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WHO'S THE MOST CREATIVE OF THEM ALL? LAYPERSONS EXPLICIT AND IMPLICIT BELIEFS

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Who's the Most Creative of Them All?: Art Bias in Laypersons' Explicit and Implicit Beliefs

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Abstract

Often, creativity is associated with only artistic talent (known as the art bias) resulting in a failure to recognize it or its potential in non-artistic areas. The present study examined the art bias across artistic, scientific, business-oriented, and conventional occupations using implicit and explicit methods. In a mixed design, participants (N = 722) responded to one of six Implicit Association Tests (where two occupations were paired with creative and mundane words), explicit measures of bias towards creativity across occupations, and creative self-efficacy in the same occupations. Results indicated that artistic occupations (e.g., poet) were most likely to be implicitly and explicitly endorsed as creative compared to all other occupations. There was no difference in perceived creativity among scientific and business-oriented occupations; however, conventional ones were uniformly assessed as the lowest on creativity. Further, one's creative self-efficacy in specific occupations contributed to explicit creativity bias across all four occupations. These results can aid the field of vocational psychology and direct future research on interventions that recognize and curb art bias.

Keywords: art bias; creativity, creative domains; creative self-efficacy; implicit attitudes

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1. Introduction

Creativity comprises ideas that are both novel and useful (Plucker et al. 2004). Even though creativity is required across many occupations, those in artistic professions (such as musicians, painters, and actors) are more likely to be viewed by laypeople as creative than those in non-artistic jobs (Cropley, 2014). This tendency to consider aesthetic and artistic activities as the primary prototypes of creativity (Rocavert, 2020), whilst considering other fields like science, business, and conventional activities as less creative, is often known as the "art bias." The continued persistence of this distorted view of creativity has narrowed the perception and assessment of this construct, resulting in biased perspectives. Researchers have concurred that associating creativity with artistic talent alone is an extensive misunderstanding of what creativity entails (Glăveanu, 2011; Runco, 2007). This bias can lead to people not seeing how they might apply their creativity in non-artistic areas (Cropley, 2014). Further, the art bias that surrounds creativity makes it less practical and useful to the common person, running the risk of making creativity appear to only be reserved for geniuses (Plucker et al., 2004).

A study by Glăveanu (2014) provided support for the existence of the art bias and the strong association between art and creativity. He found that participants rated arts-related professions (painter, musician, writer, actor) higher and faster in terms of creativity than the other types of occupations. Additionally, western participants (primarily from the US and UK) regarded artists as highly creative compared to other occupations. This finding was in line with Paletz et al. (2011), which suggested that artistic professions are more likely to be considered creative among Caucasians, as compared to Asians (specifically, Chinese and Japanese participants). In addition, when people were asked about which images would be strong symbols of creativity, they were

more likely to choose arts-related images, such as a paintbrush or children's drawings, as opposed to non-arts ones, such as a computer (Glaveanu, 2011).

Similarly, Kaufman and Baer (2004) found that people consistently rate their creativity in math and science to be lower as compared to other domains of creativity (like everyday creativity or artistic creativity). Further, individuals' self-rated STEM creativity was the least associated with their overall perception of creativity as compared to any other domain, including artistic and entrepreneurial areas (Kaufman et al., 2009). These studies suggest that, for a layperson, domains such as math or science might not be considered ways of being creative (Kaufman et al., 2009). Such a biased understanding of creativity restricted to artistic domains may discourage some individuals from trying to be creative in other areas because of their lack of confidence, self-efficacy, or expertise in the arts. Given that many people are already apprehensive and anxious about being creative in the first place (Daker et al., 2020), this type of explicit art bias may make non-artists even less likely to decide to be creative at all.

1.1 Implicit Art Bias

In addition to explicit and self-report measures, implicit assessments have also identified an art bias. For instance, the Implicit Association Test (IAT) responses of high school and college students were significantly delayed when words related to creativity and science careers were paired together, as compared to words related to creativity and artistic careers (Valenti et al., 2016). The IAT is an assessment of implicit social cognition, including attitudes consisting of positive and negative evaluations toward social targets (Greenwald & Banaji, 1995). The IAT yields a d-score, which measures the difference in the response times between contrasting conditions. In addition to the use of IATs, Hass (2014) examined implicit theories of creativity and found that aesthetic taste and imagination traits were associated with artists and musician exemplars more

than science and technology exemplars. Thus, people's conception of creativity has shown to differ across domains. That is, artists and musicians are considered to be more non-conforming, aesthetic, and imaginative than gadget inventors at an implicit level (Hass & Burke, 2016). Other research has identified a broader bias against creativity, which might not always be overt. Using an IAT, Mueller et al. (2012) showed that the motivation of individuals to reduce uncertainty may lead to a negative bias towards creativity (as compared to practicality), thus leading to lower evaluations of creative ideas. It was also noted that people's implicit biases against creativity diminished their ability to recognize creativity even when they explicitly stated otherwise. One's explicit and implicit impressions of creative actors can diverge depending on the domain in which one is being creative (Katz et al., 2022). Thus, the current study takes into account not only an explicit measure to recognize the art bias, but also uses the IAT (Greenwald et al., 1998), which has infrequently been used in creativity studies (but see Han & Weiguo, 2020; Kapoor, 2015; Moon et al., 2020, Valenti et al., 2016).

1.2 Other Correlates of the Art Bias

While most research has focused on art bias, not many studies have considered the effect of belief in one's creative ability, known as creative self-efficacy, on art bias. Tierney and Farmer (2002) found that creative self-efficacy had an effect on employees' tendency to be creative in their work. Further, it has been found that self-perceptions of creativity are directly related to creative self-efficacy. Thus, individuals who view themselves as being creative are not only more likely to have high confidence in their ability to be creative (Reiter-Palmon et al., 2012) but also showcase creativity (Hammond et al., 2011; Liu et al., 2016). One study found that teachers with higher levels of self-assessed creativity were less likely to show signs of having an art bias and teachers in STEM areas were more likely to demonstrate an art bias than teachers in humanities areas (Patston et al., 2018).

1.3 The Present Study

Against this background, the current study aimed to understand how art bias emerges when creativity is assessed with respect to different occupations (artistic, scientific, business-oriented, and conventional) using Implicit Association Tests (Greenwald et al., 1998). Further, explicit measures were used to understand the prevailing art bias associated with the occupations listed in the IATs. Lastly, the relationship between creative self-efficacy and art bias, along with the effect of sociodemographic variables (age, gender, education, employment), on both implicit and explicit art bias were measured.

The following hypotheses and research questions were pre-registered[1]:

H1a: Individuals will be faster to classify artistic occupations as creative and business-oriented occupations as mundane as compared to artistic ones as mundane and business-oriented ones as creative.

H1b: Individuals will be faster to classify artistic occupations as creative and scientific occupations as mundane compared to artistic ones as mundane and scientific ones as creative.

H1c: Individuals will be faster to classify artistic occupations as creative and conventional occupations as mundane compared to artistic ones as mundane and conventional ones as creative.

H2: Among explicit measures, individuals will rate artistic occupations as more creative than business-oriented, scientific, and conventional occupations.

H3a: The IAT d-score will be predicted by sociodemographics (age, gender, education, employment), explicit creativity assessments about artistic and business occupations, and creative self-efficacy in the IAT focused on artistic occupations paired with business-oriented occupations.

[1] https://osf.io/bh89x/?view_only=f0076e88144b4915ac9ce2173021d068. Deviations from the preregistration: Age was added as a sociodemographic variable; employment replaced occupation; and education replaced college major. Owing to a highly skewed sample in terms of country of origin (about 80% of the sample was American), nationality was not included in the hypotheses or research questions and was removed as an exclusion criterion.

H3b: The IAT d-score will be predicted by sociodemographics (age, gender, education, employment), explicit creativity assessments about artistic and scientific occupations, and creative self-efficacy in the IAT focused on artistic occupations paired with scientific occupations.

H3c: The IAT d-score will be predicted by sociodemographics (age, gender, education, employment), explicit creativity assessments about artistic and conventional occupations, and creative self-efficacy in the IAT focused on artistic occupations paired with conventional occupations.

H4a-d: Explicit creativity assessments will be predicted by sociodemographics (age, gender, education, employment), and creative self-efficacy for artistic/business/scientific/conventional occupations.

RQ1: Is there a difference in the speed with which individuals classify scientific, business-oriented, and conventional occupations as creative/mundane?

2. Method

2.1 Participants

A power analysis was computed using G*Power (ver. 3.1.9.6). A study conducted by Lee et al. (2017) found that implicit attitudes predicted 12% variance in the creativity ratings of participants ($R^2 = 0.12$). Accordingly, we used an effect size (f^2) of 0.136, a power of 0.80, and an alpha value of 0.05, to estimate an approximate of 678 participants (113 in each condition: 113*6 = 678). Keeping attrition rates in mind, we aimed to recruit 720 participants.

