allow for assessing whether the observed differences in dependent variables between the intervention groups vis-a-vis baseline values of these variables are due to the positive influence of AI authorship ascription, the negative influence of human authorship ascription, or vice versa. Subsequently, we

measured the participants' perceptions of AI mind and evaluations of AI and art careers. In the following sections, we will explicate in greater detail the constructs underlying our research as well as predictions regarding our focal areas of user responses.

AI art. There is no universally accepted definition of AI art in the scholarly literature. In fact, in some fields – particularly the humanities – considerable controversies exist, with some scholars arguing that nothing created by AI can be considered art (Kraatz and Xie, 2023; Manovich, 2019; Zeilinger, 2021; Zylinska, 2020). In this study, we sidestep such debates by adopting a pragmatic definition of AI art as conventionally understood artistic works (ranging from popular-art styles, such as cartoons, to high-art styles, such as abstract compositions) created using artificial intelligence algorithms. In this context, the AI system contributes to the creative process by generating, modifying, or influencing the artwork's content, form, or style, based on prompts provided by a human user. This definition aligns with how AI art is typically understood, implicitly or explicitly, in most empirical studies on the subject (Hutson and Harper-Nichols, 2023; Ragot et al., 2020; Ting et al., 2023). Moreover, it reflects common understandings of AI art outside academia, as seen among generative AI creators, users, media discourse, and even the developers of AI tools (Adobe, 2024; Baxter, 2024; McLean, 2023). Such an approach is particularly suitable for a study like ours, which aims to provide insight into what public perceptions of AI art and their implications may be.

AI and mind perception. Both theory and empirical evidence suggest that there is a dissonance between the perceived mental capacities of AI and the mental capacities perceived to be necessary to create art (Boden, 2016). These are primarily the capacity for agency and the capacity for experience (Gray et al., 2007). Agency is here understood as consisting in planning one's actions, acting according to one's plans, as well as recognizing and acting upon moral norms. Experience is understood as consisting in feeling emotions, possessing unique personality traits, and being conscious. High levels of experience and agency are perceived as necessary for creating art. They are also typically perceived as characteristic of human artists and adult humans in general. AI artists, AI as such, and robots, on the other hand, are assigned lower levels of agency and experience (Appel et al., 2020; Gray and Wegner, 2012; Messingschlager and Appel, 2025; Stein and Ohler, 2017). In this study, we assumed that exposure to art perceived to be created by AI would lead to a reduction of the dissonance through improving people's perception of both the agency and experience of AI. Our respective formal hypotheses were as follows:

Hypothesis 1a (H1a). Exposure to art perceived as generated by AI leads to a stronger belief in the agency of AI as compared to baseline.

Hypothesis 1b (H1b). Exposure to art perceived as generated by AI leads to a stronger belief in the agency of AI as compared to art introduced as generated by a human.

Hypothesis 2a (H2a). Exposure to art introduced as generated by AI leads to a stronger belief in the experience of AI as compared to baseline.

Hypothesis 2b (H2b). Exposure to art introduced as generated by AI leads to a stronger belief in the experience of AI as compared to exposure to art introduced as generated by a human.

Evaluations of AI: acceptance and threat. Research on attitudes toward artificial intelligence indicates the presence of positive and negative attitudes, with the positive attitudes including the acceptance of AI as matching or even surpassing humans at various functions and jobs and the negative attitudes including fears that "People like me will suffer if Artificial Intelligence is used more and more" (Kelley et al., 2021; Schepman and Rodway, 2023). We therefore examined, accordingly, the effects of exposure to AI art regarding positive and negative evaluations of AI.

As far as positive evaluations are concerned, we focused on acceptance of AI as an artist. Social Role Theory implies that the primary criterion for being accepted as a member of a given social group, including a professional or vocational one, is whether one fulfills its main social role (Biddle, 1986). Being exposed to artworks attributed to AI might therefore influence acceptance of AI as an artist, insofar as creating artworks is the main social function assigned to artists (Hong, 2018). This presumption is further encouraged by the Computers Are Social Actors (CASA) model, which implies that people will perceive AI in each role the same way they perceive humans in similar roles (Nass et al., 1994). As such, our formal hypotheses were as follows:

Hypothesis 3a (H3a). Exposure to art introduced as generated by AI leads to a higher acceptance of AI as an artist as compared to baseline.

Hypothesis 3b (H3b). Exposure to art introduced as generated by AI leads to a higher acceptance of AI as an artist as compared to exposure to art introduced as generated by a human.

Insofar as negative evaluations of AI are concerned, we focused on AI as a realistic and identity threat. Intergroup relations research suggests that people may perceive AI to be an outgroup threatening the interests and well-being of the human ingroup (Yogeeswaran et al., 2016). If AI is perceived as capable of matching or surpassing humans at performing higher cognitive tasks that are essential for work in key economy sectors, this may lead to seeing it as a competitor for jobs, and therefore a realistic threat to human existence and well-being (Bebernes, 2023; Kaplan and Haenlein, 2020). Similarly, if AI is perceived as similar to human beings, it "may also be perceived as threatening human identity by blurring the lines between what is human and what is machine" (Yogeeswaran et al., 2016: 32; see also Jussupow et al., 2022; Mirbabaie et al., 2022; Złotowski et al., 2017; Zhou et al., 2022). As such, we offer the following hypotheses:

Hypothesis 4a (H4a). Exposure to art introduced as generated by AI leads to higher AI threat as compared to baseline.

