International Association of Empirical Aesthetics 2024

Program

Wednesday, May 08, 2024

(Hanging up Posters 1, Sala Sa Roqueta)

9:00 AM	**Registration**	Lluís Dòmenec Auditorium
9:30 AM	**Opening Remarks**	Lluis Dòmenec Auditorium
10:00 AM	**Keynote speaker: Gerald C. Cupchik**	Lluis Dòmenec Auditorium
11:00 AM	**Coffee break & Posters 1**	
11:30 AM	**Symposium** *The place of aesthetic experience in psychological aesthetics and neuroaesthetics.* (M. Skov & M. Nadal)	Lluis Dòmenec Auditorium
	Session *Performance*	Sala George Bernanos
	Session *Art and well-being*	Sala Miquel dels Sants Oliver
1:00 PM	**Lunch & Posters 1**	
2:30 PM	**Symposium** *What behaviour genetics tell us about aesthetics* (G. Bignardi & R. Chamberlain)	Lluis Dòmenec Auditorium
	Session *Living spaces*	Sala George Bernanos
	Session *Music appreciation*	Sala Miquel dels Sants Oliver
4:00 PM	**Coffee break & Posters 1**	
4:30 PM	**Symposium** *The Impact of AI on the Artworld, the Artist and Empirical Aesthetics* (A. Brielmann & G. Hayn-Leichsenring)	Lluis Dòmenec Auditorium
	Session *Development and expertise*	Sala George Bernanos
	Session *Visual art action and perception*	Sala Miquel dels Sants Oliver

(Taking down Posters 1)

Thursday, May 09, 2024

8.30 AM		
9:00 AM	**Symposium** *The role of curvature in aesthetic appeal* (D. Walther & M. Bertamini)	Lluis Dòmenec Auditorium
	Symposium *The Neurocognition of Liveness* (G. Orgs)	Sala George Bernanos
	Session *Gender*	Sala Miquel dels Sants Oliver
10:30 AM	**Coffee break & Posters 2**	
11:00 AM	**Keynote speaker: Carlos Velasco**	Lluis Dòmenec Auditorium
12:00 PM	**Gustav T. Fechner Award**	Lluis Dòmenec Auditorium
12:30 PM	**Margaret Floy Washburn Award**	Lluis Dòmenec Auditorium
1:00 PM	**Lunch & Posters 2**	
2:30 PM	**Symposium** *Urban Aesthetics: The Past, Present and Future* (H. Leder)	Lluis Dòmenec Auditorium
	Session *Models of hedonic value*	Sala George Bernanos
	Session *Narrative*	Sala Miquel dels Sants Oliver
4:00 PM	**OCTA Workshop**	Sala Alexandre Rosselló
4:00 PM	**Coffee break & Posters 2**	
4:30 PM	**Symposium** *Integrating Psychological Insights into Urban Design and Planning* (N. Ruta & C. Damiano)	Lluis Dòmenec Auditorium
	Session *Visual art appreciation*	Sala George Bernanos
	Session *Music action and perception*	Sala Miquel dels Sants Oliver
6:30 PM	**Es Baluard Museum Tour and Reception**	6:30 - 10:00 PM

Friday, May 10, 2024

8.30 AM		
9:00 AM	**Symposium** *Empirical insights into performing arts aesthetics from multiple perspectives on the performative situation* (E. Cross & J. Christensen)	Lluis Dòmenec Auditorium
	Session *Methods*	Sala George Bernanos
	Session *Stimulus features*	Sala Miquel dels Sants Oliver
10:30 AM	**Coffee break & Posters 3**	
11:00 AM	**Keynote speaker: Amy Belfi**	Lluis Dòmenec Auditorium
12:00 PM	**Alexander Baumgarten Award**	Lluis Dòmenec Auditorium
12:30 PM	**Robert Francès Award**	Lluis Dòmenec Auditorium
1:00 PM	**Lunch & Posters 3**	
2:30 PM	**Symposium** *What is Arts and Health: Challenges and Future Horizons* (M. Trupp & E. Vessel)	Lluis Dòmenec Auditorium
	Session *Creation and appreciation*	Sala George Bernanos
	Session *Exhibitions*	Sala Miquel dels Sants Oliver
4:15 PM	**Membership Committee**	Sala Miquel dels Sants Oliver & George Bernanos
5:00 PM	**General Meeting**	Sala Miquel dels Sants Oliver & George Bernanos

Abstracts

Posters

Wednesday, May 08, 2024

Poster Session 1

#1
The Aesthetic Impacts of Architecture
Vasiliki Meletaki*, Isabelle Lee, Vicente Estrada Gonzalez, and Anjan Chatterjee.
*Penn Center for Neuroaesthetics, University of Pennsylvania, Philadelphia, PA, USA

Architecture plays a significant role in how individuals go about their daily lives and in their sense of wellbeing. The design and visual elements of a building can evoke a range of emotional responses. This research study explores the relationship between two elements of the experience of architecture: its aesthetic impacts and the psychological dimensions of architecture. The aesthetic impacts are verbal descriptions of the aesthetic and cognitive effects of artwork, while the psychological dimensions of architecture refer to three components: coherence, fascination, and hominess. Participants over the age of 18 and located in the U.S. were enrolled in this online study, which consisted of 16 survey versions, each displaying 30 architectural interior images across a variety of architectural styles (from 5 continents) and types of use (residential, religious, commercial, public and prisons) for a total of 480 images. Our objective was to build a comprehensive, culturally diverse database of interior images to be used in future research studies. Participants rated each interior image on a five-point Likert scale for the impact factors, the dimensions of architecture, and other elements such as interest and beauty. Participants then chose the interior image they liked the most and described why. Linear mixed effect models were used to understand if and how ratings are modulated by building type, familiarity, expertise, or individual characteristics. Principal Component Analysis is used to explore relationships between aesthetic impacts and dimensions of architecture. Preliminary analysis shows strong interactions between aesthetic dimensions and positive aesthetic impacts and suggests that building type modulates aesthetic impacts and psychological dimensions of architecture. Our work advances our understanding of how people experience spaces and can inform the design of spaces to improve human well-being.

#2
Beautiful body has beautiful heart? The effect of body attractiveness on perceived forgivingness
Jun Zhang* and Xianyou He.
*School of Psychology, South China Normal University, Guangzhou, China

While prior research has extensively examined the beauty-is-good stereotype in the context of facial attractiveness, this study seeks to broaden its scope by investigating whether this stereotype extends to body attractiveness. In Chinese culture, individuals with heavier weights, often deemed less attractive, are associated with high forgiveness traits (e.g., "心宽体胖Xīn Kuān Tǐ Pán" which means heavier people has a bigger heart), challenging the conventional beauty-is-good stereotype.
 Inspired by Chinese culture, this research conducted four experiments to assess the beauty-is-good stereotype using varying body shape. Specifically, we explored the impact of body weight on perceived forgivingness in Experiment 1a, 1b and 2. Results from a slide rating task (Experiment 1a) and an implicit association test (Experiment 1b) demonstrated that

participants perceived heavy targets as less attractive but more forgiving than thin targets. Intriguingly, transgressors displayed a preference for cooperating with heavy targets over their thin counterparts, believing that the former possessed higher levels of forgiveness in a number-sequence game (Experiment 2). Furthermore, Experiment 3 further manipulated body attractiveness from waist-to-hip ratio rather than body weight, and revealed that abdominal overweight, compared to gluteal overweight, was thought to be more forgiving but less attractive.

In conclusion, our findings unveiled that lower body attractiveness might be considered more moral, contrary to previous studies of facial attractiveness. This study contributes to a more comprehensive understanding of how aesthetic dimensions, specifically body attractiveness, shape perceptions of moral traits, expanding the discourse on beauty-related stereotypes.

#3
A New Culturally Diverse Art Stimuli Database
Isabella Bobrow*, Olivia Kim, Eileen Cardillo, Vicente Estrada Gonzalez, Vasiliki Meletaki, and Anjan Chatterjee.
*Penn Center for Neuroaesthetics, University of Pennsylvania, Philadelphia, USA

Too often, research into the impact of art relies on exemplars from the Western canon of art history. Can we really make generalizable claims if only a narrow selection of artworks are used in research? To address this problem, we are creating a library of over 300 art images that can be used by other aesthetics researchers. Images were carefully chosen by a panel of art experts representing South Asia, Africa and Latin America, in addition to Europe and North America, also encompassing religious art, modern art, and public murals. Each image has crowdsourced ratings for liking, beauty, familiarity, and 11 aesthetic impact terms established by Christensen et al. (2022). This normed, culturally diverse database will allow researchers to select images with known characteristics for their experiments.

Preliminary results suggest that the library samples a wide range of aesthetic impacts. Some descriptive terms, such as "interested," are the highest rated for nearly all stimuli. Ratings for intensity terms (enraptured/interested) were the most varied, except in the modern art group. For modern artworks, positive valence and cognitive terms (enlightened/inspired/edified) were the most highly varied. For all other categories, especially the African artworks for which we would expect lowest familiarity, cognitive terms had the lowest variance.