A total of 956 participants filled out the survey, primarily in the US and India, out of which the data of 722 (men = 373, women = 335, other = 14; Americans = 574, Indians = 96, other nationalities = 48, not disclosed = 4; M_{age} = 21.18 years, SD = 4.32, age range = 18–45 years) were retained. Invalid responses were discarded based on age (below 18 years), low self-reported

fluency in English, low self-reported attention, and low self-reported honesty (all < 5 on a 10 point scale). About 69% of the participants had completed a high school diploma/GED, 5% had done an associate's degree, 19% had completed a Bachelor's degree, 4% had a Master's degree, and less than 1% had a doctoral degree or did not complete high school at all. Of all the participants, about 68% were students, 27% were employed, 2% were self-employed, and less than 2% were either unemployed or retired.

Participants were randomly assigned to one of six groups[2] where

Group 1 (N = 119, men = 51, women = 65, other = 3; M_{age} = 20.92 years, SD = 4.32, age range = 18–45 years) was shown artistic and business-oriented occupations paired with creative and mundane words.

Group 2 (N = 123, men = 61, women = 61, other = 1; M_{age} = 20.88 years, SD = 3.92, age range = 18–37 years) was shown artistic and scientific occupations paired with creative and mundane words.

Group 3 (N = 111, men = 59, women = 50, other = 2; M_{age} = 21.27 years, SD = 4.18, age range = 18–39 years) was shown artistic and conventional occupations paired with creative and mundane words.

Group 4 (N = 141, men = 86, women = 54, other = 1; M_{age} = 22.41 years, SD = 5.26, age range = 18–45 years) was shown business-oriented and scientific occupations paired with creative and mundane words.

Group 5 (N = 116, men = 60, women = 52, other = 4; M_{age} = 20.65 years, SD = 3.84, age range = 18–39 years) was shown business-oriented and conventional occupations paired with creative and mundane words.

Group 6 (N = 112, men = 56, women = 53, other = 3; M_{age} = 20.69 years, SD = 3.79, age range = 18–37 years) was shown scientific and conventional occupations paired with creative and mundane words.

[2] Only Groups 3 and 6 did not meet the minimum sample size of 113 by 2 and 1 participants respectively.

2.2 Design

A mixed design with one between-groups variable (IAT, manipulated at six levels) and three within-participants variables (creative self-efficacy, art bias, and explicit creativity assessment) was used to understand implicit and explicit art bias across different occupations. The explicit assessment and the order and category-attribute pairing of each of the six IAT groups were counterbalanced across participants to avoid measurement and order effects. Various sociodemographic characteristics such as age, gender, education, and employment were included as covariates.

2.3 Measures

2.3.1 Creative Self-Efficacy Scale (CSE; Beghetto, 2006)

The 3-item CSE assesses an individual's belief in their ability to generate novel and useful ideas and whether they viewed themselves as having a good imagination along a 5-point Likert scale (1= *not true* to 5 = *very true*). Items were modified to specifically measure participants' beliefs about their creative self-efficacy "in artistic occupations (poet, painter, dancer, musician, performer; $\alpha = 0.91$)", "in business-oriented occupations (entrepreneur, stockbroker, HR manager, CEO, market analyst; $\alpha = 0.87$)", "in scientific occupations (engineer, biologist, physicist, chemist, mathematician; $\alpha = 0.90$)", and "in conventional occupations (receptionist, clerk, cashier, postal worker, taxi driver; $\alpha = 0.87$)".

2.3.2 Explicit Measure of Bias toward Creativity

This measure was designed to assess an individual's explicit bias towards creative occupations (adapted from Mueller et al., 2012), assessed on a 6-point scale ranging from 1 =

Extremely Mundane to 6 = *Extremely Creative*, across four categories of occupations, namely: artistic (α = 0.89), scientific (α = 0.85), business-oriented (α = 0.70), and conventional (α = 0.91). Five occupations were presented per category, totalling to 20 items in the measure. The following question, "How creative do you think the occupation of a/an <occupation> is?" was asked for each occupation (e.g., artist).

2.3.3 Implicit Association Test (IAT; Greenwald et al., 1998)

This test was designed using iatgen on Qualtrics (Carpenter et al., 2019) to detect implicit attitudes of individuals towards creativity. The IATs were also scored using the Shiny Web Applet providing d-scores (*D*-score algorithm; Greenwald et al., 2003). Through six IATs, this study assessed four categories of occupations (artistic, business-oriented, scientific, conventional) paired with two attributes (creative, mundane). The categories and attributes were paired and counterbalanced across participants to avoid order effects. Six between-groups were created:

Group 1: Artistic, business-oriented occupations paired with creative, mundane words.

Group 2: Artistic, scientific occupations paired with creative, mundane words.

Group 3: Artistic, conventional occupations paired with creative, mundane words.

Group 4: Business-oriented, scientific occupations paired with creative, mundane words.

Group 5: Business-oriented, conventional occupations paired with creative, mundane words.

Group 6: Scientific, conventional occupations paired with creative, mundane words.

3. Results

Data were analysed using RStudio software version 2022.07.2 (RStudio, 2022). Full sample descriptives and zero-order correlations are displayed in Table 1. Descriptives and zero-order correlations for Groups 1-6 are displayed in Supplementary Tables S1 to S6.

3.1 Implicit and Explicit Attitudes Towards Occupations

In Group 1, individuals were faster to classify artistic occupations as creative and business occupations as mundane (H1a), $t(118) = 7.13$, $p < 0.001$, $d = 0.64$. Similarly, artistic occupations were faster to be classified as creative and scientific or conventional ones as mundane in Group 2 (H1b), $t(122) = 5.13$, $p < 0.001$, $d = 0.46$ and Group 3 (H1c), $t(110) = 11.28$, $p < 0.001$, $d = 1.06$, respectively. In Group 4, scientific and business-oriented occupations did not differ significantly in their classification as creative or mundane (RQ1), $t(140) = -1.27$, $p = .205$, $d = -0.1$. However, in Group 5, individuals were faster to classify business-oriented occupations as creative compared to conventional occupations (RQ1), $t(115) = 7.99$, $p < 0.001$, $d = 0.74$. Lastly, for Group 6, individuals were faster to classify scientific occupations as creative compared to conventional occupations (RQ1), $t(111) = 10.84$, $p < 0.001$, $d = 1.02$.

A one-way ANOVA was computed to examine explicit bias towards artistic occupations in terms of creativity (H2). Results indicated that individuals were most likely to rate artistic occupations ($M = 26.31$, $SD = 4.70$) as creative, followed by scientific occupations ($M = 20.01$, $SD = 5.44$), business-oriented ones ($M = 19.88$, $SD = 4.47$), and conventional occupations ($M = 12.54$, $SD = 5.60$), respectively, $F(3, 2884) = 887.4$, $p < 0.001$. However, the difference between explicit creativity ratings for scientific and business-oriented occupations was not significant.

3.2 Predictors of Implicit Attitudes Toward Creative Occupations

In order to identify the predictors of implicit attitudes toward creative occupations, hierarchical regressions predicting IAT d-scores from sociodemographics (age, gender, education, employment), explicit measures of bias toward specific professions (Step 2), and creative self-efficacy in respective professions (Step 3) were computed. Table 2 displays the results for the first group, where artistic and business-oriented professions were included (H3a). In the full model,

only a higher explicit measure of bias towards artistic occupations was a significant predictor of IAT d-scores; sociodemographics and creative self-effficacy were not significant predictors. When artistic and scientific occupations were considered (H3b; Table 3), females, those with lower educational qualifications and higher creative self-efficacy in artistic occupations were significant predictors of IAT d-scores in the full model; explicit measures of bias in artistic and scientific occupations did not explain IAT d-scores. Last, for artistic and conventional occupations, only higher explicit bias in artistic occupations significantly predicted implicit art bias in the same occupations in the full model (H3c; Table 4); sociodemographics and creative self-efficacy were not significant predictors.

3.3 Predictors of Explicit Creativity Bias

To examine the correlates of explicit bias[3], hierarchical regressions predicting explicit measures of bias toward creativity in specific occupations from age, gender, education, and employment (Step 1), and creative self-efficacy in those respective occupations (Step 2) were conducted. Table 5 displays results for artistic occupations (H4a); in the full model, younger individuals, females, and higher creative self-efficacy in artistic occupations significantly predicted explicit bias towards artistic occupations; education and employment were not significant predictors. In the full models for business-related and scientific occupations (H4b-H4c; Tables 6, 7), only higher creative self-efficacy in business-related and scientific occupations respectively significantly predicted explicit

[3] To examine preliminary differences across gender and nationality, we also ran four ANOVAs with gender (1 = males, *N* =349; 2 = females, *N* = 310 and nationality (1 = Americans, *N* = 569; 2 = Indians, *N* = 90) for the four explicit bias measures across occupations (artistic, business, scientific, and conventional). Summary of results: Females (*M* = 27.73, *SD* = 3.38) considered artistic occupations to be more creative than males *(M* = 25.52, *SD* = 4.88). There were no differences found for nationality or the gender*nationality interaction. For creativity in business occupations, no differences were found in terms of gender, nationality, or the gender*nationality interaction. Males (*M* = 20.73, *SD* = 4.98) considered scientific occupations to be more creative than females (*M* = 19.29, *SD* = 5.59), again with no differences seen for nationality or gender*nationality interaction. Males (*M* = 12.85, *SD* = 5.75) also considered conventional occupations to be more creative than females (*M* = 11.93, *SD* = 5.29). Indians (*M* = 15.6, *SD* = 5.67) considered conventional occupations to be more creative than Americans (*M* = 11.91, *SD* = 5.38). The gender*nationality interaction was also found to be significant, with Indian Males (*M* = 17.74, *SD* = 5.82) being more likely to consider conventional occupations as creative compared to Indian Females (*M* = 13.55, *SD* = 4.79). No differences were found between Indian females, American males (*M* = 12.11, *SD* = 5.41), and American females (*M* = 11.68, *SD* = 5.34). As the nationality subsamples were lopsided in size, these underpowered estimates are to be interpreted with caution.

creative bias towards the corresponding occupations; sociodemographics were not significant predictors. Lastly, in the full model with conventional occupations (H4d; Table 8), older individuals, those with more education, and higher creative self-efficacy in conventional occupations were significant predictors of explicit creative bias towards these occupations; gender and employment were not significant predictors.