Hypothesis 4b (H4b). Exposure to art introduced as generated by AI leads to a higher AI threat as compared to exposure to art introduced as generated by a human.

Perception of careers in the arts. As an extension of the variables included in H3-4, we decided to examine the influence of exposure to art ascribed to AI on perception of careers in the arts, the main human profession that may be threatened by generative AI. We assumed that the mental processes potentially leading from exposure to AI art to greater acceptance of AI as an artist and to greater perceptions of AI as an existential threat (including AI taking jobs away from humans) could also lead to increased belief that human artists might be supplanted one day by generative AI (the way many human professions have been eradicated by technological progress), and eventually to the perception of a lesser desirability for humans to undertake a career in the arts. This assumption is supported by research in sociology of work indicating that the public perception of occupations and professions depends to a significant extent on whether they can perform their defining function exclusively (Volti, 2008). If the defining function can be performed by those not belonging to the profession, be they laypeople or machines, then the profession comes to be perceived as less important and socially desirable (Fish, 1995; Monteiro, 2015). The artistic profession is particularly vulnerable to such a threat as access to it is not restricted by legal barriers, such as "license or degree required to practice" (Lingo and Tepper, 2013: 338). Moreover, rather than relying on "discipline-specific skills," it tends to promote "generalization, flexibility, and broad competencies" (p. 341). Since generative AI allows for the creation of artwork without the involvement of artists, this might negatively affect perceptions of the social desirability of the artistic profession, even despite the fact that this new form of technology might also help artists spark their creativity and lead to a form of co-creativity (Wingström et al., 2022). As such, our formal hypotheses were as follows:

> ***Hypothesis 5a (H5a).*** Exposure to art introduced as generated by AI leads to a more negative attitude toward careers in the arts as compared to the baseline.
>
> ***Hypothesis 5b (H5b).*** Exposure to art introduced as generated by AI leads to a more negative attitude toward careers in the arts as compared to exposure to art introduced as generated by a human.

Aesthetic appreciation. Even though AI could be attributed the role of an artist, it might be perceived to lack some traits that are valuable to create meaningful art that viewers like and appreciate. Specifically, Social Identity Theory implies that outgroup bias against an author might be an important heuristic in appreciating artworks, which has been supported by empirical evidence showing that artwork perceived as created by a national outgroup member is perceived less favorably than that perceived as created by a national ingroup member (Mastandrea et al., 2021). Since, as indicated above, AI shows the definitional characteristics of an outgroup (Wang and Peng, 2023), one might expect a similar effect regarding artworks perceived as generated by AI. Furthermore, the Human–AI Interaction Theory of Interactive Media Effects (HAII-TIME) suggests that indicators of interacting with AI can activate cognitive shortcuts. These heuristics influence perceptions of AI, its behaviors, and products, with reactions varying based on the context of the interaction (Sundar, 2020). A key heuristic revolves around the perception that machines are simultaneously characterized by precision, objectivity, neutrality, and infallibility, but also by a lack of emotional warmth and flexibility,

making them appear mechanistic and cold (Sundar, 2020; Sundar and Kim, 2019). In scenarios where tasks demand emotional engagement, sensitivity, or other human-like attributes – for instance, in creating art – AI products may then be perceived far less positively than human products (Sundar, 2020).

Whereas several studies are in line with this prediction (Bellaiche et al., 2023; Chamberlain et al., 2018; Gangadharbatla, 2022; Millet et al., 2023; Ragot et al., 2020; Wu et al., 2020), the evidence is somewhat mixed (Hong and Curran, 2019; Xu et al., 2020). Our hypothesis, guided by Social Identity Theory and HAII was as follows:

> ***Hypothesis 6 (H6).*** Exposure to art introduced as generated by AI leads to less aesthetic appreciation compared to exposure to the same art introduced as generated by a human.

Including aesthetic appreciation in our study was motivated by the evidence showing that people's identification of an object as art is positively associated with their aesthetic appreciation thereof (Pelowski et al., 2017). Given this, we assumed that higher appreciation of art would be associated with stronger perceptions of AI mind, AI as an artist, and AI as a threat, and more negative perceptions of human careers in the arts. These associations were expected in the AI condition but not in the human artist condition. These predictions were not pre-registered and are addressed in the paper as research questions.