In line with Open Science values, the library will be free to use. We hope that access to this resource encourages other researchers to incorporate more culturally diverse stimuli in their research.

#4
Curiosity, Art, and the Pleasure of Knowing
Stacey Humphries* and Laura Devis.
*Department of Psychology, Goldsmiths University of London, London, UK

Curiosity is the intrinsic desire to explore and seek information. Exhibition texts presented alongside artworks may enhance aesthetic experiences if the viewer finds the information interesting, but museum goers are not usually able to choose the type of information they receive. In empirical aesthetics, there is a lack of research examining the relationships between curiosity, information-seeking and art engagement. To test the hypothesis that curiosity plays a significant role in aesthetic experiences, we manipulated the amount of agency participants had over what and how much information they received about artworks.

Our experiment included 60 visual artworks, with three categories of information per artwork: information about the artist, the meaning of the piece, and the context in which it was produced. In the first block, participants provided initial liking and curiosity ratings on each painting. In the second block, each painting was randomly assigned to one of three agency conditions: no agency (50% chance of receiving information from one category), some agency (choice to receive one piece of information from a random category), or full agency (participants decided whether, what, and how much information to receive). After receiving 0-3 pieces of information, determined by the agency condition and participants' choices, they re-evaluated their liking and curiosity towards each painting.

Initial aesthetic ratings were significantly higher for paintings that participants subsequently chose to receive information about. When examining the difference in aesthetic ratings from block 1 to block 2, we found that information enhanced the aesthetic experience only when participants chose to receive it. Finally, we found that information reduces curiosity, except in the "some choice" condition – where participants were consciously aware of remaining information gaps that they could not resolve. These early findings are encouraging and have implications for museums and galleries.

#5

Ecological Art Experience: Aesthetic Emotions and Bodily Synchronization with Films

Lucrezia Lucchi*, Lisa-Maria van Klaveren, Julia Blau, and Ralf Cox.
*Developmental Psychology, University of Groningen, Groningen, The Netherlands

How meaning emerges in art forms such as film is intimately related to how we perceptually, emotionally, and behaviorally attune to artworks. Recent embodied approaches to art experience emphasize the circular nature of emotional and bodily engagement with art. The so-called 'motion-emotion' loop refers to how body feedback (e.g., from changes in body posture) promotes behavioral and emotional regulation, and thus the experience of emotion and formation of appreciative judgments. Bodily and emotional engagement with audiovisual media, like films, in particular whether and how whole-body movement and physiological arousal reflect people's aesthetic emotions while watching films, has not yet been thoroughly investigated. In this study, each participant watched two films that differed significantly with respect to their editing dynamics while whole-body movement and heart-rate data were recorded. Questionnaires about subjects' mood, personality, and aesthetic emotions were also administered. Complexity measures of movement energy (ME) and heart-rate variability (HRV) were obtained using fractal analysis and recurrence quantification analysis (RQA). Synchronization between films' and participants' ME were examined using cross RQA. Correlations between these outcomes and subjects' demographic characteristics, mood, personality, and aesthetic experience of the films were explored. Main hypotheses addressed whether editing structure has a significant impact on a) behavioral and physiological coordination with films' ME, and b) subjective aesthetic appraisal (including aesthetic emotions and liking of films). We also investigated how synchrony of individuals' ME and HRV with a film's ME relates to the emergence of specific aesthetic emotions. If people's self-reports of how they experienced different films are systematically linked to their bodily movements and arousal, this could be interpreted as evidence in favor of people's art-elicited emotional states and aesthetic appraisals being reflected in their bodily engagement with artwork.

#6

Is Aesthetic appreciation uniquely human? Dehumanized groups are perceived as lacking the ability to appreciate beauty

Yan Duan*, Xianyou He, and Jiaxin Shi.
*School of Psychology, South China Normal University, Guangzhou, China

Despite empirical evidence suggesting that aesthetic appreciation is not specific to Homo sapiens, little is known about whether people may widely hold an assumption that beauty is an exclusively human attribute. The present study examined whether individuals underestimate the aesthetic skills and needs of dehumanized groups. Three studies (N = 600) using diverse measures and manipulations were consistent with that idea.
 Our studies found that people tended to underestimate the aesthetic ability of nonhuman animals (e.g., chimpanzees) and dehumanized groups (e.g., homeless people), compared to close friends or oneself (Study 1). This bias was amplified when evaluating complex aesthetic objects (e.g., abstract paintings) but not simpler aesthetic objects (e.g., attractive faces) (Study 2). Furthermore, Study 3 pinpointed mechanistic dehumanization (i.e., denial of emotional capacity) rather than animalistic dehumanization (i.e., denial of cognitive agency) as the key factor diminishing recognition of aesthetic abilities, negatively influencing people's willingness to donate complex art objects. Overall, our findings suggest that people believe aesthetic appreciation is uniquely human and undervalue the aesthetic abilities of dehumanized groups. The implications of our findings open a novel avenue for exploring the connection between humanness and aesthetic appreciation.

#7

The potential and limitations of using two-dimensional versions of WHR and BMI to study the relationship between female attractiveness and body measurements

Emily Ufken* and Ronald Hübner.
*Department of psychology, University of Konstanz, Konstanz, Germany

The study of physical attractiveness, particularly in relation to female bodies, is a significant area of research in aesthetics, art, and health. A key problem in this field is identifying the specific features that contribute to a body's attractiveness and understanding why these features are considered attractive. From an evolutionary perspective, a woman's beauty is expected to be closely linked to her health and fertility. The waist-to-hip ratio (WHR) and the body-mass-index (BMI), which are widely recognized indicators of these qualities, are somewhat correlated with attractiveness. However, using these measures as indicators of health and fertility can be challenging, if not impossible, as they are based on information such as body circumference or body weight, which is typically not readily available to the observer. To address this issue, studies on physical attractiveness that present two-dimensional (2D) stimuli (such as line drawings, photographs, or historical paintings) have simply used 2D versions of the WHR and BMI, primarily across-WHR and perimeter-area-ratio (PAR), as cues. However, these 2D measures are dependent on the viewpoint, and it remains unclear how they relate to their 3D counterparts. In this study, we used a set of photographs of 166 women with known WHR and BMI, taken from various viewpoints, and extracted the across-WHR and PAR. We then applied regression analysis to calculate the relationships between the 3D and 2D measures for the different viewpoints. Our findings indicate that the 2D measurements of women's bodies, when viewed from the front or back, are very similar to the corresponding 3D measurements. However, when viewed from other perspectives, the similarity can significantly decrease. These results provide valuable insights

for future research on the attractiveness of women's bodies and underscore the limitations that need to be taken into account when using different 2D body measurements.

#8
Exploring Physiological and Psychological Reactions in Multisensorial Focused-Attention Meditations: The Intersection with Aesthetic Experience and Well-being.

Anna Mankowska*, Julia Strogonova, and Rebecca Chamberlain.
*Psychology, Goldsmiths University, United Kingdom

Immersive meditation, blending audio-visual stimuli, is a burgeoning frontier in well-being research. This study explores its impact on stress, anxiety, heart rate (HR), and connectedness. It investigates the synergy between visual art styles and meditation practices for anxiety reduction through positive aesthetic emotions (AE).
 Participants were assigned to Real Nature (RN), Digital Nature (DN), Abstract (AB), or Control (audio only; CN) conditions. The research aimed to identify the most effective meditation format by comparing pre-and post-meditation scores for state anxiety, connectedness, HR, and AE. The hypothesis suggests that immersive audio-visual meditation will significantly reduce state stress and anxiety, with real and digital nature conditions yielding more substantial stress reduction. Predictions include a higher decrease in state anxiety and more positive aesthetic emotions for the real figurative audio-visual format. Abstract audio-visual stimuli may induce stronger novelty and curiosity, potentially increasing HR. All types of immersive meditation are expected to induce HR changes, with RN and DN conditions showing greater decreases, reflecting physiological relaxation. Conditions evoking nature are predicted to enhance connectedness, fostering a heightened sense of presence and connection with the environment.
 In a between-subject design with four conditions, both audio-visual and audio-only meditations reduced state anxiety scores. Although no significant differences emerged in stress and anxiety levels across conditions, participant satisfaction revealed intriguing insights. Aesthetic pleasure correlated positively with a willingness to revisit, while satisfaction with audio and visual elements showed inverse relationships with overall aesthetic appeal. Higher AE scores, notably prototypical, epistemic, nostalgia-relaxation, and animation, correlated with a greater decrease in state anxiety. These findings lay a foundation for understanding the interplay between visual elements, immersion, and well-being. Further research is essential to delineate the effects of immersive meditation and optimize its design for enhanced relaxation, mindfulness, and connectedness.