4. Discussion

The present study aimed to examine art bias when creativity is assessed in relation to different occupations using both explicit measures and Implicit Association Tests (Greenwald et al., 1998). In general, artistic occupations were perceived to be the most creative both implicitly and explicitly, followed by scientific and business-related occupations, and last by conventional occupations. Interestingly, no differences were obtained between scientific and business occupations, suggesting that perceived creativity in these occupations was equivalent (but less than artistic ones and more than conventional ones).

4.1 Attitudes Towards Artistic and Non-Artistic Occupations

Our findings highlighted people's implicit beliefs related to creativity in different occupations and showed how individuals are more likely to implicitly associate artistic occupations as being creative rather than mundane when compared to other occupations. A possible reason for such an implicit bias towards artistic and against non-artistic occupations could be that people regard those in artistic occupations as possessing different sets of traits and qualities. People tend to perceive individuals in artistic occupations to be more creative along aesthetic traits, imagination, and non-conformity at an implicit level (Hass, 2014; Hass & Burke, 2016) than individuals in non-artistic occupations like science and technology (Hass, 2014). Therefore, to the best of the authors'

knowledge, this study is one of the first to establish the presence of the art bias at an implicit level (see also Valenti et al., 2016).

Similarly, our findings show that participants explicitly rated artistic occupations as more creative than they did scientific, business-oriented, and conventional ones. This is consistent with past findings (Cropley, 2014; Masnick et al., 2010; Valenti et al., 2016) that hint at art bias, which predisposes individuals to perceive artistic occupations as more creative than others. Scientific and business-oriented occupations did not differ significantly implicitly and explicitly in perceived creativity. This was an interesting result, indicating that laypersons consider creativity in these occupations to be equivalent and not hierarchical. Individuals may have rated scientific occupations as less creative as compared to artistic ones because of the perception that science, as a subject, focuses on established facts and not necessarily the excitement derived from scientific discovery, which happens in isolated laboratories (Valenti et al., 2016). Similarly, the perception of mundanity could hold true for business-oriented occupations such as entrepreneur, stockbroker, and market analyst (compared to an artist) that may focus more on the ultimate outcomes and not the accompanying processes.

It is likely that individuals' beliefs about what constitutes creativity underpins the discourse surrounding which occupations are considered creative and which are not. For example, flawed implicit beliefs of teachers regarding what constitutes creativity was seen in teachers' anecdotal discussions and examples that were largely related to describing artistic students and art products (Aljughaiman et al., 2005). Thirty-five percent of the teachers in the study defined "creativity" as "artistic production" and very few saw creativity as the ability to indulge in inventiveness and divergent thinking, which has consistently been considered as a key element of creativity according to experts (Gardner, 2011; Runco & Acar, 2019). We can assume then that the average person is no different in this regard when it comes to assuming that creativity is mostly artistic.

Baas et al. (2015) found that laypersons believe creativity emerges when an individual is defocused and is flexible in their thinking, rather than when they are systematic, and have persistent thinking. It is likely that many see artistic occupations as those where systematic and persistent thinking are not the norm and rather an individual is likely to do well as an artist (and therefore do well creatively) if they are flexible in their thinking and more imaginative than focused.

Implicit art bias was also predicted by explicit bias toward artistic occupations as well as creative self-efficacy in artistic occupations. Based on Glaveanu's (2014) findings, artistic occupations are rated as more creative more quickly, and our findings explain this via explicit beliefs. For instance, if an individual considers themselves as being more creative in artistic domains, their implicit as well as explicit beliefs about artistic domains are influenced. This has implications in boosting individuals' creative self-efficacy across professions, which may have networked effects on their implicit and explicit biases related to creativity in those professions. Further, our results also suggest that implicit art bias may not be related to demographic characteristics indicating that perceptions of creativity in different occupations remain uniform across age, gender, education, and employment.

4.2 Creative Self-Efficacy Aligns with Explicit Creativity Beliefs

One's beliefs about their creative ability contributed to explicit creativity bias across all occupations. This suggests that individuals who view themselves as creative in a particular occupation also tend to think of that occupation as creative; this was true for all four sets of occupations in this study. Early work has shown a strong relationship between creative self-perceptions and creative performance among adults (e.g., Tierney & Farmer, 2002). A meta analysis on the motivational correlates of creativity (Liu et al., 2016) also concluded that creativity at the workplace is associated with creative self-efficacy among other variables (such as culture,

intrinsic motivation, and prosocial motivation). Individuals with high creative self-efficacy may see themselves as bringing creativity into the work they do in their respective occupations, which then contributes to their perception of their occupation being creative.

Among sociodemographics, being younger and female explained higher explicit creativity bias in artistic occupations, whereas being older and more educated explained higher explicit creativity bias in conventional occupations. Unfortunately, no data were collected on participants' current or past engagement with the 20 occupations (or, more broadly, in their associated domains) enlisted in the study. However, it is possible that these relationships were indicative of the distributions across occupations within the sample.

4.3 Limitations and Future Directions

Despite its many features, such as combining implicit and explicit measures to assess art bias, the study was not without limitations. First, due to a lack of data, nationality-based comparisons were unable to be estimated. The limited role played by sociodemographic characteristics in implicit art bias will certainly need to be replicated with diverse samples in future studies. Second, distinctions within occupational categories were not considered; this would be meaningful to study particularly for scientific and business-oriented occupations that were not markedly different in explicit or implicit measures. Subsequent research can examine such nuanced differences in bias toward creativity at the level of specific professions.

Third, "artistic" is a very broad category. Many self-report measures of creativity specifically split artistic creativity into multiple categories, with literary arts, visual arts, performing arts, and music (among others) being considered to represent different areas (e.g., Carson et al., 2005; Diedrich et al., 2018; Kaufman, 2012). Just as future studies could dive deeper into business-oriented and scientific occupations, they could also split artistic occupations into additional categories. Fourth, as we have alluded to earlier, more information about participants' personal experience with

creativity would be useful. Someone who has high creative self-efficacy in chemistry because they are pursuing an advanced degree and have planned experiments is markedly different from someone who has high creative self-efficacy in chemistry because they simply are quite confident (or narcissistic; Goncalo et al., 2010). A combination of some of the aforementioned self-reports and, if time and resources permit, actual creative tasks in these specific domains would enable much greater understanding of the mechanisms behind the art bias. Finally, as much as the art bias is considered to be exactly what the name suggests -- a bias, as opposed to an accurate reflection -- it would also be helpful to include more domain-general measures of abilities (such as divergent thinking) and traits (such as openness). There is some indication that arts majors see themselves as being more creative but are not, in fact, actually more creative (Furnham et al., 2011; Kaufman et al., 2013). Additional scholarship that examines the art bias, domain-specific creativity, and domain-general creativity that could add clarity to these issues would also be welcome.

5. Conclusion

The art bias is an interesting concept in that it is readily accepted, acknowledged, and often experienced by those who study and teach creativity. Yet the number of studies devoted to not only establishing the art bias but also exploring how it compares to other areas, its explicit and implicit roots, and its correlates and mechanisms are fewer than one might expect given its prevalence. Our results offer solid evidence to support the existence of the art bias (at an explicit and implicit level) and suggest potential predictors. We hope to see additional work that explore this topic and continue this stream of scholarship.