Method

Participants

We expected a medium effect size of artist information on the dependent variables ($d = .5$, $\alpha = .05$, $1\text{-}\beta = .80$). A G*Power analysis yielded a minimal sample size of 128 participants. To have sufficient power for exploratory analyses, and to account for exclusions due to careless responding, a sample size of 500 participants was preregistered (https://aspredicted.org/pvcm-g7hn.pdf). We recruited a sample of 515 participants from the U.S. via Prolific. Eleven participants were excluded because they did not complete the questionnaire. Due to the preregistered criteria an additional 34 participants were excluded from the sample: 23 completed the questionnaire in less than 120 seconds, two participants answered an attention check item incorrectly, and nine participants looked at the experimental stimuli for less than two seconds. The remaining 470 participants (44.3% female, 52.8% male, 1.5% other, 1.5% prefer not to answer) were between 19 and 82 years old ($M = 30.09$, $SD = 12.69$). Participants reported their ethnicity (White 77.2%, Black or African American 11.5%, Asian or Asian American 8.5%, Hispanic or Latino 5.3%, Native American or Alaskan Native 0.9%, Native Hawaiian or other Pacific Islander 0.2%, Other 1.3%). Participants' highest level of education was Bachelor's degree 46.4%, High School 32.1%, Master's degree 13.6%, Trade School 4.7%, Ph.D. or higher 2.3%, Some High School (attended but not graduated) 0.9%. The final sample size was sufficient to detect a small to medium between-subjects difference in the magnitude of $d = .29$ (given $\alpha = .05$, $1\text{-}\beta = .80$).

Stimulus material

The participants received information about the supposed artist of a visual artwork they were about to see. In one condition, the artist was presented as a human being (the artist's name and other personal details were fictitious), in another as a generative AI. In a third condition, the control, no artwork was presented, and no artist information was provided. To ensure that all participants in the AI condition had a basic understanding of generative AI, they were given a short description of AI and its application in the arts. In the human artist condition, participants received some information about the artist ("The following picture was created by Mika J. Baker. Mika J. Baker was born in 1956 and studied at Dartmouth College, USA."). We deliberately presented few pieces of information about the artist to prevent this information (e.g. the artists' reputation) from influencing the results (see Supplement S1, for full introductions). Three artworks (instead of one) were used in the experiment in order to increase the generalizability of our results. In the interest of ecological validity, we used already existing artworks generated with prompts by active digital artists instead of new artworks generated with prompts provided by ourselves. They were all generated by AI using Midjourney (https://www.midjourney.com/home/) and had been originally published at DeviantArt, one of the largest online art communities in the world (Sterbenz, 2023). To further increase the generalizability of our results, we chose the artworks based on the different styles of art and motifs they represented (a painted portrait of a woman in the streets, a landscape painting of a river in the fields, and a fictional scenery of a castle in the clouds, see Supplement S2 for links to the stimuli). The artworks, with a size of 1280 × 854 px and 1792 × 1024 px, were presented in the middle of the screen. Participants were asked to carefully look at the piece as long as they wanted.

Measures

Mind perception: agency and experience. To assess the level of mind attributed to AI, we measured perceived agency and experience of AI, with two items devoted to each. Agency is the mental capacity to plan actions in a self-determined manner (e.g. "AI has the capacity to exercise self-control"). Experience covers the capacity of AI to experience emotions (e.g. "AI has the capacity to feel joy"). The items were derived from two sources measuring perception of AI mind (Appel et al., 2020; Gray and Wegner, 2012). Participants answered the items on a seven-point scale (1 = *strongly disagree* to 7 = *strongly agree*). Reliability was good for experience (Cronbach's $\alpha = .95$, $M = 1.44$, $SD = 0.80$) and satisfying for agency (Cronbach's $\alpha = .65$, $M = 2.79$, $SD = 0.98$). The item wordings of all measures are reported in Supplement S7.

Acceptance of AI as an artist. Acceptance of AI as an artist was measured with two items on a seven-point scale (1 = *strongly disagree* to 7 = *strongly agree*) (e.g. "I think the artificial intelligence that creates art should be regarded as an artist"). The items were derived from Hong et al. (2022), who originally used them for measuring the acceptance of AI as musician. The items were adapted for the purpose of this study with good reliability (Cronbach's $\alpha = .94$, $M = 2.50$, $SD = 1.57$).

AI threat. Participants indicated their perception of AI as a threat by answering ten items on a seven-point scale (1 = *strongly disagree* to 7 = *strongly agree*). We measured two dimensions of threat: realistic threat (e.g. "The increased use of AI in our everyday life is causing job losses for humans") and identity threat (e.g. "Recent advances in AI technology are challenging the very essence of what it means to be human") with five items devoted to either threat. The items were derived from Yogeeswaran et al. (2016). Reliability was good for both realistic threat (Cronbach's $\alpha = .88$, $M = 4.54$, $SD = 1.33$) and identity threat (Cronbach's $\alpha = .91$, $M = 3.75$, $SD = 1.58$).

Attitude toward careers in the arts. Participants indicated their attitude toward careers in the arts with four items on a 7-point scale (1 = *strongly disagree* to 7 = *strongly agree*); for example, "*A person who wants to become an artist should go for it*." Reliability for this scale was good (Cronbach's $\alpha = .88$, $M = 5.66$, $SD = 1.23$).

Aesthetic appreciation. Participants reported their aesthetic appreciation for the artwork they saw with four items rated on a seven-point scale (1 = *strongly disagree* to 7 = *strongly agree*). The scale covers specifically two key aspects of appreciation: being moved and perceived beauty (e.g. "I felt the picture was meaningful," "The picture was beautiful"). The items were derived from two different approaches to measuring appreciation and reception of media and art (Bartsch and Oliver, 2016; Fingerhut and Prinz, 2018). Reliability for this scale was good (Cronbach's $\alpha = .89$, $M = 4.62$, $SD = 1.34$).