#9
Abstract art as a novel way to measure emotion recognition: In relation to autistic traits

Young Ah Kim*, Elif Gülen, Kamilla Lauer, Theresa Demmer, Corinna Kühnapfel, Giorgia Silani, and Matthew Pelowski.
*Faculty of Psychology, University of Vienna, Vienna, Austria

Emotion recognition ability (ER) is considered to be lower in individuals with high autistic traits, which can lead to difficulties in everyday social interaction, calling for better understanding of the mechanisms of atypical ER. However, most previous research on ER is based on facial expressions, which may confound findings due to tangential issues related to autistic traits such as reduced eye contact, atypical face processing, and/or social anxiety. Instead, visual art is a medium which individuals with high autistic traits might have an advantage in, as autistic traits are related to altered visual processing style such as more

attention to details and superior disembedding ability. This study, for the first time, investigated emotion recognition through visual art in relation to autistic traits.

Twenty-nine adult participants with high autistic traits and 29 age- and gender-matched participants with low autistic traits were instructed to watch videos of people making abstract line drawings expressing a given emotion, only showing the hand, pen, and paper, and guess which emotion is being expressed. A facial expression paradigm was administered as a comparison.

Although, in line with previous studies, the low-trait group performed significantly better than the high-trait group in the face-based task (independent samples t-test; $p = 0.024$), there was no significant difference in performance between the two groups for the art-based task ($p = 0.570$). Even more, when controlling for alexithymia traits, the high-trait group performed significantly better (regression analysis; $p = 0.008$).

The findings suggest that when using visual art as a medium, individuals with high autistic traits do not show reduced ER ability or even show heightened ability. This result calls for a rethinking of past findings—suggesting that past results on atypical ER using face-based tasks may have been task-specific—and highlights the potential of using visual art to study ER.

#10
Evidence of the Impact of Art Viewing on Well-being and Suggested Underlying Mechanisms: A Systematic Review

MacKenzie Trupp.
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"In recent years, art viewing in museums, hospitals, and even online has been increasingly recognized as having benefits for well-being. However, research on such effects is less than cohesive, with a diverse array of art-viewing activities and measured outcomes and a systematic missing description and evaluation of elements like viewing duration, frequency, type, and number of artworks. Furthermore, our understanding of how art viewing could be beneficial, i.e., ,mechanism, for elicited response, is underdeveloped.

To address these issues, we systematically reviewed the literature over the past 22 years (PROSPERO ID: CRD42022296890). We aimed to critically evaluate the evidence of the well-being effects of art viewing, provide a summary of the characteristics of art viewing interventions and experiences, and a thematic analysis of the mechanisms linking features to outcomes. In searching four databases, we screened 4842 individual articles for relevance and thoroughly examined and extracted data from 44 that met our inclusion criteria.

In reviewing the methods, less than half of the studies included control conditions, and only a handful had follow-up measures to assess the longevity of well-being benefits. We call into question the rigor of past studies and challenge our current conclusions that art may or should be utilized as an intervention using this evidence base, as only half of the included studies reported significant well-being improvements across physical, experienced, evaluative, or eudemonic well-being. Across the studies, we isolated many diverse art-viewing ingredients, durations, frequencies, and accessory activities, including categories of social engagement, multi-modal sensory integration, educational activities, and personal reflection. Finally, we found a range of mechanisms,including cognitive, emotional, social, spiritual, and physical, that were often suggested, sometimes explained, but, indeed, rarely tested, and which were also often field-dependent and reflected the siloed nature of science. We discuss the implications for future experimental research.

#11

How do the affective benefits of music and visual art differ?
Jennifer Drake* and Cherise Chancellor.
*Department of Psychology, Brooklyn College, City University of New York, Brooklyn, USA, and Department of Psychology, The Graduate Center, City University of New York, New York, USA

Engaging in both music and visual art has been shown to improve affect (Grossman & Drake, 2023). However, affective responses may differ in terms of whether the engagement is active (making) or receptive (viewing, listening). One piece of evidence for this is that while both making and viewing visual art reduces negative affect, only making visual art increases positive affect (Drake et al., 2024). And our motivation for engaging in these two art forms may differ. For example, one study found that people report listening to music as a way to improve their affect but viewing works of visual art as a way to gain self-education (Miu et al., 2016).
In this study, we compared the experience and effects of actively versus passively engaging in music and visual art. We examined the effect of art form (music versus visual art) and level of engagement (active versus receptive) on three outcomes: strength of aesthetic emotions reported; type of emotion regulation strategies elicited, and motivations for music or visual art engagement.
We recruited 120 participants and randomly assigned them to complete a survey about one of the following activities: singing, listening to music, drawing, or viewing art. Data collection is currently ongoing (n = 54) and will finish in February 2024. We hypothesize that engagement with music (compared to visual art) will yield stronger reported aesthetic emotions (as measured by the GEMS, Zenter et al., 2008). We also hypothesize that active (compared to receptive) engagement with both art forms will result in greater use of emotion regulation strategies (as measured by the ERS-ACA, Fancourt et al., 2019). This study will further elucidate the affective benefits of engaging in active versus receptive artistic activities.

#12

Considering Emotional-Phenomenal Experience: a new approach to exploring the wellbeing and societal benefits of arts engagement
Stephanie Miller.
Faculty of Psychology, University of Vienna, Vienna, Austria

Recent years have amplified the focus on various impacts of arts engagement, from health and wellbeing to societal transformation. New research continually reinforces the complexity of these effects and possible underlying mechanisms. As we work to clarify these multifaceted impacts, there is a growing need for more comprehensive and holistic assessments of the subjective art-experiences which spark these effects. This presentation will advocate and provide a new approach for the application of an emotional-phenomenal model to investigations of wellbeing-related impacts of engagement with the arts.
 We recently conducted a large-scale museum study, collecting nearly 3000 participants‚Äô self-reports of emotional and phenomenal states experienced while engaging with a specific artwork. These reports were analyzed via network modelling and latent class analyses; through this, 5 supraordinate varieties of art-experience were identified, each with a distinct phenomenal profile. This method goes on to assign each individuals‚Äô report to one of these Experience Type classes, based on their unique answering pattern, generating discrete

participant groups based on nuanced reports of felt-experience. Further evaluations of an art-interaction and its impacts can be evaluated across these groups.

In this talk, we will explore Experience Type group differences in various wellbeing and societal impact metrics, as well as typical aesthetic judgements, such as liking, beauty, and meaningfulness, which have variably been identified as likely mediators of these effects. This group-based analysis enables us to examine the cooccurrence of specific evaluations for individuals who report similar emotional experiences, revealing critical relationships between judgements and impacts that may suggest mechanisms for these impacts. While presenting new findings connecting subjective experience, aesthetic judgements, and wellbeing/societal benefits, we hope to highlight the value of a comprehensive emotional-phenomenal model and the utility of classifying varieties of art experience in the context of arts and health.

#13

Art Therapy Unmasked: Evaluating Emotional Shifts in People with Post-traumatic Stress Receiving Art Therapy

Vicente Estrada Gonzalez*, Vasiliki Meletaki, Melissa Walker, Janell Payano Sosa, Adrienne Stamper, Rujirutana Srikanchana, Juliet King, Kayleigh Scott, Eileen R. Cardillo, Alexander P. Christensen, Kohinoor M. Darda, Cliff I. Workman, Chandler Sours Rhodes, and Anjan Chatterjee.
*Penn Center for Neuroaesthetics, University of Pennsylvania, Philadelphia, US

Art therapy can be beneficial in treating Post-Traumatic Stress Symptoms (PTSS), yet the nature of emotional regulation with this intervention requires further investigation. Here, we tested the hypothesis that art serves as a vehicle for emotional expression in people with PTSS and that these emotions can be inferred by others. If art therapy helps people with PTSS, changes in their emotional expression afforded by non-verbal creative processes should be evident.

The National Intrepid Center of Excellence (NICoE) has an intensive outpatient art therapy program for active-duty service members diagnosed with PTSS. During the initial and final sessions, five service members were provided with a blank paper-mache mask template and instructed to fashion the mask using paint and other art materials. During other sessions, the patients' therapeutic encounters also involved different art practices, such as drawing and painting.

We predicted that masks from the final stage would reflect salutary effects of therapy compared to those from the initial stage. 240 blinded viewers assessed the aesthetic impacts (Christensen, Cardillo, and Chatterjee, 2023) of the 10 masks created by the NICoE's patients. Results confirmed our prediction in that masks from the final stage were perceived as embodying greater calmness, pleasure and beauty, whereas initial masks were rated significantly higher for anger, challenge and upset.

A secondary aim of our study was to explore if individuals' subjective assessments of the masks were affected by being asked to explicitly consider the emotional state of the artist when creating masks (i.e., perspective-taking). We found that, when considering the maker's perspective, viewers experienced more enlightenment, interest, and inspiration.