References

Aljughaiman, A., & Mowrer-Reynolds, E. (2005). Teachers' conceptions of creativity and creative students. *The Journal of Creative Behavior*, *39*(1), 17–34. https://doi.org/10.1002/J.2162-6057.2005.TB01247.X

Baas, M., Koch, S., Nijstad, B. A., & De Dreu, C. K. W. (2015). Conceiving creativity: The nature and consequences of laypeople's beliefs about the realization of creativity. *Psychology of Aesthetics, Creativity, and the Arts*, *9*(3), 340–354. https://doi.org/10.1037/A0039420

Beghetto, R. A. (2006). Creative self-efficacy: Correlates in middle and secondary students. Creativity Research Journal, 18(4), 447–457. https://doi.org/10.1207/s15326934crj1804_4

Carpenter, T. P., Pogacar, R., Pullig, C., Kouril, M., Aguilar, S., LaBouff, J., Isenberg, N., & Chakroff, A. (2019). Survey-software implicit association tests: A methodological and empirical analysis. *Behavior Research Methods*, *51*(5), 2194–2208. https://doi.org/10.3758/S13428-019-01293-3

Carson, S. H., Peterson, J. B., & Higgins, D. M. (2005). Reliability, validity, and factor structure of the creative achievement questionnaire. *Creativity Research Journal*, *17*(1), 37–50. https://doi.org/10.1207/S15326934CRJ1701_4

Cropley, A. J. (2014). Is there an 'arts bias' in the Creativity Research Journal? Comment on Glăveanu (2014). *Creativity Research Journal*, *26*(3), 368-371. https://doi.org/10.1080/10400419.2014.929434

Daker, R. J., Cortes, R. A., Lyons, I. M., & Green, A. E. (2020). Creativity anxiety: Evidence for anxiety that is specific to creative thinking, from STEM to the arts. *Journal of Experimental Psychology: General*, *149*(1), 42–57. https://doi.org/10.1037/XGE0000630

Diedrich, J., Jauk, E., Silvia, P. J., Gredlein, J. M., Neubauer, A. C., Benedek Diedrich, M., Jauk, J., Silvia, E., & Neubauer, J. M. (2018). Assessment of real-life creativity: The Inventory of Creative Activities and Achievements (ICAA). *Psychology of Aesthetics, Creativity, and the Arts*, *12*(3), 304–316. https://doi.org/10.1037/aca0000137

Furnham, A., Batey, M., Booth, T. W., Patel, V., & Lozinskaya, D. (2011). Individual difference predictors of creativity in Art and Science students. *Thinking Skills and Creativity*, *6*(2), 114–121. https://doi.org/10.1016/J.TSC.2011.01.006

Gardner, H. E. (2011). *Frames of mind: The theory of multiple intelligences.* Basic books.

Glăveanu, V. P. (2011). Creating creativity: Reflections from fieldwork. *Integrative psychological and behavioral science*, *45*(1), 100–115. https://doi.org/10.1007/s12124-010-9147-2

Glăveanu, V. P. (2014). Revisiting the "art bias" in lay conceptions of creativity. *Creativity Research Journal*, *26*(1), 11–20. https://doi.org/10.1080/10400419.2014.873656

Glăveanu, V. P., & Valsiner, J. (2019). Is the lightbulb on? Social representations of creativity in a Western context. *Thinking through Creativity and Culture*, 163–182. https://doi.org/10.4324/9781315135625-13

Goncalo, J. A., Flynn, F. J., & Kim, S. H. (2010). Are two narcissists better than one? the link between narcissism, perceived creativity, and creative performance. *Personality and Social Psychology Bulletin*, *36*(11), 1484–1495. https://doi.org/10.1177/0146167210385109

Greenwald, A. G., & Banaji, M. R. (1995). Implicit social cognition: Attitudes, self-esteem, and stereotypes. *Psychological Review*, *102*(1), 4–27. https://doi.org/10.1037/0033-295X.102.1.4

Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. K. (1998). Measuring individual differences in implicit cognition: The implicit association test. *Journal of Personality and Social Psychology*, *74*(6), 1464–1480. https://doi.org/10.1037/0022-3514.74.6.1464

Greenwald, A. G., Nosek, B. A., & Banaji, M. R. (2003). Understanding and ising the Implicit Association Test: I. An improved scoring algorithm. *Journal of Personality and Social Psychology*, *85*(2), 197–216. https://doi.org/10.1037/0022-3514.85.2.197

Hammond, M. M., Neff, N. L., Farr, J. L., Schwall, A. R., & Zhao, X. (2011). Predictors of individual-level innovation at work: A meta-analysis. *Psychology of Aesthetics, Creativity, and the Arts*, *5*(1), 90–105. https://doi.org/10.1037/A0018556

Han, J., & Weiguo, P. (2020). "Little Smart" or "Old Fogey"? The effect of creators' age information on creative ideas evaluation and its mechanisms. *The Journal Of Psychological Science*, *43*(3), 615–621. https://doi.org/10.16719/j.cnki.1671-6981.20200315

Hass, R. W. (2014). Domain-specific exemplars affect implicit theories of creativity. *Psychology of Aesthetics, Creativity, and the Arts*, *8*(1), 44–52. https://doi.org/10.1037/a0035368

Hass, R. W., & Burke, S. (2016). Implicit theories of creativity are differentially categorized by perspective and exemplar domain. *Thinking Skills and Creativity*, *19*, 219–231. https://doi.org/10.1016/j.tsc.2015.10.001

Kapoor, H. (2015). The creative side of the dark triad. *Creativity Research Journal*, *27*(1), 58–67. https://doi.org/10.1080/10400419.2014.961775

Katz, J. H., Mann, T. C., Shen, X., Goncalo, J. A., & Ferguson, M. J. (2022). Implicit impressions of creative people: Creativity evaluation in a stigmatized domain. *Organizational Behavior and Human Decision Processes*, *169*, 104116. https://doi.org/10.1016/j.obhdp.2021.104116

Kaufman, J. C., & Baer, J. (2004). Sure, I'm creative – but not in mathematics!: Self-reported creativity in diverse domains. *Empirical Studies of the Arts*, *22*, 143-155.

Kaufman, J. C., Cole, J. C., & Baer, J. (2009). The construct of creativity: A structural model for self-reported creativity ratings. *Journal of Creative Behavior*, *43*, 119-134.

Kaufman, J. C. (2012). Counting the muses: Development of the Kaufman Domains of Creativity Scale (K-DOCS). *Psychology of Aesthetics, Creativity, and the Arts*, *6*(4), 298–308. https://doi.org/10.1037/A0029751

Kaufman, J. C., Pumaccahua, T. T., & Holt, R. E. (2013). Personality and creativity in realistic, investigative, artistic, social, and enterprising college majors. *Personality and Individual Differences*, *54*(8), 913–917. https://doi.org/10.1016/J.PAID.2013.01.013

Lan, L., & Kaufman, J. C. (2012). American and Chinese similarities and differences in defining and valuing creative products. *Journal of Creative Behavior*, *46*(4), 285–306. https://doi.org/10.1002/jocb.19

Lee, Y. S., Chang, J. Y., & Choi, J. N. (2017). Why reject creative ideas? Fear as a driver of implicit bias against creativity. *Creativity Research Journal*, *29*(3), 225–235. https://doi.org/10.1080/10400419.2017.1360061

Liu, D., Jiang, K., Shalley, C. E., Keem, S., & Zhou, J. (2016). Motivational mechanisms of employee creativity: A meta-analytic examination and theoretical extension of the creativity

literature. *Organizational Behavior and Human Decision Processes*, *137*, 236–263. https://doi.org/10.1016/J.OBHDP.2016.08.001

Masnick, A. M., Valenti, S. S., Cox, B. D., & Osman, C. J. (2010). A multidimensional scaling analysis of students' attitudes about science careers. *International Journal of Science Education*, *32*(5), 653–667. https://doi.org/10.1080/09500690902759053

Moon, R. H., Chun, W., Kim, S., & Chang, J. Y. (2020). The incremental validity of implicit measures of creativity for creative achievement. *Personality and Individual Differences*, *164*, 110088. https://doi.org/10.1016/j.paid.2020.110088

Mueller, J. S., Melwani, S., & Goncalo, J. A. (2012). The bias against creativity: Why people desire but reject creative ideas. *Psychological Science*, *23*(1), 13–17. https://doi.org/10.1177/0956797611421018

Paletz, S. B. F., & Peng, K. (2008). Implicit theories of creativity across cultures: Novelty and appropriateness in two product domains. *Journal of Cross-Cultural Psychology*, *39*(3), 286–302. https://doi.org/10.1177/0022022108315112

Paletz, S. B. F., Peng, K., & Li, S. (2011). In the world or in the head: External and internal implicit theories of creativity. *Creativity Research Journal*, *23*(2), 83–98. https://doi.org/10.1080/10400419.2011.571181

Patston, T. J., Cropley, D. H., Marrone, R. L., & Kaufman, J. C. (2018). Teacher implicit beliefs of creativity: Is there an arts bias? *Teaching and Teacher Education*, *75*, 366–374. https://doi.org/10.1016/j.tate.2018.08.001

Plucker, J. A., Beghetto, R. A., & Dow, G. T. (2004). Why isn't creativity more important to educational psychologists? Potentials, pitfalls, and future directions in creativity research. *Educational Psychologist*, *39*(2), 83–96. https://doi.org/10.1207/S15326985EP3902_1

RStudio Team. (2022). RStudio: Integrated Development Environment for R. RStudio, PBC, Boston, MA URL http://www.rstudio.com/

Reiter-Palmon, R., Robinson-Morral, E. J., Kaufman, J. C., & Santo, J. B. (2012). Evaluation of self-perceptions of creativity: Is it a useful criterion? *Creativity Research Journal*, *24*(2-3), 107-114. https://doi.org/10.1080/10400419.2012.676980

Rocavert, C. (2020). Arts bias and creativity. In *The Curated Reference Collection in Neuroscience and Biobehavioral Psychology*. Elsevier Science Ltd. https://doi.org/10.1016/B978-0-12-809324-5.23612-2

Runco, M. A. (2007). Creativity: Theories and themes: Research, development and practice. Burlington, MA: Elsevier Academic Press.