Procedure

All participants gave their informed consent at the beginning of the questionnaire. They were reminded that their participation was voluntary and anonymous and asked to carefully read all instructions. Participants were randomly assigned to one of the following three conditions: an artwork was introduced as created by a fictional artist ($n = 159$), introduced as created by AI ($n = 157$), or participants received no such information and saw no artwork (control condition, $n = 154$). After participants in the experimental conditions had read information about the supposed artist of the artwork (human vs AI), they were asked to complete a short attention check concerning the artist information presented to them. Next, they were presented with one of the three randomly assigned AI-generated artworks. Afterward, participants were asked to report their appreciation for the artwork they had just seen. Participants in the control condition received no information about the artists and did not see a picture. All participants (including the control condition) indicated their evaluations of careers in the arts, acceptance of AI as an artist, evaluation of AI as a threat, and perception of AI agency and experience (in that order). Then, the participants were asked about their previous experience with AI-generated artworks. They reported their sociodemographics and their diligence during their participation. Last, all participants were debriefed, informed that all artworks were in fact generated by AI, and given the opportunity to make remarks or report technical problems. The experimental groups were additionally asked about their appreciation of the artworks they saw.

The procedure described above, and all other aspects of the study, were approved by the Research Ethics Committee at the University of Wrocław. The study was preregistered at AsPredicted.org (https://aspredicted.org/pvcm-g7hn.pdf).

Results

Preliminary analyses

All analyses reported below were tested for a possible influence of the actual picture shown. As illustrated in greater detail in Supplement S3, the respective interactions were non-significant. Likewise, the analyses reported below were tested for a possible influence of participants' prior experience with generative AI. The respective interactions were non-significant, indicating that the effects of AI art presentation and supposed artist did not differ whether the participants had or had not prior experience with generative AI (see Supplement S4 for details). Based on the preliminary analyses, the data for the three artworks were collapsed. Likewise, analyses are reported for the full sample irrespective of prior experience with generative AI. Zero-order correlations for all participants and separate zero-order correlations for the three conditions are reported in Supplement S6, Tables S2–5.

AI mind perception

Our first formal analyses focused on AI mind perception. In addition to the two source groups, the analyses included a control group that did not see any artwork. Planned contrasts showed that there was no significant difference in ascribed experience scores between the AI artist condition ($M = 1.40$, $SD = 0.78$) and both the human artist group ($M = 1.48$, $SD = 0.83$, contrast estimate [ce] $= 0.08$, $p = .394$, $d = .10$) and the control group ($M = 1.44$, $SD = 0.79$, $ce = 0.04$, $p = .682$, $d = .05$). Thus, we found no support for Hypothesis 1. Likewise, planned contrasts on ascribed agency showed no significant differences between the AI artist condition ($M = 2.70$, $SD = 0.99$) and the human artist condition ($M = 2.89$, $SD = 0.94$, $ce = 0.18$, $p = .098$, $d = .19$) and no significant difference between the AI artist condition and the control group ($M = 2.77$, $SD = 1.01$, $ce = 0.07$, $p = .536$, $d = .07$). Thus, no support for Hypothesis 2 could be obtained. See Figure 1 for a graphical depiction of the results (i.e. raincloud plots created with JASP Version 0.19.1).

Evaluations of AI: acceptance of AI as an artist and AI threat

Regarding the acceptance of AI as an artist, the planned contrasts showed no significant difference between the AI-group ($M = 2.66$, $SD = 1.58$) and the human artist-group ($M = 2.49$, $SD = 1.57$, $ce = 0.17$, $p = .348$, $d = .11$), and between the AI-group and the control group ($M = 2.36$, $SD = 1.54$, $ce = 0.29$, $p = .100$, $d = .19$) (Figure 2). Thus, no support for Hypothesis 3 could be obtained.

Both threat variables were analyzed separately (results for the joint threat scale were highly similar, see Supplement S5). For the realistic AI threat subscale, differences between the AI artist condition ($M = 4.59$, $SD = 1.36$) and the human artist group condition were not significantly different from zero ($M = 4.50$, $SD = 1.38$, $ce = 0.09$, $p = .536$, $d = .07$) as were the difference between the AI artist condition and the control group ($M = 4.\ 55$, $SD = 1.25$, $ce = 0.04$, $p = .789$, $d = .03$, see Figure 3). A similar pattern of results was shown for the identity AI threat subscale (AI artist

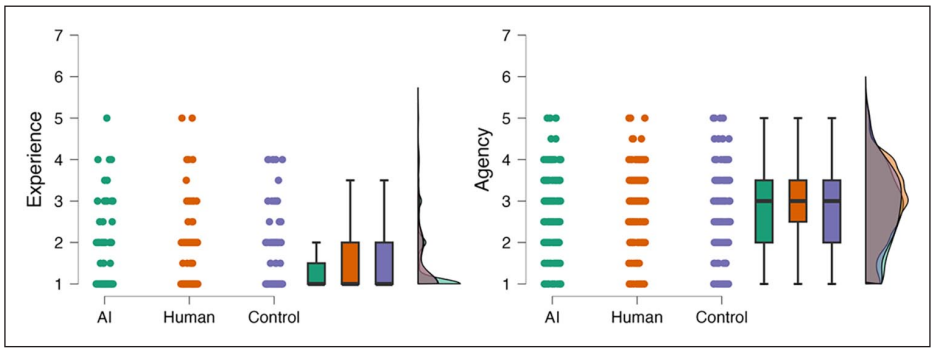

Figure 1. Results for ascribed mind perception (experience and agency).