This study shows that art can serve as an emotional outlet for patients with PTSS and can index response to therapy.

#14

An Empirical Approach to the Perception of Islamic Material Culture

Bahar Akgün Ergeçen.
PhD Candidate, Faculty of Philosophy, University of Heidelberg, Heidelberg, Germany

Today, driven perhaps by the growing recognition of the disciplinary limitations of modern, secular, and European art history, a renewed scholarly discourse interrogating the "arts of Islam" is emerging. Subjects such as gaze, beauty, aesthetic experience, and sensory history are now found to be of growing relevance in the scholarship of Islamic visual cultures. As this network of research develops, valuable insights into the aesthetic principles shaping the production and reception of Islamic material culture emerge. In parallel, the new frontiers of empirical aesthetics provide us with tools to explore this burgeoning knowledge, particularly concerning the gaze and aesthetic experience. This paper presents an eye-tracking study designed, conducted, and analyzed to empirically explore these emerging perspectives and push the research further. The study was carried out at the Laboratory for Cognitive Research in the History of Art (CReA) at the University of Vienna as a preliminary work for a doctoral research project. This study investigated the perception of a two-dimensional drawing representing a geometric pattern from the 13th-century Anatolian Tokat Mahperi Hatun Caravanserai. Five healthy subjects, comprising undergraduate and graduate architecture students, were asked to look at the drawing displayed on the computer screen and then draw what they saw on paper. An eye-tracking device recorded participants' eye movements while viewing the screen. The process of looking and drawing was repeated eight times, with gradually increasing presentation and drawing times. The subsequent analysis is being carried out as part of an ongoing doctoral research project at the University of Heidelberg. The analysis involves two sequential steps: 1) calculating eye-tracking metrics and 2) quantifying performance in drawings. Utilizing eye movements and sketching as tools to engage with imagery, our aim is to identify a distinct conceptualization of mental images inherent to the representational depictions in Islamic material culture.

#15
The effect of emotion on image beauty depends on accompanying text
Anna Bruns*, Aleksandra Igdalova, and Denis G. Pelli.
*Department of Psychology, New York University, New York City, USA

Past research shows that emotion affects the beauty of images. Does text accompanying the image modulate this effect? Participants viewed a mood induction video followed by the PANAS mood questionnaire and two trial blocks, each containing 6 paintings and 6 nature photographs. In the control block, images had no accompanying text. In the experimental block, images were accompanied by one of the following: redundant descriptions of the images, curatorial interpretations of the images, or descriptions of the artists. Participants rated each image in terms of beauty, liking, perceived happiness, perceived sadness, and sense of engagement with the image and the text. We used linear mixed-effects models to analyze the effects of object and subject happiness and sadness on the beauty and liking ratings of the images. Pilot results presented at ECVP 2023 (N = 78) indicate that emotion affects image beauty twice as much with accompanying text as without, but only if the text is merely descriptive. In the no-text condition, object happiness, object sadness, and subject happiness predict increases in image beauty (β = 0.7, 0.2, 0.5). In the image-description condition, object happiness and sadness and subject happiness and sadness predict larger increases in image beauty (β = 1.2, 0.7, 1.2, 1.2). In the conditions with text that went beyond image contents, however, only object happiness had a significant effect on image beauty (β = 0.7). In this pilot, we find that emotion affects image beauty more when images are accompanied by text that describes the image. We expect similar findings from the final study we will present at IAEA 2024, which will use more museum-like captions than the pilot did.

We anticipate that captions that focus on image qualities increase emotional engagement with the image, while captions less related to the image reduce it.

#16
Dynamic complexity in audiovisual aesthetics

Ana Clemente*, Frances Board, Marcus T. Pearce, and Guido Orgs.
*Department of Cognitive Neuropsychology, Max Plank Institute for Empirical Aesthetics, Frankfurt, Germany

The appreciation of dance, film and other temporal art forms relies on the continuous integration of auditory and visual streams. In this study, we investigate how bimodal audiovisual preferences arise from unimodal auditory and visual preferences. To this end, we created and validated the open-resource Complexity in AudioVisual Aesthetics (CAVA) stimulus set (https://osf.io/e5uh9/), consisting of 120 short, dynamic and abstract auditory, visual and audiovisual stimuli in which auditory and visual complexity corresponds to the number and variety of elements. The visual component was inspired by the work of Norman McLaren (e.g., Lignes Verticales). In Experiment 1, 87 participants rated liking and perceived complexity for each stimulus, with visual, auditory and audiovisual blocks fully randomised. In Experiment 2, 53 participants rated how much they liked each stimulus with the audiovisual block presented first to avoid potential bias arising from prior experience of unimodal stimuli and any confounding effect of the simultaneous complexity judgements made in Experiment 1. Structural equation modelling and linear mixed-effects analysis show that liking for audiovisual stimuli can be explained by a weighted sum of liking for their auditory and visual components modulated by audiovisual congruence. Audiovisual preferences exhibit inverted-U-shaped relationships with auditory and visual complexity, the latter mediated by perceived complexity and modulated by congruence. Our findings provide a carefully controlled departure point for better understanding the role of prediction of sequential structure for the experience of dynamic audiovisual art forms such as dance or film.

#17
Bad Beauty: Aesthetic Judgments are Influenced by the Salience of Morally Contentious Content in Photographs

Selina M. Weiler*, Christian Duer, and Thomas Jacobsen.
*Experimental Psychology Unit, Helmut Schmidt University / University of the Federal Armed

This study examined the impact of moral salience in aesthetic entities on subjective beauty appreciation. Research suggests that affect influences evaluative judgments. We hypothesized that this holds true for aesthetic appreciation, and that modulating the affective response to a visual stimulus would modulate its subjective beauty. Utilizing an online experimental design with 460 participants, we collected beauty ratings for 25 photographs representing environmental degradation, juxtaposed with Neutral and Negative descriptive texts. The Neutral texts offered basic information, while the Negative texts highlighted the detrimental effects of pollution. Our investigation also considered the mediating role of affective changes and the effect of participants´ biospheric values on beauty ratings. The results indicated that photographs paired with Negative texts were deemed less beautiful, a phenomenon partly explained by a rise in negative affect. Furthermore, those with pronounced environmental values were more likely to rate the images as less beautiful in the Negative context. These results indicate that affect elicited by an aesthetic entity directly influences its subjective

beauty, a finding that is consistent with current theoretical assumptions but has not been tested empirically. In conclusion, our study shows that beauty is not only a product of physical stimulus features, but also affective responses and individual values. We acknowledge certain limitations and propose avenues for future research.

#18

Dynamics of Aesthetic Experience: Investigating the Impact of Diverse Artwork Complexity on Visitor Engagement through Behavioral Analysis in Gallery Environments

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Aesthetic experiences in gallery and museum settings are influenced by the interconnectedness of artworks; yet, existing research on visual complexity predominantly assesses stimuli in isolation, leaving out the effects of the natural gallery context and the relationship between artworks. In the present study we address the gap by investigating visitor engagement with artworks of varying complexity levels within a gallery environment by randomly placing anomalous artworks, either simple or complex, among predominantly simple or complex artworks to understand how visitors' preferences for visual complexity are influenced. Visitor movement within the gallery seems to reflect their aesthetic experiences. Analyzing shared movement patterns and collective behaviors could serve as a valuable method to understand how artworks of different complexity levels influence visitors preferences. We intend to examine behavioral data, including viewing time, direction, and movement patterns, to uncover the dynamics of aesthetic engagement to understand how visitors interact with artworks of different complexity levels, and determine whether behavioral data can explain the relationship between aesthetic appreciation and stimuli complexity. We utilize real artworks to replicate a genuine museum experience by selecting abstract paintings from a publicly available dataset. Subjective evaluations and quantitative metrics are used to facilitate the categorization of visual complexity. The Open Gallery for Arts Research (OGAR) tool is used to create a controlled yet ecologically valid study environment (Rodriguez Boerwinkle et al., 2023). A two-room gallery layout featuring artworks with varying complexity levels, including anomalous pieces will be randomly placed to mitigate order effects. Through the empirical investigation of behavioral data, we aim to uncover patterns in perceived visual complexity and address how aesthetic appreciation relates to stimuli complexity levels when artworks with varying complexities are experienced together. Contributing to understanding aesthetic experiences in gallery environments, offering insights into the relationship between visual complexity, visitor engagement, and visitors' movement behaviors.

#19

A Comparative Analysis of Visitor Experiences in Virtual and Physical Art Galleries

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Are visits to virtual and physical art galleries the same? Although virtual art galleries have become widespread as independent digital spaces and online extensions to traditional museums, little is known about whether visitor experiences and behaviors in these spaces reflect those seen during visits to brick-and-mortar spaces. The present work, therefore, seeks

to present behavioral comparisons between equivalent virtual and physical gallery spaces. 240 adults visited either an in-lab, mock "gallery" space, curated with 8 original artworks from professional artists, or an equivalent virtual gallery space with the same dimensions and curated artworks, created using the Open Gallery for Arts Research. Survey data about participant art knowledge and interest and aesthetic experience during their visit, as well as movement and gaze data from the visit, were collected for participants in both conditions. Behavioral comparisons of each space, as well as implications for virtual and field-based studies of art and aesthetics are discussed.