Runco, M. A., & Acar, S. (2019). Divergent Thinking. *The Cambridge Handbook of Creativity*, 224–254. https://doi.org/10.1017/9781316979839.013

Shao, Y., Zhang, C., Zhou, J., Gu, T., & Yuan, Y. (2019). How does culture shape creativity? A mini-review. *Frontiers in Psychology*, *10*. https://doi.org/10.3389/fpsyg.2019.01219

Tierney, P., & Farmer, S. M. (2002). Creative self-efficacy: Its potential antecedents and relationship to creative performance. *Academy of Management Journal*, *45*(6), 1137–1148. https://doi.org/10.2307/3069429

Valenti, S. S., Masnick, A. M., Cox, B. D., & Osman, C. J. (2016). Adolescents' and emerging adults' implicit attitudes about STEM careers: "Science is not creative." *Science Education International*, *40*(1), 40–58.

Table 1. *Sample Descriptives and Correlations for full sample*

Variable	*M*	*SD*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*
1. Age	21.18	4.35											
2. Gender	1.47	0.50	-.17**										
3. Education	2.59	0.99	.67**	-.07									
4. Employment	0.99	0.10	-.10**	-.08*	-.13**								
5. CSE: Artistic	10.27	3.58	.12**	.12**	.18**	.01							
6. CSE: Business	10.38	2.92	.06	-.07	.13**	.03	.30**						
7. CSE: Scientific	9.11	3.55	.24**	-.16**	.27**	-.06	.39**	.32**					
8. CSE: Conventional	8.79	3.04	.16**	-.01	.21**	.06	.27**	.46**	.28**				
9. EM: Artistic	26.40	4.56	-.30**	.24**	-.21**	.02	.22**	.11**	-.00	.01			
10. EM: Business	19.96	4.36	.05	-.06	.05	-.03	.05	.37**	.10**	.25**	.18**		
11. EM: Scientific	20.08	5.34	.12**	-.12**	.10**	-.01	.11**	.18**	.27**	.14**	.21**	.58**	
12. EM: Conventional	12.49	5.57	.40**	-.08*	.37**	.00	.15**	.13**	.23**	.43**	-.23**	.36**	.31**

*Note. * p < .05; ** p < .01; CSE = Creative Self-Efficacy; EM = Explicit Measure; Gender was coded as: 1 = Male, 2 = Female; Education was coded linearly, with lower values representing lower educational qualifications and higher values indicating higher qualifications; Employment was coded as: 1 = Employed, 2 = Unemployed.*

Table 2. *Hierarchical regressions predicting IAT d-scores in G1 (artistic and business occupations)*

	Step 1				Step 2				Step 3			
Variable	*B*	CI for *B* (LL, UL)	*SE B*	β	*B*	CI for *B* (LL, UL)	*SE B*	β	*B*	CI for *B* (LL, UL)	*SE B*	β
Age	0.002	(-0.024, 0.029)	0.014	0.024	0.005	(-0.021, 0.031)	0.013	0.049	-0.0002	(-0.027, 0.026)	0.013	-0.002
Gender	0.085	(-0.062, 0.232)	0.074	0.11	0.062	(-0.081, 0.206)	0.072	0.079	0.048	(-0.097, 0.193)	0.073	0.061
Education	-0.074	(-0.201, 0.053)	0.064	-0.145	-0.058	(-0.181, 0.065)	0.062	-0.114	-0.041	(-0.167, 0.084)	0.063	-0.081
Employment	-0.065	(-0.146, 0.015)	0.04	-0.161	-0.072	(-0.15, 0.006)	0.039	-0.177	-0.064	(-0.143, 0.014)	0.039	-0.159
EM Artistic					0.027**	(0.008, 0.046)	0.01	0.252**	0.022*	(0.003, 0.042)	0.01	0.209*
EM Business					-0.017	(-0.034, 0.001)	0.009	-0.169	-0.011	(-0.029, 0.008)	0.01	-0.109
CSE Artistic									0.02	(-0.006, 0.047)	0.013	0.148
CSE Business									-0.019	(-0.048, 0.009)	0.014	-0.137
R^2		0.023				0.091				0.101		
Δ R^2						0.068				0.01		

*Note. * p < .05, ** p < .01, *** p <.001. ; CSE = Creative Self-Efficacy; EM = Explicit Measure; Gender was coded as: 1 = Male, 2 = Female; Education was coded linearly, with lower values representing lower educational qualifications and higher values indicating higher qualifications; Employment was coded as: 1 = Employed, 2 = Unemployed.*

Table 3. *Hierarchical regressions predicting IAT d-scores in G2 (artistic and scientific occupations)*

	Step 1				Step 2				Step 3			
Variable	*B*	CI for *B* (LL, UL)	*SE B*	β	*B*	CI for *B* (LL, UL)	*SE B*	β	*B*	CI for *B* (LL, UL)	*SE B*	β
Age	0.024	(-0.005, 0.053)	0.015	0.202	0.025	(-0.004, 0.054)	0.015	0.215	0.015	(-0.013, 0.044)	0.015	0.131
Gender	0.285***	(0.123, 0.447)	0.082	0.31***	0.248**	(0.079, 0.417)	0.085	0.269**	0.214*	(0.048, 0.379)	0.083	0.232*
Education	-0.11*	(-0.205, -0.015)	0.048	-0.257*	-0.108*	(-0.203, -0.013)	0.048	-0.253*	-0.104*	(-0.199, -0.009)	0.048	-0.242*
Employment	-0.055	(-0.157, 0.047)	0.051	-0.11	-0.028	(-0.134, 0.079)	0.054	-0.055	-0.018	(-0.121, 0.084)	0.052	-0.037
EM Artistic					0.019	(-0.003, 0.041)	0.011	0.164	0.012	(-0.009, 0.034)	0.011	0.104
EM Scientific					-0.006	(-0.021, 0.009)	0.008	-0.066	-0.001	(-0.017, 0.014)	0.008	-0.014
CSE Artistic									0.04**	(0.016, 0.064)	0.012	0.318**
CSE Scientific									-0.019	(-0.046, 0.006)	0.013	-0.157
R^2		0.107				0.116				0.18		
Δ R^2						0.009				0.064		

*Note. * p < .05, ** p < .01, *** p <.001. ; CSE = Creative Self-Efficacy; EM = Explicit Measure; Gender was coded as: 1 = Male, 2 = Female; Education was coded linearly, with lower values representing lower educational qualifications and higher values indicating higher qualifications); Employment was coded as: 1 = Employed, 2 = Unemployed.*

Table 4. *Hierarchical regressions predicting IAT d-scores in G3 (artistic and conventional occupations)*

	Step 1				Step 2				Step 3			
Variable	*B*	CI for *B* (LL, UL)	*SE B*	β	*B*	CI for *B* (LL, UL)	*SE B*	β	*B*	CI for *B* (LL, UL)	*SE B*	β
Age	-0.012	(-0.038, 0.015)	0.013	-0.103	0.003	(-0.024, 0.029)	0.013	0.024	-0.001	(-0.028, 0.026)	0.014	-0.007
Gender	0.024	(-0.129, 0.179)	0.078	0.029	0.006	(-0.138, 0.149)	0.073	0.007	0.011	(-0.134, 0.157)	0.073	0.013
Education	-0.099	(-0.213, 0.014)	0.057	-0.204	-0.065	(-0.171, 0.042)	0.054	-0.132	-0.048	(-0.157, 0.061)	0.055	-0.098
Employment	-0.033	(-0.139, 0.072)	0.053	-0.064	-0.035	(-0.132, 0.062)	0.049	-0.067	-0.021	(-0.12, 0.078)	0.05	-0.04
EM Artistic					0.031***	(0.016, 0.047)	0.007	0.363***	0.038***	(0.021, 0.055)	0.009	0.437***
EM Conventional					-0.015	(-0.03, 0.0009)	0.008	-0.196	-0.009	(-0.028, 0.008)	0.009	-0.128
CSE Artistic									-0.016	(-0.043, 0.011)	0.014	-0.119
CSE Conventional									-0.015	(-0.048, 0.018)	0.017	-0.091
R^2		0.063				0.209				0.213		
Δ R^2						0.146				0.004		

*Note. * p < .05, ** p < .01, *** p <.001. ; CSE = Creative Self-Efficacy; EM = Explicit Measure; Gender was coded as: 1 = Male, 2 = Female; Education was coded linearly, with lower values representing lower educational qualifications and higher values indicating higher qualifications; Employment was coded as: 1 = Employed, 2 = Unemployed.*