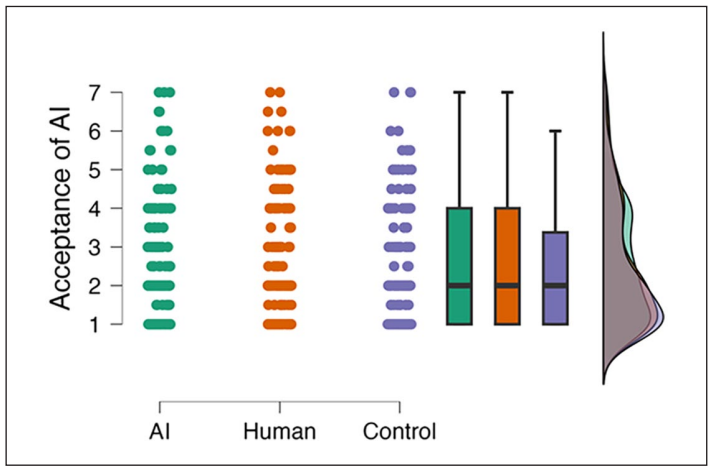

Figure 2. Results for acceptance of AI as an artist.

condition: $M = 3.73$, $SD = 1.55$; human artist condition: $M = 3.75$, $SD = 1.60$; control condition: $M = 3.78$, $SD = 1.59$), with contrasts amounting to $ce = 0.02$, $p = .895$, $d = .01$, and $ce = 0.05$, $p = .789$, $d = .03$, respectively. Thus, the data yielded no support for Hypothesis 4.

Attitude toward careers in the arts

Our next analyses yielded a mixed result: The planned contrasts that reflected our Hypotheses 5a and 5b showed no significant difference between the AI-group ($M = 5.63$, $SD = 1.27$) and the human artist-group ($M = 5.89$, $SD = 1.09$), $ce = 0.26$, $p = .060$, $d = .22$, and between the AI-group and the control group ($M = 5.47$, $SD = 1.29$), $ce = 0.16$, $p = .257$, $d = .12$ (see Figure 4). On an exploratory note, we report a significant difference between the human artist-group ($M = 5.89$, $SD = 1.09$) and the control group that had not seen an

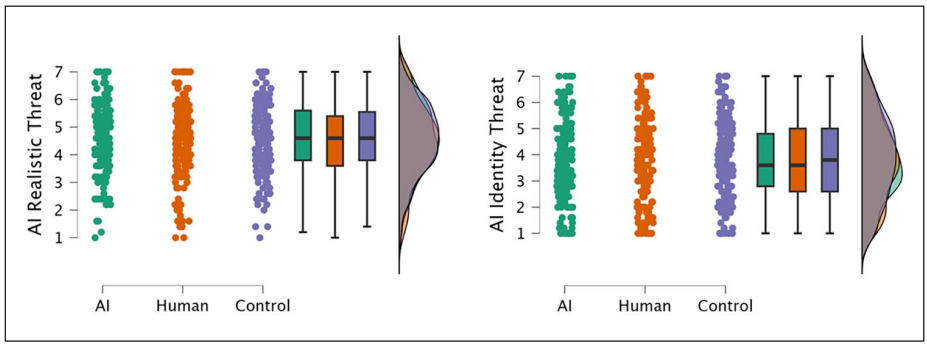

Figure 3. Results for AI threat (realistic threat and identity threat).

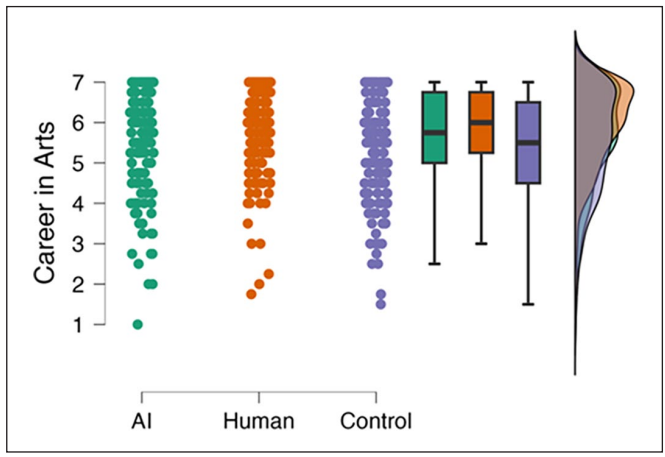

Figure 4. Results for attitude toward a career in the arts.

artwork ($M = 5.47$, $SD = 1.29$), $ce = 0.41$, $p = .003$, $d = .35$. This result indicates that seeing an ostensibly human-made artwork (that was actually made by an AI) leads to more positive evaluations of human art careers.