#20
Art of Attention: Field Research on 'Slow Looking' with Contemporary Art
Worley Taylor* and Nathaniel Thom.
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We conducted field research on 'slow looking' with contemporary at the Art Institute of Chicago during the summer and fall of 2023. Our aim was to explore the psycho-physiological nature of participants' engagement with works of conceptual art by measuring heart rate variability and emotional self-reports. While only a pilot study in scope, the project collected data from two groups consisting of non-experts and experts (as assessed by aesthetic fluency and education/training) tasked with 'slow looking' prompts for a selection of museum artworks.

The study is based on the experience of "visual dissonance" associated with challenging examples like conceptual art. If conceptual art, therefore, disrupts typical patterns of cognition to encourage the viewer to a deeper participation with aspects of the work, then a potential neurobiological consequence could be the disruption of cognitive homeostasis. Cognitive homeostasis is the idea that nervous system function can be modeled on the simple and elegant principle of homeostasis. This model proposes that the nervous system is composed of nested hierarchical homeostatic systems that function to produce human behavior at all levels, from simple food-seeking behavior, to complex decision-making, to very high-level thinking about death and the good life.

Thus, we hypothesized that viewing conceptual art will disrupt homeostasis powerfully enough to alter HRV in a measureable way and that non-experts and experts will progress through each cognitive stage differently and therefore present with a differential HRV profile. Our poster will review the experimental design and results of this initial pilot study.

#21
Influence of Semantic Context on Contemporary Art Evaluations and Valuations
Alexandra (Ava) Alvarez* and Stacey Humphries.
*Psychology Department, Goldsmiths University of London, London, United Kingdom

This study investigated the interaction between semantic context and aesthetic evaluations with a contemporary art world dimension of artwork collector valuation. In addition to aesthetic ratings, participants were asked to rate five artworks' appropriateness for a museum/gallery, home / office, as well as social impact and personal collecting value. We wanted to see how engagement with semantic context of either about the artist, style and technique, none, or both, as a measure of time, influenced judgements. Modeling components of Darda et al. 2022, we were interested in exploring Art Experience Questionnaire (Chatterjee et al. 2010) as an influential factor. We explored what factors might make a contemporary art collector and gave participants the opportunity to collect one of the stimuli at the end of the experiment by downloading the image of the work to their device. The significant findings of

this study are that context mattered for the abstract artwork stimulus and explained the variance in ratings pre and post semantic context condition. Specifically, engagement with 'About the Artist' and 'Both' increased aesthetic evaluations. Those with expert Art Experience scores engaged the most with semantic context and those with naïve Art Experience scores engaged the least.

#22
Take It Slowly: Assessing the Aesthetic Impact of Slow Looking on Engagement with Art.
Nora (Junga) Youn*, Vicente Estrada Gonzalez, Eileen Cardillo, and Anjan Chatterjee.
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Museum visitors on average spend less than 30 seconds facing art pieces they choose to look at in art museums, which includes the time reading the accompanying label (Smith and Smith 2001) (Smith et al. 2017). This finding in part inspired the "Slow Art" movement amongst museum curators, where they encourage visitors to spend several minutes with each art piece and discuss their experiences with the aim of developing visual literacy (Housen 2002). Despite the growing popularity of slow art, only two experimental studies measured the psychological effects of slow art (Igdalova and Chamberlain 2022) (Cotter et al. 2022). Neither study had a control condition. We tested the hypothesis that guided slow-looking in a museum enhances the impact of engaging with art. Participants interacted with half the artworks as they naturally would and with the second half through a slow-looking guided exercise. The artworks were counterbalanced across conditions. We instructed participants to engage with the artwork for 15 minutes by reflecting on the sensory-motor, meaning, and emotion aspects (Chatterjee and Vartanian 2014) of the object. Compared to unstructured encounters with art, we predicted that slow-looking would intensify the impact of museum artifacts, increase ratings on all 11 aesthetic impact dimensions—angry, calm, challenged, compassionate, edified, enlightened, enraptured, inspired, interested, pleasure, and upset (Christensen et al. 2023)—and increase ratings of beauty and liking.
Preliminary analyses suggest that slow-looking enhanced viewers' art experiences. In particular, the aesthetic ratings of beauty were positively influenced by slow-looking. People also felt more edified, interested, and calm when engaging with art under slow-looking conditions.

#23
The impact of stereotypes and narrative description on listeners' emotional responses to unfamiliar sad music
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The aim of this ongoing study is to investigate the impact of stereotypes of unfamiliar musical cultures and extramusical information on the induction of musical emotions. The communication of emotions via music can be affected by cultural stereotyping (Susino & Schubert, 2019). As internal imitation of the perceived emotions, which is referred to by Juslin and Västfjäll (2008) as emotional contagion, is one of the underlying mechanisms of the induction of musical emotions. It is also suggested that narrative description as extramusical information can influence induced emotions (Vuoskoski & Eerola, 2015), possibly via another mechanism – visual imagery – also suggested by Juslin and Västfjäll (2008).

In the first phase of this study, participants who are not familiar with and have no stereotypes over the emotional communication of traditional Chinese instrumental music (particularly erhu music) will be separated into four groups. One of the groups will act as a control group with no listening tasks, the other three groups will be assigned to different listening conditions (erhu music expressing positive emotions only, erhu music expressing negative emotions only, a mixture of erhu music expressing either positive or negative emotions). In phase two, all participants (including the ones who are familiar with traditional Chinese instrumental music), will first be asked to complete a new questionnaire to report the stereotypes of erhu music that they already have or have generated from Phase 1. They will then be assigned to three conditions of extramusical information (no description, neutral and negative narrative descriptions) and asked to report their real-time emotional responses to a piece of sad erhu music while their psycho-physiological responses are recorded spontaneously using the Continuous Response Measurement Apparatus (Himonides, 2011; Himonides & Welch, 2005). Data processing, analysis and visualisation will be conducted based on the framework which was initially established in Ma (2023).

#24
Direct comparison of sliders versus forced-choice response formats in music perception research

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To examine people's aesthetic experiences and more generally investigate human perception, one can employ dichotomous (forced choice) or continuous (e.g., slider) response formats. Each format has its own pros and cons, and it is unclear whether they lead to similar results. Research in different domains (e.g., vision and social psychology) report contradictory findings. Here, we focus on the role of response format when examining how people perceive sounds as music or not. Recently, Larrouy-Maestri and Wald-Fuhrmann (preregistered, 2022, [https://osf.io/sb24q]) asked participants to evaluate 90 auditory stimuli (5-second excerpts selected from a large range of sounds) using a binary forced-choice question. Their results revealed three distinct clusters of stimuli: sounds perceived as "music", "not-music", and "ambiguous" (i.e., considered music by some participants and not by others). In the present experiment, 100 participants evaluated the exact same excerpts using a slider ranging from 0 (not-music) to 100 (music). A mixed effects model predicting the slider rating from the groups defined in the reference experiment (i.e., music, not-music, and ambiguous) explained 76% of the variance in the data. Also, a cluster analysis based on the averaged music ratings across participants confirmed the presence of three similar groups of stimuli. Both results support that the two response formats (forced choice and slider) converge; however, they might not be interchangeable. Participants tended to label stimuli as music more frequently when using forced-choice responses, compared to sliders, in line with the "positive" answer bias observed elsewhere. Altogether, this study highlights that, within the realm of music perception research, the response format (slider vs. forced question in this case) might not have a drastic influence on the main findings but should be considered carefully according to the research question.

#25
Exploring Social Beliefs and Aesthetic Influence on Vaccination Intentions in Indonesia: A Quasi-Experimental Study

Mirza Muchammad Iqbal*, Christoph Scheepers, and James Bartlett.

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Indonesia has been facing vaccination refusal for years, yet limited research explores local social factors, such as cultural and religious reasons, associated with this issue and how to effectively promote vaccination programs. This study aims to investigate some common particular social factors in Indonesia and study the aesthetic cognitivism on the visual stimuli on shaping towards vaccination in Indonesia.

Comprising two experiments, the first study has concluded, while the second experiment is ongoing. Participants of this study are members of individuals socially or emotionally affiliated with two most rival religious group in Indonesia. In the initial study, we examined the influence of conspiracy belief, fatalism belief, and ingroup-outgroup effects on vaccine hesitancy. The study used experimental design by providing stimuli consisting of hypothetical information to test whether their intention is influence by their group reference behaviour. However, only conspiracy belief has a strong relationship to vaccination intention ($\beta = .14$, $p < .001$; CI = [.09 - .20]) and we find no significant relationship on 2x2 ANOVA analysis of religious ingroup-outgroup effects.