Table 5. *Hierarchical regressions predicting explicit bias toward creativity in artistic occupations*

	Step 1				Step 2			
Variable	*B*	CI for *B* (LL, UL)	*SE B*	β	*B*	CI for *B* (LL, UL)	*SE B*	B
Age	-0.257***	(-0.36, -0.154)	0.052	-0.242***	-0.267***	(-0.367, -0.167)	0.051	-0.251***
Gender	1.202***	(0.618, 1.787)	0.298	0.146***	0.923**	(0.353, 1.492)	0.289	0.112**
Education	-0.089	(-0.523, 0.344)	0.221	-0.019	-0.275	(-0.696, 0.147)	0.215	-0.059
Employment	-0.253	(-0.59, 0.084)	0.172	-0.056	-0.252	(-0.578, 0.073)	0.166	-0.056
CSE Artistic					0.326***	(0.238, 0.414)	0.045	0.254***
R^2		0.105				0.166		
Δ R^2						0.061		

*Note. * p < .05, ** p < .01, *** p <.001. ; CSE = Creative Self-Efficacy; EM = Explicit Measure; Gender was coded as: 1 = Male, 2 = Female; Education was coded linearly, with lower values representing lower educational qualifications and higher values indicating higher qualifications; Employment was coded as: 1 = Employed, 2 = Unemployed.*

Table 6. *Hierarchical regressions predicting explicit bias toward creativity in business occupations*

	Step 1				Step 2			
Variable	*B*	CI for *B* (LL, UL)	*SE B*	β	*B*	CI for *B* (LL, UL)	*SE B*	β
Age	0.028	(-0.076, 0.133)	0.053	0.028	0.052	(-0.045, 0.149)	0.049	0.051
Gender	-0.598*	(-1.191, -0.007)	0.301	-0.075*	-0.316	(-0.868, 0.236)	0.281	-0.039
Education	0.212	(-0.226, 0.652)	0.224	0.048	-0.055	(-0.466, 0.356)	0.209	-0.012
Employment	-0.142	(-0.484, 0.199)	0.174	-0.033	-0.175	(-0.493, 0.142)	0.162	-0.04
CSE Business					0.564***	(0.461, 0.667)	0.053	0.376***
R^2		0.006				0.143		
ΔR^2						0.137		

*Note. * p < .05, ** p < .01, *** p <.001. ; CSE = Creative Self-Efficacy; EM = Explicit Measure; Gender was coded as: 1 = Male, 2 = Female; Education was coded linearly, with lower values representing lower educational qualifications and higher values indicating higher qualifications; Employment was coded as: 1 = Employed, 2 = Unemployed.*

Table 7. *Hierarchical regressions predicting explicit bias toward creativity in scientific occupations*

	Step 1				Step 2			
Variable	*B*	CI for *B* (LL, UL)	*SE B*	β	*B*	CI for *B* (LL, UL)	*SE B*	β
Age	0.108	(-0.019, 0.235)	0.064	0.086	0.074	(-0.049, 0.197)	0.063	0.059
Gender	-0.974**	(-1.69, -0.256)	0.366	-0.1**	-0.659	(-1.36, 0.044)	0.358	-0.068
Education	0.287	(-0.246, 0.82)	0.271	0.052	0.015	(-0.508, 0.538)	0.266	0.003
Employment	-0.195	(-0.61, 0.219)	0.211	-0.037	-0.161	(-0.563, 0.242)	0.205	-0.03
CSE Scientific					0.385***	(0.273, 0.498)	0.057	0.254***
R^2		0.023				0.08		
Δ R^2						0.057		

*Note. * p < .05, ** p < .01, *** p <.001. ; CSE = Creative Self-Efficacy; EM = Explicit Measure; Gender was coded as: 1 = Male, 2 = Female; Education was coded linearly, with lower values representing lower educational qualifications and higher values indicating higher qualifications; Employment was coded as: 1 = Employed, 2 = Unemployed.*

Table 8. *Hierarchical regressions predicting explicit bias toward creativity in conventional occupations*

	Step 1				Step 2			
Variable	*B*	CI for *B* (LL, UL)	*SE B*	β	*B*	CI for *B* (LL, UL)	*SE B*	B
Age	0.355***	(0.234, 0.476)	0.061	0.274***	0.333***	(0.222, 0.444)	0.056	0.257***
Gender	0.242	(-0.442, 0.927)	0.349	0.024	0.128	(-0.498, 0.755)	0.319	0.013
Education	0.984***	(0.476, 1.49)	0.259	0.174***	0.648**	(0.179, 1.116)	0.239	0.114**
Employment	0.207	(-0.188, 0.603)	0.201	0.038	0.119	(-0.243, 0.482)	0.184	0.022
CSE Conventional					0.689***	(0.574, 0.805)	0.059	0.374***
R^2		0.174				0.308		
Δ R^2						0.134		

*Note. * p < .05, ** p < .01, *** p <.001. ; CSE = Creative Self-Efficacy; EM = Explicit Measure; Gender was coded as: 1 = Male, 2 = Female; Education was coded linearly, with lower values representing lower educational qualifications and higher values indicating higher qualifications; Employment was coded as: 1 = Employed, 2 = Unemployed.*

Supplementary Materials for Who's the Most Creative of Them All?: Art Bias in Laypersons' Explicit and Implicit Beliefs

We also explored the following research questions:

RQ2: Is the IAT d-score predicted by socio-demographics (age, gender, education, employment), explicit creativity assessments, and creative self-efficacy for IATs including only non-artistic occupations?

RQ3: Does an individual's creative self-efficacy have an effect on the way they view different professions as either creative or not?

1. Predictors Of Implicit Attitudes In Non-Artistic Occupations

In order to identify the predictors of implicit art bias in non-artistic occupations, hierarchical regressions predicting IAT d-scores from sociodemographics (age, gender, education, employment), creative self-efficacy in respective professions (Step 2), and explicit measures of bias toward specific professions (Step 3) were computed. Table A1 displays the results for the fourth group, where business-oriented and scientific professions were included (RQ2). In the full model, only a lower explicit measure of bias towards scientific occupations was a significant predictor of IAT d-scores; sociodemographics, explicit measure of bias toward business occupations, and creative self-efficacy were not significant predictors.

When business-oriented and conventional occupations were considered (RQ2), those with lower educational qualifications and lower explicit measure of bias towards conventional occupations were significant predictors of IAT d-scores in the full model (Table A2); other socio-demographics, creative self-efficacy, and explicit measures of bias towards business occupations did not explain IAT d-scores.

Last, upon considering scientific and conventional occupations (Table A3), a higher explicit bias towards scientific occupations and a lower explicit bias towards conventional occupations significantly predicted implicit art bias in the same occupations in the full model (RQ2); sociodemographics and creative self-efficacy were not significant predictors.

2. Creative Self-Efficacy as a Predictor of Implicit and Explicit Attitudes

To identify if creative self-efficacy significantly predicted implicit attitudes across several occupations, linear regressions predicting IAT d-scores from creative self-efficacy were computed (RQ3). Table A4 includes business and scientific occupations and shows that a lower creative self-efficacy in scientific occupations significantly predicted IAT d-scores; creative self-efficacy in business occupations was not a significant predictor. As seen in Table A5, a higher creative self-efficacy in business occupations and a lower creative self-efficacy in conventional occupations significantly predicted IAT d-scores. Table A6 includes scientific and conventional occupations, where creative self-efficacy for either occupations were not significant predictors of IAT d-scores.

To see if creative self-efficacy of various occupations significantly predicted explicit attitudes toward those occupations, linear regressions were computed (RQ3). In the full models for artistic, business-oriented, scientific, and conventional occupations (Table A7, A8, A9, A10) a higher creative self-efficacy was found to be a significant predictor of explicit measures of bias toward all types of occupations.

Tables S1-S6 present group-wise sample descriptives.