Aesthetic appreciation

Next, we tested the hypothesis that exposure to art introduced as generated by AI leads to less aesthetic appreciation as compared to exposure to art introduced as generated by a human (Hypothesis 6). As expected, the ostensibly AI-generated artworks elicited less appreciation ($M = 4.32$, $SD = 1.43$) than the same artworks introduced to be created by a human ($M = 4.93$, $SD = 1.18$, $t_w(301,19) = -4.13$, $p < .001$, $d = 0.47$; Figure 5). This moderately large effect adds to the developing literature on the appreciation of AI-artworks and is in line with much of the available empirical evidence

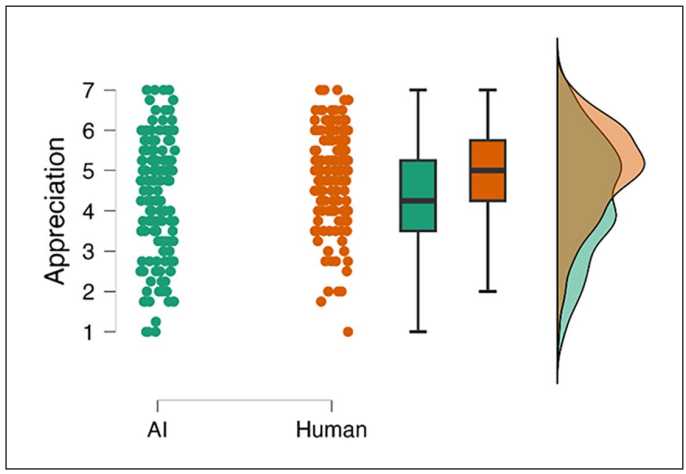

Figure 5. Results for appreciation.

(Chamberlain et al., 2018; Gangadharbatla, 2022; Ragot et al., 2020; Wu et al., 2020; but see Hong and Curran, 2019; Xu et al., 2020).

Additional results

Of additional interest were the relationships between aesthetic appreciation on one hand and perceptions of AI mind and the evaluations of AI and art careers on the other hand. More specifically, higher aesthetic appreciation was expected to be associated with higher ascriptions of AI mind, stronger acceptance of AI as an artist, higher AI threat, and a more negative attitude toward human careers in the arts. Importantly these associations were expected in the AI condition, but not in the human artist condition. We inspected and compared the respective zero-order correlations in both conditions (see Table 1). In the AI condition, appreciation of the artworks was positively associated with acceptance of AI as an artist, $r(155) = .49$, $p < .001$, this was not the case in the human artist condition, $r(157) = .07$, $p = .378$. The difference between both correlations was significant, $z = 4.10$, $p < .001$. Moreover, in the AI condition, the more participants appreciated the artworks, the more they ascribed mind in terms of experience to AI, $r(155) = .18$, $p = .028$, whereas no significant association between both variables was found in the human artist condition, $r(157) = .06$, $p = .457$. Both correlations did not differ significantly, however, $z = 1.07$, $p = .142$. In contrast to our assumptions, appreciation of the artworks was negatively (rather than positively) associated with AI realistic threat in the AI condition, $r(155) = -.25$, $p = .001$. Although statistically significant, the correlation was admittedly weak. No negative association between appreciation of the artworks and AI realistic threat was found in the human artist condition, $r(157) = .11$, $p = .174$. The difference between both correlations was significant, $z = -3.22$, $p = .001$. No further significant relationship between appreciation of the artworks and the other dependent variables (ascription of mind to AI in terms of agency, identity threat, and attitude toward careers in the arts) was observed (see Table 1 for statistics on z-tests for correlation differences).

Table 1. Zero-order correlations in the human artist-condition ($n = 159$) below the diagonal and zero-order correlations in the AI-condition ($n = 157$) above the diagonal.

	1	2	3	4	5	6	7	Compare (apprec.)[a]
	r [*p*]	*r* [*p*]	*r* [*p*]	*r* [*p*]	*r* [*p*]	*r* [*p*]	*r* [*p*]	*Z* [*p*]
1. Aesthetic appreciation		.04 [.590]	.49 [<.001]	-.28 [.001]	-.12 [.146]	.18 [.028]	.05 [.507]	
2. Attitude toward careers in the arts	.20 [.011]		-.01 [.932]	-.13 [.097]	-.12 [.126]	-.07 [.406]	-.20 [.014]	-1.43 [.076]
3. Acceptance of AI as artist	.07 [.378]	-.08 [.338]		-.31 [<.001]	-.10 [.232]	.38 [<.001]	.19 [.020]	4.10 [<.001]
4. Realistic threat AI	.08 [.294]	-.00 [.967]	-.33 [<.001]		.55 [<.001]	-.12 [.146]	.03 [.715]	-3.29 [<.001]
5. Identity threat AI	.04 [.577]	-.06 [.472]	-.25 [.001]	.72 [<.001]		.02 [.780]	.18 [.028]	-1.41 [.079]
6. Experience of AI	.06 [.457]	-.08 [.323]	.28 [<.001]	-.04 [.584]	.10 [.193]		.29 [<.001]	1.07 [.142]
7. Agency of AI	.11 [.187]	-.18 [.024]	.14 [.085]	.09 [.262]	.18 [.024]	.39 [<.001]		-0.53 [.297]

[a]In the column *Compare (apprec.)*, the z-statistics and *p*-values indicate whether the association between aesthetic appreciation and another variable differs significantly between the AI condition and the Human Artist condition.