This suggests that non-visual stimuli might be inadequate to significantly impact individual's decision, especially among populations where religious and political beliefs play a substantial role in decision-making. Therefore, this study is eager to manipulate their social identity beliefs on vaccination intention using quasi-experimental study. We plan to utilise visually manipulated stimuli, such as vaccine invitation poster depicted particular social group's logo or identical colour. Our objectives are to ascertain how these aesthetic features, namely group-related visual symbols and colours, impact vaccination intentions and how familiarity influence their perceptions. This study will also use eye-tracking methods with Neon by Pupil Labs to investigate eye movements during experimental task.

#26
How do we best combat prejudice and discrimination with the arts: Introducing a decolonial, collaborative and transdisciplinary approach to empirical aesthetics
Srestha Chakraborty*, Matthew Pelowski, Corinna Kühnapfel, and MacKenzie Trupp.
*Department of Cognition, Emotion, and Methods in Psychology, Faculty of Psychology, University of Vienna, Vienna, Austria

The application of the arts as a catalyst for changing attitudes and behaviours towards contemporary societal challenges, particularly in the context of migration, has gained substantial focus and resources in recent years. This spans not only across multilateral socioeconomic policymaking and federal institutions but also extends to empirical aesthetics and cognitive psychology. However, due to lack of empirical evidence of its efficacy, and ethical issues involving agency and 'researcher–target-group' relationships, this remains a largely unexplored and procedurally fraught area for collaborative, transdisciplinary research. In this presentation, using empirical data from a study investigating the socially transformative power of a public art exhibition in bridging diverse communities, I expand on the potential ethical pitfalls that need to be overcome in research involving marginalised stakeholders from migrant backgrounds. The study assessed whether changing the language of an open, street-level exhibition in Berlin to Turkish (from their existing signs in German and English) made this exhibition more accessible to target migrant populations, and made them feel more 'connected to,' and 'satisfied with' their neighbourhood. Preliminary analyses of the language intervention, however, showed no effects. More importantly, the intervention itself, and the assumptions underlying the researchers' aims to 'overcome barriers' and

increase accessibility 'for' a target group, provided a key insight into critical questions of agency, accountability, and representation.

I discuss this example, and propose a decolonial research framework that: (i) encourages active, intentional collaborations with marginalised stakeholders instead of them being passive test subjects, (ii) gives them more agency in sensitive matters that directly affect them at individual, systemic levels, (iii) is sensitised to the intersectional nuances of discrimination, and (iv) puts more accountability on those who discriminate rather than those who are being discriminated against.

#27
The role of the "learning emotions" in art appreciation
Aleksanddra Sherman* and Clair Morrissey.
*Occidental College

According to the theory of aesthetic cognitivism, we can gain knowledge through arts engagement. This theory fits well with individuals' self-reports that testify they have been changed by a visual artwork, or that they have learned something important about themselves or about the world from reading a novel. However, what exactly these claims mean, and what mechanisms may explain this learning, is contested by both psychologists and philosophers and is a burgeoning area of research in both fields. We begin by providing a conceptual map of the questions about learning from arts engagement distinguishing gaining propositional knowledge, from cognitive skill development, and from deepening understanding. There is a great deal of philosophical discussion of whether and how the arts contribute to individuals' gaining propositional knowledge, and also significant empirical research that points to people developing a set of perceptual and cognitive skills as a result of art engagement, including honing attentional skills, expanding imaginative capacities, and enhancing theory of mind. Less clear, both empirically and philosophically, is what "deepening understanding" means and how it differs from these other kinds of knowledge acquisition. We argue that a promising way to explain a key element of 'understanding' is as having experienced one of what some psychologists call the "learning emotions" (e.g., wonder, awe, interest, curiosity, confusion). Although there is research in both empirical and philosophical aesthetics related to the experience of these emotions during art engagement, it has not been systematically marshaled in this way and the intersection remains underexplored. For instance, how the experience of awe or wonder in the context of visual art explicitly affects interpretive strategies, understanding, or perspective shifts is understudied. We conclude by building on work from Besser and Oishi on the importance of experiencing these learning emotions for living a psychologically rich, meaningful, and whole life.

#28
Sign and Presence
Andrea Carraro* and Gerald C. Cupchik.
*CarraroLab, Palazzolo sull'Oglio, Italy

With the advent of virtual reality and artificial intelligence, two fundamental elements of human work need to be reevaluated: sign and presence.

These two elements are the subject of reflections developed with Gerald C. Cupchik, and the following proposal was written under his direct invitation.

""Sign"" is a concept to be understood in relation to that of drawing (in Italian ""disegno""). While pursuing my first degree, in fine arts, I was able to reflect on the difference between designing a stylistic structure (style), and the artistic cipher emerging during the process of

creation (sign). The latter occurs irreflexively, and can be associated with handwriting in writing: regardless of content, the form of words is an index of recognizability for those who wrote them (Ingold, 2013). The sign is to be understood as the primary connection between art and human consciousness, not merely images, but communications: ""I was here."" (Hoel 2022). This index of presence, as a sign of the passage of another human, animal or thing, is lost in the generative processes of AI.

The concept of ""presence"" has experienced renewed scholarly interest since the arrival of virtual reality in our daily lives. Unlike involvement, which is related to content, presence is a formal matter (Slater, Mel, 2003). A reader may be engaged by the content of a book but not feel present; a subject may decide to adopt a willing suspension of disbelief (S.T. Coleridge, 1817) in order to feel present in a virtual reality program. Presence then becomes a malleable, debatable and maneuverable state of being.

If, as Eugenio Barba once told me, ""art is the superfluous that helps man to imagine."" the ""sign"" would be that superfluous that helps man to feel present in the world, a creative presence challenged by new technologies.

#29

Portraying the best side? An analysis of Rembrandt's paintings and etchings
Sophia Diaz* and Marco Bertamini.
*Department of General Psychology, University of Padua, Padua, Italy

According to a comprehensive survey of 1474 portraits painted in Western Europe, artists have predominantly painted posers with their left-cheek facing the viewer (McManus & Humphrey, 1973). This effect is stronger in females: 68% of females presented their left cheek, compared to 56% of males. The opposite pattern in self-portraits may be explained by the use of a mirror (Bruno et al., 2017). This phenomenon could be explained by the affective hemispheric laterality, and the consequent emotional expression, combined with gender biases with respect to portraying emotions. This pattern has been studied by measuring and categorising the orientation of the represented faces in five groups (left, slight left, frontal, slight right, right) in a single prolific artist: Rembrandt (Leiden, 1606 - Amsterdam, 1669). He made explicit choices to represent males and females differently, and, at least in part, the technique (paintings vs. etchings) may have influenced the resulting pattern. In fact, in Rembrandt's paintings, the gender difference is particularly strong (Powell & Schirillo, 2009). The majority of males present their right-cheek (183/125 for males and 51/108 for females, for a total of 546 paintings). This pattern is present even when the analysis is restricted to one-person portraits (158/103 for males and 31/98 for females, for a total of 468 portraits), and also within the large set of self-portraits (N = 64, with 49 right-cheeked self-portraits and only 9 left-cheeked). Since the previous reference literature only focused on paintings, we also explored Rembrandt's complete production of etchings (N = 146 portraits) which are mirror-reversed, compared to paintings due to the printing process, to furtherly comprehend the nature of such representational choices. The gender asymmetry was reduced, possibly because of the process of printing, and in the case of self-portraits (N = 24) the bias was reversed.

Thursday, May 09, 2024

Poster Session 2

#1
Look where you're going!: Elongated shapes are preferred when they update their orientation to remain aligned with their heading
Hong B. Nguyen* and Benjamin van Buren.
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Imagine watching your pet goldfish swimming around in its fishbowl. You notice that your fish is not facing exactly where it is moving, but rather slightly to the left of its global direction of movement. This might justify concern for the fish — for example, it could indicate an injured pectoral fin. More selfishly, your visual system might have trouble making sense of why the fish is moving in one direction but facing in another, and this disfluent processing might produce in you a feeling of displeasure. In four experiments, we demonstrate that observers strongly prefer seeing elongated shapes whose orientation aligns with their heading as they move. In Experiments 1a and 1b, we tested whether observers have an explicit preference for heading alignment, by asking them to toggle between two displays, and to select the one which they preferred. Both displays featured a moving oval which randomly updated its heading: in one display, the oval updated its orientation to stay aligned with its heading, and in the other display, the oval updated its orientation to stay 45° offset from its heading. In both the original experiment and the direct replication, most observers preferred displays with heading alignment. How automatic is this preference? In Experiments 2a and 2b, participants completed an Implicit Association Test. In one block, they pressed one key for heading-aligned shapes and for 'positive' words and another key for heading-offset shapes and for 'negative' words; in another block, the key mappings were reversed. Participants responded faster in the block in which they used the same key to respond to both heading-aligned shapes and 'positive' words, indicating an implicit preference for heading alignment. In conclusion, consistent with other work demonstrating preferences for visual symmetry, elongated shapes are preferred when they update their orientation to remain aligned with their heading.