Table A1. *Hierarchical regressions predicting implicit attitudes in non-artistic occupations (G4: business and scientific occupations)*

	Step 1				Step 2				Step 3			
Variable	*B*	CI for *B* (LL, UL)	*SE B*	β	*B*	CI for *B* (LL, UL)	*SE B*	β	*B*	CI for *B* (LL, UL)	*SE B*	β
Age	-0.01	(-0.032, 0.012)	0.011	-0.111	-0.002	(-0.024, 0.02)	0.011	-0.023	-0.004	(-0.025, 0.018)	0.011	-0.038
Gender	0.1	(-0.06, 0.267)	0.083	0.112	0.092	(-0.069, 0.254)	0.082	0.1	0.104	(-0.054, 0.262)	0.08	0.113
Education	0.025	(-0.08, 0.131)	0.053	0.054	0.031	(-0.075, 0.136)	0.053	0.065	0.048	(-0.055, 0.152)	0.052	0.102
Employment	0.051	(-0.027, 0.128)	0.039	0.118	0.032	(-0.045, 0.11)	0.039	0.075	0.019	(-0.057, 0.096)	0.039	0.046
CSE Business					0.029	(-0.001, 0.059)	0.015	0.167	0.027	(-0.004, 0.058)	0.016	0.157
CSE Scientific					-0.032*	(-0.058, -0.006)	0.013	-0.223*	-0.019	(-0.046, 0.006)	0.013	-0.139
EM Business									0.012	(-0.012, 0.036)	0.012	0.096
EM Scientific									-0.029**	(-0.049, -0.009)	0.009	-0.299**
R^2		0.004				0.044				0.093		
ΔR^2						0.04				0.049		

*Note. * p < .05; ** p < .01; CSE = Creative Self-Efficacy; EM = Explicit Measure; Gender was coded as: 1 = Male, 2 = Female; Education was coded linearly, with lower values representing lower educational qualifications and higher values indicating higher qualifications; Employment was coded as: 1 = Employed, 2 = Unemployed.*

Table A2. *Hierarchical regressions predicting implicit attitudes in non-artistic occupations (G5: business and conventional occupations)*

	Step 1				Step 2				Step 3			
Variable	*B*	CI for *B* (LL, UL)	*SE B*	β	*B*	CI for *B* (LL, UL)	*SE B*	β	*B*	CI for *B* (LL, UL)	*SE B*	β
Age	0.009	(-0.021, 0.041)	0.016	0.081	0.013	(-0.017, 0.044)	0.015	0.109	0.018	(-0.012, 0.049)	0.015	0.154
Gender	-0.042	(-0.185, 0.101)	0.072	-0.053	0.039	(-0.107, 0.186)	0.074	0.05	0.038	(-0.105, 0.182)	0.072	0.049
Education	-0.081	(-0.201, 0.038)	0.06	-0.172	-0.103	(-0.219, 0.013)	0.059	-0.217	-0.075	(-0.191, 0.041)	0.058	-0.159
Employment	-0.143**	(-0.238, -0.048)	0.048	-0.282**	-0.153**	(-0.245, -0.06)	0.047	-0.301**	-0.144**	(-0.234, -0.054)	0.045	-0.285**
CSE Business					0.051**	(0.018, 0.084)	0.017	0.323**	0.034	(-0.001, 0.069)	0.017	0.213
CSE Conventional					-0.032*	(-0.061, -0.002)	0.015	-0.219*	-0.015	(-0.045, 0.016)	0.015	-0.102
EM Business									0.008	(-0.011, 0.028)	0.009	0.079
EM Conventional									-0.024**	(-0.04, -0.008)	0.008	-0.304**
R^2		0.069				0.134				0.185		
Δ R^2						0.065				0.051		

*Note. * p < .05; ** p < .01; CSE = Creative Self-Efficacy; EM = Explicit Measure; Gender was coded as: 1 = Male, 2 = Female; Education was coded linearly, with lower values representing lower educational qualifications and higher values indicating higher qualifications; Employment was coded as: 1 = Employed, 2 = Unemployed.*

Table A3. *Hierarchical regressions predicting implicit attitudes in non-artistic occupations (G6: scientific and conventional occupations)*

	Step 1				Step 2				Step 3			
Variable	*B*	CI for *B* (LL, UL)	*SE B*	β	*B*	CI for *B* (LL, UL)	*SE B*	β	*B*	CI for *B* (LL, UL)	*SE B*	β
Age	-0.005	(-0.039, 0.029)	0.017	-0.04	-0.007	(-0.042, 0.027)	0.017	-0.06	-0.003	(-0.036, 0.031)	0.017	-0.022
Gender	0.003	(-0.147, 0.153)	0.075	0.004	0.023	(-0.125, 0.172)	0.075	0.029	0.026	(-0.117, 0.168)	0.072	0.033
Education	-0.077	(-0.216, 0.062)	0.07	-0.158	-0.082	(-0.219, 0.055)	0.069	-0.168	-0.071	(-0.202, 0.061)	0.066	-0.145
Employment	-0.001	(-0.084, 0.081)	0.041	-0.004	-0.003	(-0.084, 0.078)	0.041	-0.008	-0.008	(-0.087, 0.07)	0.039	-0.019
CSE Scientific					0.026*	(0.001, 0.051)	0.012	0.208*	0.019	(-0.004, 0.044)	0.012	0.159
CSE Conventional					-0.02	(-0.048, 0.008)	0.014	-0.14	-0.008	(-0.038, 0.023)	0.015	-0.055
EM Scientific									0.019*	(-0.005, 0.035)	0.008	0.246*
EM Conventional									-0.025*	(-0.046, -0.004)	0.01	-0.264*
R^2		0.0001				0.03				0.11		
Δ R^2						0.029				0.08		

Note. * *p* < .05; ** *p* < .01; *CSE = Creative Self-Efficacy; EM = Explicit Measure; Gender was coded as: 1 = Male, 2 = Female; Education was coded linearly, with lower values representing lower educational qualifications and higher values indicating higher qualifications; Employment was coded as: 1 = Employed, 2 = Unemployed.*

Table A4. *Linear regression with creative self-efficacy predicting implicit attitudes in G4 (business and scientific occupations)*

Variable	*B*	CI for *B*		*SE B*	β	R^2
		LL	UL			
Step 1						0.054
CSE Business	0.029	-0.0001	0.058	0.015	0.166	
CSE Scientific	-0.034**	-0.058	-0.01	0.012	-0.239**	

*Note. * p < .05, ** p < .01, *** p <.001.CSE = Creative Self-Efficacy*

Table A5. *Linear regression with creative self-efficacy predicting implicit attitudes in G5 (business and conventional occupations)*

Variable	*B*	CI for *B*		*SE B*	β	R^2
		LL	UL			
Step 1						0.058
CSE Business	0.043**	0.012	0.075	0.016	0.273	
CSE Conventional	-0.035*	-0.064	-0.006	0.015	-0.244	

*Note. * p < .05, ** p < .01, *** p <.001.CSE = Creative Self-Efficacy*

Table A6. *Linear regression with creative self-efficacy predicting implicit attitudes in G6 (scientific and conventional occupations)*

Variable	*B*	CI for *B*		*SE B*	β	R^2
		LL	UL			
Step 1						0.019
CSE Scientific	0.021	-0.002	0.045	0.012	0.176	
CSE Conventional	-0.02	-0.047	0.007	0.014	-0.145	

*Note. * p < .05, ** p < .01, *** p <.001.CSE = Creative Self-Efficacy*

Table A7. *Linear regression with creative self-efficacy in artistic occupations predicting explicit attitudes*

Variable	*B*	CI for *B*		*SE B*	β	R^2
		LL	UL			
Step 1						0.055
CSE Artistic	0.312***	0.219	0.405	0.047	0.238***	

*Note. * p < .05, ** p < .01, *** p <.001.CSE = Creative Self-Efficacy*

Table A8. *Linear regression with creative self-efficacy in business occupations predicting explicit attitudes*

Variable	*B*	CI for *B*		*SE B*	β	R^2
		LL	UL			
Step 1						0.155
CSE Business	0.598***	0.496	0.699	0.052	0.396***	

*Note. * p < .05, ** p < .01, *** p <.001.CSE = Creative Self-Efficacy*

Table A9. *Linear regression with creative self-efficacy in scientific occupations predicting explicit attitudes*

Variable	*B*	CI for *B*		*SE B*	β	R^2
		LL	UL			
Step 1						0.081
CSE Scientific	0.438***	0.331	0.545	0.054	0.287***	

*Note. * p < .05, ** p < .01, *** p <.001.CSE = Creative Self-Efficacy*

Table A10. *Linear regression with creative self-efficacy in conventional occupations predicting explicit attitudes*

Variable	*B*	CI for *B*		*SE B*	β	R^2
		LL	UL			
Step 1						0.196
CSE Conventional	0.816***	0.696	0.937	0.061	0.444***	

*Note. * p < .05, ** p < .01, *** p <.001.CSE = Creative Self-Efficacy*

Table S1. *Sample Descriptives and Correlations for G1*

Variable	*M*	*SD*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*
1. Age	20.84	4.37												
2. Gender	1.55	0.50	-.13											
3. Education	2.47	0.87	.70**	-.04										
4. Employment	0.99	0.09	.02	-.08	-.16									
5. CSE: Artistic	10.38	3.30	.16	-.03	.14	.21*								
6. CSE: Business	10.10	3.15	.08	-.25**	.23*	.18	.22*							
7. CSE: Scientific	8.89	3.59	.23*	-.19*	.26**	.05	.39**	.36**						
8. CSE: Conventional	8.61	3.39	.20*	-.11	.31**	.10	.24**	.39**	.38**					
9. EM: Artistic	26.72	4.27	-.08	.13	-.11	-.07	.17	-.08	-.03	-.09				
10. EM: Business	19.45	4.58	.06	-.22*	.06	.01	-.14	.31**	-.03	.18	.11			
11. EM: Scientific	19.73	5.32	.12	-.27**	.05	.10	.09	.18	.21*	.15	.29**	.52**		
12. EM: Conventional	11.97	5.43	.33**	-.14	.32**	.03	.11	.15	.27**	.42**	-.16	.35**	.36**	
13. IAT D-score	0.31	0.45	-.11	.19*	-.16	.08	.16	-.18*	.03	-.04	.21*	-.16	-.02	-.21*