Discussion

Summary of results

While most studies on AI art focus exclusively on how perceptions of AI influence the experience of AI art (e.g. Hong et al., 2022; Messingschlager and Appel, 2025), our study focused on how the experience of AI art may influence perceptions of AI and art as such (Natale and Henrickson, 2022). This perspective is important given the increasingly popular conviction that the growing presence of AI art in social life might have a prominent influence on how the public perceives AI and art generally and a sense of being threatened by this presence that is expressed by some individuals and groups (Vacar, 2023; Xiang, 2022).

Our results show that participants in the AI condition appreciated the works they were exposed to less than those in the human artist condition, thereby supporting the idea that the public still sees art creation as a paradigmatically human activity and is for this reason negatively biased against AI art. Apart from its significance to this study, this result is also a contribution to the burgeoning literature on the effects AI-labeling on aesthetic appreciation. While some studies conclude that perceiving an artwork as created by AI has no effect on its appreciation (Hong and Curran, 2019; Xu et al., 2020), some others conclude that it does indeed, and that the effect is negative (Chamberlain et al., 2018; Gangadharbatla, 2022; Ragot et al., 2020; Wu et al., 2020). Our study provides support for the latter conclusion, which is an important contribution, especially in light of its large sample and high ecological validity resulting from the use of three AI artworks generated by the widely popular and much discussed program Midjourney (Cousins, 2023).

While our manipulation showed no statistically significant main effects on the other dependent variables, our additional analyses showed that some of these variables were associated with higher appreciation of the artwork in the AI art condition. In particular, the participants who scored higher on appreciation in that condition showed more acceptance toward AI as an artist and were less likely to evaluate it as a realistic threat.

Practical and theoretical implications

Our findings suggest that the mere exposure to AI-attributed art may not be sufficient to induce a change in evaluations of AI, and that what is necessary for such effects to occur is exposure to AI-attributed art that is also appreciated aesthetically. This is in line with the available evidence showing that people tend to associate art with objects they so appreciate, essentially identifying art as such with good art (Pelowski et al., 2017). Naturally, then, if an AI-attributed object is to change people's mind about AI as an artist and about art careers, that object has to be highly appreciated. Further studies are needed, however, to confirm that, including experiments manipulating the quality of artworks attributed to AI versus humans.

Still another general implication of our results is that a single exposure to an AI-attributed artwork is unlikely to immediately change one's mind about the general mental capacities of AI, even those relevant to art creation such as experience and agency, and even if the artwork is perceived as highly valuable in aesthetic terms. Most likely, in

order to draw any conclusions for AI's mental capacities from its apparent capacity to create aesthetically valuable objects, either a longer time after exposure, repeated exposure or both are needed. This interpretation is partly supported by the positive correlation we found, in the AI condition, between acceptance of AI as an artist and the ascription of experience to AI, $r(155) = .38$, $p < .001$. It is plausible that this association reflects prior exposure: participants with greater familiarity with AI-generated art may have been more likely to accept AI as an artist and, in turn, more prone to attribute experiential capacities to AI in general.

Finally, our results show that people's perception of AI as a threat is less straightforward than the available theory and evidence might imply (Kaplan and Haenlein, 2020; Yogeeswaran et al., 2016; Złotowski et al., 2017). Recall that the more participants appreciated the work, the less they were likely to see AI as a realistic threat. Consider also that our analysis of correlations of the dependent variables showed that both the realistic AI threat and identity AI threat are negatively correlated with acceptance of AI as an artist. These results are intriguing. One might assume, after all, that individuals who believe AI can perform a task as quintessentially human as creating art would also fear that the boundaries between AI and humans are becoming blurred. They might also be thought to worry that AI could eventually take over many tasks currently performed by humans, leading to widespread job loss, loss of income, and threats to human wellbeing (Gabbiadini et al., 2023, 2024; Mirbabaie et al., 2022; Yogeeswaran et al., 2016; Złotowski et al., 2017). However, these results are also consistent with research indicating that perceptions of AI threat differ depending on the domain in which it is introduced with their levels depending on the kind of function AI performs, its usefulness, and the consequences of its application (Kieslich et al., 2021). In particular, in domains where AI performs a decision-making function with potentially life-changing consequences for humans (e.g. "job recruitment and loan origination"), levels of threat perceptions are particularly high (Kieslich et al., 2021: 1574). But wherever "AI systems seem useful and the consequences of its application appear insubstantial" (which could have been the perception of the use of AI in art that our participants had), this "might evoke entirely opposite reactions" (Kieslich et al., 2021: 1574).

Another relevant consideration here is that, at least since the nineteenth century, artists have been stereotyped in Western societies as outsiders and eccentrics, i.e. as an outgroup (Elias and Berg-Cross, 2009; Golka, 2013: 1; Hocking, 2019; Oakley, 2009; Pelles, 1962; Taylor, 2017; Tunali, 2017; Van Tilburg and Igou, 2014). If one holds such stereotypes, as was possible in the case of the participants in our study, then one's acceptance of AI as an artist might indeed lessen one's sense of identity and realistic threat from AI. The results concerning identity threat could additionally be because, aware that AI art is typically generated based on prompts from humans, participants accepted AI's artistry in only a limited sense, treating it as a useful artistic instrument rather than a being whose autonomy could threaten their human identity (cf. Latikka et al., 2023).