#2
Does Inclusive Design sacrifice aesthetics and pleasantness in design approaches?
Sophia Diaz* and Michele Sinico.
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 Department of General Psychology, University of Padua, Padua, Italy

In a globalized and evolving society, it is crucial to aim towards sustainability for our planet and the people living in it. A socially sustainable society promotes inclusivity, using diversity as a resource and not as an obstacle, allowing to foster wellbeing and health in societies. Since inclusivity does not represent a merely social and humanitarian factor, the built-environmental professionals should engage into more responsible choices, focusing not only on physical accessibility but also promoting positive experiences to improve people's mental and physical wellness. Since the 1950s, the necessity to create more accessible spaces for people with permanent or temporary reduced mobility has spread, leading to a wider necessity of designing universally inclusive environments, to accommodate as many people as possible, regardless of their age, ability, etc. Many experts (e.g., architects, designers, etc.)

are still skeptical because of their negative expectations regarding inclusive approaches (e.g., aesthetic results, costs, etc.), which may be influenced by negative personal experiences, lack of knowledge or misconceptions. Therefore, it is pivotal to promote research, re-educate professionals and raise awareness on Design For All (DFA), for a healthier society with a higher Quality of Life (QoL), without abandoning a project's quality, pleasantness and aesthetics in design artifacts (in all of its guises: architectural, product, graphic, UX/UI etc.) Here, we aim to explore the history of DFA and the related design approaches, the 7 principles of DFA and its positive impact on our society.

#3

#4
A Closer Look: The Influence of Tattoos Perception on Viewing Time
Jan-Filip Tameling*, Selina M. Weiler, and Thomas Jacobsen.
*Experimental Psychology Unit, Helmut Schmidt University / University of the Federal Armed Forces, Hamburg, Germany

In a world where tattoos increasingly punctuate the human canvas, their impact on visual perception presents a unique and intriguing subject of study. This research delves into how tattoos, as distinct body alterations, influence the duration of viewer observation, integrating this inquiry with the broader understanding of viewing time effects in aesthetic evaluation. In this study, 130 participants were asked to rate the aesthetics of images of 7 humans. The images were manipulated to present variations in the presence of tattoos (with and without). Participants' viewing times were tracked in milliseconds, providing a measure of engagement with each image. This approach allowed for an analysis of the interplay between aesthetic ratings, the presence of tattoos, and viewing time, utilizing linear mixed-effects models. Challenging assumptions that link longer viewing times with higher aesthetic appreciation, our findings showed no significant correlation between the presence of tattoos, aesthetic ratings, and duration of viewing. This suggests a more intricate relationship between aesthetic judgment and viewer engagement, here in the context of tattoos. The study offers insights into the perception of tattoos, emphasizing the complexity of factors that influence viewing behavior beyond traditional aesthetic evaluations. These results contribute to the broader discourse about visual cognition and underscore the need for further research into the multifaceted, diverse aspects of aesthetic experience, particularly in relation to body alteration, here tattoos.

#5
Body Alteration: On the Mental Function of Body Modification and Body Decoration
Selina M. Weiler*, Cordelia Mühlenbeck, and Thomas Jacobsen.
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The human inclination towards bodily decorations and (semi-)permanent modifications represents a deeply rooted cultural phenomenon, characterized by significant investment of time and resources. This article endeavors to review the mental function associated with body-altering behavior. In alignment with established guidelines for reviews, we synthesized the literature, encompassing several categories of body-altering entities across various eras. We argue that individuals engaging in body-altering behavior are principally driven by two intertwined mental functions: aesthetics and group affiliation (dynamics), including the latter's subfunctions of supporting individuality, resistance, personal narrative, physical

endurance, and sexual motivation. Our review of literature suggests that aesthetic motivation is a more significant mental function than group affiliation in influencing body-altering behaviors. This conclusion is underpinned by a thorough exploration and synthesis of supporting evidence within the manuscript.

#6
Naturally beautiful: Aesthetic appreciation, cognitive and creative abilities and affect in nature inspired versus control real and virtual environments

Vasiliki Meletaki[1], Jeffrey Vadala[2], Isabella Bobrow[1], Adam Weinberger[3], Kohinoor Monish Darda[4], Vicente Estrada Gonzalez[1], Mar Llorens Gamez, William Sturgeon, Isabelle Lee[1], Olivia Kim, Anjan Chatterjee[1].

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Multisensory biophilic (nature inspired) elements in interior design is reportedly linked with cognitive, physiological, and emotional benefits. However, we have limited experimental evidence for these potential benefits of biophilic design. We tested the hypothesis that biophilic design enhances aesthetic appreciation, cognition and affect. In the first study 50 participants completed a series of tasks in a standard lab testing room (white walls, desk, and a chair) and 50 participants in a biophilic room with living plants, a moss wall, and other handcrafted natural elements. We predicted that participants in the biophilic condition would show higher aesthetic appreciation for the design of the space, score higher in cognitive and creativity assessments, and show higher positive affect and lower negative affect. Our preliminary results confirmed our prediction for greater aesthetic appreciation, but no significant differences were found in the remaining tasks. The second study replicated the first one in virtual reality. The aim of the study was two-fold: firstly, to understand better the potential effects of biophilic design and secondly, the study was a proof of concept of a mapping onto real world results. Our preliminary analyses confirm the replication of the first study with higher aesthetic appreciation for the virtual biophilic room, but no differences in other tasks. Our studies expose limits on widely cited benefits of biophilic design and support the use of virtual reality in experimental settings to investigate architecture and design.

#7
How stable are taste-shape crossmodal correspondences over time?

Carlos Velasco*, Farhana Tabassum, Erick G. Chuquichambi, Charles Spence, and Enric Munar.
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People non-randomly associate tastes and visual shapes. The present research investigates the stability of taste-shape crossmodal correspondences over time, exploring the temporal dimension of crossmodal interactions. While previous research has established the existence of taste-shape crossmodal correspondences, this study addresses their consistency through a test-retest paradigm. Drawing parallels with the concept of synaesthesia, in which stability is used as a criterion, the research focuses on taste-shape associations, a domain not previously explored for temporal stability. Participants rated the perceived curvature and symmetry that they associated with taste words (sweet, umami, sour, salty, and bitter) and their liking of tastes and shapes. The same participants performed this task three times conducted over a

two-week period. The results consistently replicated previous findings, revealing that sweet tastes were perceived as significantly more curved and symmetrical than other tastes, and umami was rated as more curved and symmetrical than the sour, salty, and bitter tastes. Notably, the study found moderate-to-substantial test-retest reliability for the majority of the taste-shape correspondences, indicating robust stability over time. Analyses suggested that differences in assessments between test and retest sessions were primarily due to random error, with no systematic biases. However, a small subset of participants showed significant differences in their associations, particularly for umami-related correspondences. This research contributes to our understanding of taste-shape correspondences by demonstrating their temporal stability, offering insights into the dynamics of taste, curvature, symmetry, and liking. We posit that consistency might be used as a criterion supporting the existence of a given crossmodal correspondence. The findings have implications for product design and marketing, emphasizing the importance of considering temporal aspects when capitalizing on crossmodal correspondences in the creation of product expectations and experiences.

#8
Dance, Jog, Balance: Preferences for Movers Vary By Type, Age, and Skill
Jonna Kwiatkowski* and Kristen Moritz.
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This project was focused on the unique qualities of dance as a form of movement that might elicit attraction or preference beyond other forms of movement such as jogging or simply standing still. Evolutionary biology is a source for research on dance in sexual selection by non-human animals (e.g., Schlinger, Schultz, and Hertel, 2001), but much less has been done with humans (e.g., Roder, et al., 2016). To evaluate attraction to movement, 18 models were recruited: nine were 18-22 years old and nine were 40-47 years old, all were within the normal range for body mass index. All models wore snug clothing while dancing, jogging, and balancing on one foot, all behind a backlit screen. The resulting silhouette reduced phenotypic qualities that might influence ratings. Recordings of the silhouettes became the stimuli. In total, 48 participants viewed 56 recordings, each 15 seconds in length, and answered questions for each: 1) How physically attractive did you find the person in this video clip; 2) How attractive did you find the movement of the person in this video clip; 3) Is this person a good dancer/balancer/runner; 4) In a hypothetical situation, how likely is it that you would ask this person on a date? Results were that dancing was the preferred form of movement overall, even when the rater recognized that the dance skill level was low. There was also a secondary effect of age of the performer. Balancing was the most attractive movement of the 40-47 year olds while dancing was most attractive movement of the 18-22 year olds. This project shows that dance movement enhances physical attractiveness beyond simple analysis of features. This poster will share these results along with more details about the interaction between age and skill level.