*Note. * p < .05; ** p < .01; CSE = Creative Self-Efficacy; EM = Explicit Measure; Gender was coded as: 1 = Male, 2 = Female; Education was coded linearly, with lower values representing lower educational qualifications and higher values indicating higher qualifications; Employment was coded as: 1 = Employed, 2 = Unemployed.*

Table S2. *Sample Descriptives and Correlations for G2*

Variable	*M*	*SD*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*
1. Age	20.88	3.92												
2. Gender	1.50	0.50	-.16											
3. Education	2.58	1.07	.64**	-.10										
4. Employment	0.97	0.18	-.33**	-.09	-.11									
5. CSE: Artistic	10.28	3.66	.21*	.05	.21*	.05								
6. CSE: Business	10.18	3.02	.11	-.13	.11	.09	.44**							
7. CSE: Scientific	9.35	3.65	.17	-.18*	.33**	-.06	.42**	.34**						
8. CSE: Conventional	8.53	2.91	.22*	.07	.19*	.03	.42**	.48**	.35**					
9. EM: Artistic	27.12	3.92	-.26**	.16	-.15	.19*	.16	.11	.03	.05				
10. EM: Business	20.00	4.28	.09	.03	.10	-.04	.13	.45**	.19*	.30**	.17			
11. EM: Scientific	20.32	5.49	.12	-.18*	.18	-.07	.05	.16	.37**	.02	.13	.51**		
12. EM: Conventional	12.23	5.17	.33**	.07	.32**	-.08	.23*	.24**	.30**	.47**	-.18*	.49**	.29**	
13. IAT D-score	0.22	0.46	-.07	.30**	-.20*	-.00	.26**	-.00	-.13	-.02	.20*	-.11	-.11	-.04

*Note. * p < .05; ** p < .01; CSE = Creative Self-Efficacy; EM = Explicit Measure; Gender was coded as: 1 = Male, 2 = Female; Education was coded linearly, with lower values representing lower educational qualifications and higher values indicating higher qualifications; Employment was coded as: 1 = Employed, 2 = Unemployed.*

Table S3. *Sample Descriptives and Correlations for G3*

Variable	*M*	*SD*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*
1. Age	21.24	4.19												
2. Gender	1.46	0.50	-.10											
3. Education	2.64	0.99	.60**	.02										
4. Employment	0.98	0.13	-.11	-.15	-.33**									
5. CSE: Artistic	10.37	3.62	.09	.22*	.22*	-.18								
6. CSE: Business	10.71	2.84	.14	.03	.14	-.14	.22*							
7. CSE: Scientific	9.20	3.60	.22*	-.24*	.23*	-.20*	.37**	.33**						
8. CSE: Conventional	8.95	2.98	.12	-.04	.21*	.14	.28**	.48**	.28**					
9. EM: Artistic	25.91	5.38	-.19	.27**	-.18	-.04	.42**	.27**	.13	.18				
10. EM: Business	19.98	5.15	.14	-.03	.16	-.09	.14	.53**	.21*	.46**	.27**			
11. EM: Scientific	20.36	6.02	.15	-.03	.09	.01	.12	.36**	.25**	.37**	.31**	.75**		
12. EM: Conventional	12.65	6.31	.54**	.00	.47**	.07	.15	.20*	.20*	.48**	-.11	.48**	.39**	
13. IAT D-score	0.52	0.47	-.26**	.15	-.31**	-.01	-.02	-.02	-.20*	-.13	.38**	.07	.11	-.29**

*Note. * p < .05; ** p < .01; CSE = Creative Self-Efficacy; EM = Explicit Measure; Gender was coded as: 1 = Male, 2 = Female; Education was coded linearly, with lower values representing lower educational qualifications and higher values indicating higher qualifications; Employment was coded as: 1 = Employed, 2 = Unemployed.*

Table S4. *Sample Descriptives and Correlations for G4*

Variable	*M*	*SD*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*
1. Age	22.52	5.30												
2. Gender	1.37	0.49	-.35**											
3. Education	2.82	1.04	.65**	-.24**										
4. Employment	1.00	0.00	NA	NA	NA									
5. CSE: Artistic	9.89	3.34	.01	.10	.17*	NA								
6. CSE: Business	10.33	2.74	-.18*	.03	.00	NA	.22*							
7. CSE: Scientific	9.45	3.34	.23**	-.13	.25**	NA	.39**	.21*						
8. CSE: Conventional	9.02	2.69	.01	-.06	.19*	NA	.31**	.47**	.28**					
9. EM: Artistic	24.91	5.10	-.49**	.32**	-.28**	NA	.30**	.26**	.02	.08				
10. EM: Business	19.86	3.87	-.07	-.04	-.04	NA	.10	.29**	.10	.33**	.29**			
11. EM: Scientific	20.56	4.67	.02	-.02	.11	NA	.23**	.09	.33**	.16	.31**	.45**		
12. EM: Conventional	13.82	5.69	.40**	-.30**	.43**	NA	.25**	.11	.24**	.45**	-.25**	.33**	.24**	
13. IAT D-score	-0.06	0.49	-.05	.10	.01	NA	-.08	.13	-.17*	-.07	.00	-.03	-.29**	-.11

*Note. * p < .05; ** p < .01; CSE = Creative Self-Efficacy; EM = Explicit Measure; Gender was coded as: 1 = Male, 2 = Female; Education was coded linearly, with lower values representing lower educational qualifications and higher values indicating higher qualifications; Employment was coded as: 1 = Employed, 2 = Unemployed.*

Table S5. *Sample Descriptives and Correlations for G5*

Variable	*M*	*SD*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*
1. Age	20.67	3.91												
2. Gender	1.46	0.50	-.05											
3. Education	2.50	0.98	.70**	.09										
4. Employment	1.00	0.00	NA	NA	NA									
5. CSE: Artistic	10.08	3.80	.14	.20*	.21*	NA								
6. CSE: Business	10.50	2.85	.21*	-.21*	.16	NA	.25**							
7. CSE: Scientific	8.65	3.60	.33**	-.15	.28**	NA	.42**	.39**						
8. CSE: Conventional	8.86	3.18	.26**	.02	.16	NA	.24*	.48**	.17					
9. EM: Artistic	27.44	3.39	-.35**	.14	-.32**	NA	.13	-.10	-.08	-.14				
10. EM: Business	20.52	4.29	.18	-.21*	.01	NA	-.06	.18	.13	-.00	-.11			
11. EM: Scientific	20.16	5.20	.20*	-.27**	.06	NA	.10	.08	.24**	-.05	-.05	.64**		
12. EM: Conventional	12.31	5.84	.37**	.03	.31**	NA	.13	-.07	.18	.29**	-.44**	.24*	.29**	
13. IAT D-score	0.36	0.45	-.11	-.01	-.17	NA	-.14	.13	-.13	-.10	.20*	.05	.02	-.35**

*Note. * p < .05; ** p < .01; CSE = Creative Self-Efficacy; EM = Explicit Measure; Gender was coded as: 1 = Male, 2 = Female; Education was coded linearly, with lower values representing lower educational qualifications and higher values indicating higher qualifications; Employment was coded as: 1 = Employed, 2 = Unemployed.*

Table S6. *Sample Descriptives and Correlations for G6*

Variable	*M*	*SD*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*
1. Age	20.65	3.76								
2. Gender	1.48	0.50	-.10							
3. Education	2.49	0.91	.76**	-.02						
4. Employment	1.00	0.00	NA	NA	NA					
5. CSE: Artistic	10.70	3.82	.23*	.16	.17	NA				
6. CSE: Business	10.50	2.95	.14	.13	.18	NA	.41**			
7. CSE: Scientific	9.01	3.57	.28**	-.02	.25*	NA	.40**	.31**		
8. CSE: Conventional	8.72	3.12	.20*	.11	.16	NA	.13	.47**	.23*	
9. EM: Artistic	26.54	4.50	-.19*	.33**	-.14	NA	.09	.09	-.07	.00
10. EM: Business	20.00	4.00	-.06	.17	.02	NA	.11	.45**	-.00	.24*
11. EM: Scientific	19.21	5.40	.11	.10	.04	NA	.08	.24*	.20*	.19*
12. EM: Conventional	11.68	4.67	.32**	.00	.27**	NA	.03	.17	.15	.51**
13. IAT D-score	0.47	0.45	-.17	.08	-.22*	NA	-.01	-.03	.10	-.15

*Note. * p < .05; ** p < .01; CSE = Creative Self-Efficacy; EM = Explicit Measure; Gender was coded as: 1 = Male, 2 = Female; Education was coded linearly, with lower values representing lower educational qualifications and higher values indicating higher qualifications; Employment was coded as: 1 = Employed, 2 = Unemployed.*