Limitations

This study is not without its limitations. First, the results were obtained with a nationally specific sample. We chose to conduct the study with US participants since the USA is a

hub where some of the most popular generative AI tools are developed, some of the most famous examples of AI art originate, and where AI is widely discussed in the media (Adobe, 2024; Roose, 2022; Xiang, 2022). We assumed that participants from such a population would generally be aware of how AI is used to create art, which would facilitate our study. However, the national specificity of the sample makes it difficult to generalize the results to other nations, particularly non-Western ones. In addition, 62.3% of the participants held an academic degree. While this is typical of Prolific samples, which are widely used in the social sciences, it further limits the generalizability of our findings. Future studies with non-Western samples and participants from more diverse educational backgrounds are needed to determine the universality of the observed effects.

Second, we cannot be sure what exactly the participants understood by AI art, in particular whether they fully understood that it is used not only for personal entertainment (the use that appears to be the most common and receive significant media attention, Zhang, 2023) but also for tasks that are typically assigned to professional human artists (like designing book covers, Weatherbed, 2023), and how fast and efficiently it generates content prompted by a relatively small number of suggestions. We provided the participants with only a very brief description of AI art and controlled only for whether they had previously seen and used it. It is not precluded that their knowledge of AI art was insufficient for any effects on perception of AI mind to obtain.

On a more conceptual level, it is worth noting the limitations of the paper's focus on positive versus negative attitudes toward generative AI. The main rationale for this focus was, first, that empirical research on attitudes toward artificial intelligence indicates that these have the general structure consisting of positive and negative attitudes (Kelley et al., 2021; Schepman and Rodway, 2023), and, second, that previous empirical work on generative AI, as well as the current public debates surrounding generative AI, appear to generally focus on positive or negative attitudes, or both (Grassini and Koivisto, 2024; Latikka et al., 2023; Tao et al., 2023). However, this approach does not capture the variety of assessments regarding technology in general (Kerschner and Ehlers, 2016) and the diversity of beliefs regarding generative AI as expressed by artists, art curators, art critics, and the public (Jiang et al., 2023; Michaels, 2024). Most importantly, while some artists appear to be anxious about generative AI threatening their jobs and/or see it as contradicting the very foundations of artistic activity (Johnston and Thue, 2024), some others enthusiastically embrace generative AI as a unique and enriching artistic tool or partner (Gill-Simmen, 2023; Wiley, 2023), while still others adopt an ambiguous attitude, using generative AI in their work for pragmatic reasons, yet retaining their objections about it (Jiang et al., 2023; Johnston and Thue, 2024; Vimpari et al., 2023). Further studies are needed to understand the potential impact of exposure to AI art on attitudes transgressing the simple positive/negative binary.

Conclusion

Our results suggest, first, that the influence of exposure to AI art on how the public perceives AI and art as such (Vacar, 2023; Xiang, 2022) is likely to be diminished by a negative bias against generative AI that makes people appreciate AI-attributed works less than they do human-attributed works. They also suggest that the mere exposure to art

attributed to AI may not be sufficient to induce a change in perceptions of AI mind and evaluations of AI and art careers, and that what may be necessary for such effects to occur is exposure to AI-attributed art that is also appreciated aesthetically. Given the rapid growth in the capacities of generative AI (Knight, 2023), this conclusion has important implications both theoretically and practically. Our work is meant to instigate future research on the effects of exposure to AI-generated art on perceptions of art as a pastime and profession, on evaluations of AI art, and on perceptions of the self and the human condition.

Data availability statement

All data and supplementary material are available on OSF: https://osf.io/2qbjy/?view_only=5d156912f84a4fa3a2a7e87caa744cc9

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ORCID iDs

W P Malecki https://orcid.org/0000-0003-4768-713X
Tanja V Messingschlager https://orcid.org/0000-0001-6737-8997
Markus Appel https://orcid.org/0000-0003-4111-1308

Supplemental material

Supplemental material for this article is available online.

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Author biographies

W P Malecki is a professor in the Department of Literary Theory at the University of Wroclaw, Poland. His research focuses on how narratives shape perception, attitudes, and behavior across media, with particular interests in narrative immersion, environmental communication, and creative applications of generative AI. His work has been published in journals such as *Poetics*, *Climatic Change*, and the *Journal of Personality and Social Psychology*, and has been featured in *The New York Times* and *Psychology Today*.

Tanja V Messingschlager is a researcher at the Human-Computer-Media Institute, University of Würzburg, Germany. She is interested in research on psychological aspects of social media and new technologies, with a special interest in human reactions to creative artificial intelligence and perception of AI bias in generative AI.

Markus Appel, Dr. Phil. (University of Cologne, Germany), is a professor and chair at the Human-Computer-Media Institute at University of Würzburg, Germany. He is the head of the Psychology of Communication and New Media research team. He is interested in psychological questions regarding media and technology.