#9
Strengthened connection between neural correlates of metacognition and dance in dancers: Exploring creativity implications
Ching-Ju Yang*, Hsin-Yen Yu, Tzu-Yi Hong, Li-Kai Cheng, Wei-Chi Li, Tzu-Chen Yeh, Li-Fen Chen, and Jen-Chuen Hsieh.
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Dance education fosters embodied metacognition, enhancing student's creativity. This study examines the crucial role of functional connectivity (FC) between the neural correlates of metacognition (NCM) and dance (NCD) as the neurological foundation for dancers' embodied metacognition. The investigation also explores whether these consolidated FCs inform the overall creativity in dancers. The research involved 29 dancers and 28 non-dancer controls. The study examined resting-state connections of the NCM through seed-based FC analysis. Correlation analyses were employed to investigate the connections between the targeted NCM-NCD FCs, initiated from the a priori NCM seed, and general creativity. Dancers demonstrated heightened FC between NCM and NCD compared to non-dancer controls. The targeted regions included the putamen, globus pallidus, posterior cerebellum, and anterior insula of NCD. The dancers exhibited higher originality scores. In dancers, the enhanced FC showed a negative correlation with originality and a positive correlation with flexibility. Conversely, the controls exhibited no significant correlations. Extended dance training enhances the connection between NCM and NCD. These interconnected networks may serve as the neural predisposition for fostering general creative flexibility in dancers. Dancers with heightened levels of originality could leverage the relatively weaker NCM-NCD FCs to facilitate better integration and coordination of creative cognitive processes that oscillate between mind-wandering and metacognitive awareness. Our study advocates that the consolidation of embodied metacognition network as shaped by domain-specific training can facilitate and enhance general creativity.

#10
Exploring the Impact of Physical Touch and Eye Contact on the Perception of Low Semantic Paired Movements
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The literature on dance observation has predominantly focused on the role of motor components in shaping aesthetic experiences. However, the influence of physical touch and eye contact between dancers on observers' aesthetic evaluations has been largely overlooked. This oversight is significant, given the crucial role of touch in dance styles like contact improvisation and the importance of eye contact as a non-verbal communication tool among dancers. To explore this area, we created and validated 48 short videos (8 seconds each), showcasing pairs of dancers performing simple, abstract movements with neutral facial expressions. For our study, 145 participants (Mean Age = 43.91 ± 14.21; Age Range = 19-80 years; Gender = 99 women, 46 men) were recruited via Prolific and completed the study in Gorilla. Participants, completed the GOLD-DSI questionnaire to evaluate their dance experiences and expertise. They were also asked to watch the 48 videos and rate each on a scale of 0 (Not at all) to 100 (Extremely) for the following aspects of the movements: 1) Enjoyment 2) Perceived difficulty 3) Emotional expressiveness and 4) Meaningfulness. Participants generally reported low median values in dance training and experiences (Body Awareness = 26, Social Dancing = 24, Urge to Dance = 22, Dance Training = 4, Observational Dance Experience = 22) relative to the maximum values of the scales. Preliminary analyses suggest that participants perceived movements that included eye contact and/or physical touch more emotionally expressive and meaningful compared to movements without these elements. However, eye contact seemed to have a greater influence than touch in these evaluations. We plan to employ Linear-Mixed Effects Models to further investigate

these effects following our pre-registered plans. The results of this study aim to broaden the way we perceive and evaluate dance, factoring in the nuanced, non-verbal communication aspects that enrich this art form.

#11
Body involvement in aesthetics: time coherence in action simulation influences human motion aesthetic preferences.
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The observation of human behavior and movements is an important component of human activity. In the perception, simulation, and prediction of these movements, we develop sensations of other people's bodies and of our own, which further shape the aesthetic experience of bodily movements. Previous researches exploring the perceptual features of body movements that influence the perceived attractiveness have focused on specialized art forms such as dances or specific types of movements such as walking styles. Action simulation is an internal real-time simulation of perceived body movement that can be used to track the continuity of an action during the period when the action is occluded or otherwise impaired. Our study manipulated the time coherence of action simulations using the occluder paradigm: point-light actions (PLA) were briefly occluded during presentation, and PLA presented again after occlusion were either a continuation of the previous action or an earlier or later phase of the action in the time course. We investigated the effect of time coherence of action simulation on aesthetic preferences for human motion through three experiments: complete action configuration (upright PLA), reversed action configuration (inverted PLA), and disrupted action configuration (disorganized PLA). It was found that for upright and inverted PLA, aesthetic ratings were lower in the time-later condition than in the time-matched and time-earlier conditions. For disorganized PLA, there was no significant difference between the three conditions. And for the reaction time of aesthetic ratings, all three experiments showed longer reaction times in the earlier time condition than in the other two conditions. These results suggested that there is spontaneous action simulation in individuals, and the time coherence with the simulated action influences the individual's aesthetic evaluation of the observed action. Furthermore, information about the action configuration is necessary for the generation of action simulation.

#12
Eaten beauty needs replenishing - the impact of beautiful plate patterns on plate waste
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This study explores the influence of food aesthetics on plate waste and the underlying mechanisms through which plate patterns can reduce food waste. Three studies were conducted to examine potential differences in beauty decrement (i.e., aesthetically vulnerable vs. aesthetically invulnerable) across various food categories and to evaluate the effectiveness of plate patterns in reducing food waste.
Study 1 revealed that certain foods were more susceptible to significant beauty decrement during consumption. Study 2 demonstrated that foods vulnerable to aesthetic degradation were more likely to be wasted than those that were aesthetically invulnerable. Additionally, among the aesthetically vulnerable foods, those with a perfect appearance were wasted more

frequently than those with an imperfect appearance. Study 3 (A) showed that aesthetically vulnerable foods were wasted less when served on patterned plates compared to blank plates. Study 3 (B) replicated the findings of Study 3 (A) by conducting an actual eating task in the laboratory and validating the Chain Mediation Model of the impact of plate patterns on food waste. Specifically, plate patterns influenced the reduction in perceived beauty during food consumption, which in turn affected consumers' enjoyment and ultimately resulted in plate waste.

#13

Rational Consideration or Hedonic Experience? The Driving Force Behind Attraction Preferences in Mate Selection Contexts

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In the mating context, what lies behind our pursuit of facial attractiveness? Is it the hedonic experience (aesthetic pleasure) brought by an attractive face, or the rational consideration of genetic advantages behind attractiveness? It can be further categorized into two aspects: one is the rational interest in beauty, and the other is the hedonic experience of beauty. Therefore, this study aims to explore whether the preference for highly attractive faces in mate selection scenarios is primarily driven by the rational interest in beauty or by the hedonic experience of beauty through three experiments.

Results of experiment 1 (N = 80) revealed that the aesthetic pleasure and the genetic quality score both could predict participants' willingness to establish long-term mate selection with the target. Experiment 2 explored whether people prioritize the rational interest in beauty or the hedonic experience of beauty in decision-making by constructing conflicting conditions of genetic quality and aesthetic pleasure (Cosmetic target vs Disfigured target). Results (N = 102) showed that even when participants believed that the disfigured target had higher genetic quality compared to the cosmetic target, they still chose the cosmetic target because it produced stronger aesthetic pleasure. Experiment 3 emphasized the genetic quality carried by each target through genetic reports. However, results (N = 80) still found that aesthetic pleasure was a better predictor of participants' long-term mate selection willingness than genetic quality.

In conclusion, this study reveals that the hedonic experience of facial beauty may be a more direct and powerful predictor of long-term mating willingness than genetic quality. The proximate and ultimate explanations in the evolutionary psychology perspective of beauty are also discussed in greater depth.

#14

Bullshit (sometimes) makes the art (slightly) more attractive: A field study in gallery-goers

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Vague, impressive language used in descriptions (bullshit) is thought to make art seem more profound and valuable to the viewer. We studied the effect during art exhibitions in real-life gallery-goers who saw paintings with three types of descriptions: simplified, neutral, and bullshitty. We crafted a typical description of each painting, which we later manipulated in terms of language. A simplified description was modified to be concrete and simplistic, while a bullshitty one, was very abstract and vague. After analysing over 1500 ratings, we found the descriptions had a negligible effect on the perceived quality and monetary value of art (R^2 marginal $\leq 1\%$). We conclude that, at least for experienced gallery-goers, the description accompanying a painting has little influence, and the art speaks for itself.

#15
Aesthetics in languages: what phonetic sound patterns reveal about aesthetic appeal

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Phonaesthetics, the aesthetic research of language, aims to contribute to a new understanding of how we perceive language. This project addresses a gap in the field and gathers insights of research in sound symbolism and aesthetics. In everyday conversations, non-linguists often focus on their perception of language(s), describing them as beautiful, romantic, and chaotic. Among linguists, however, studying the subjective perception of languages has long been viewed as unscientific, which is why little research about it has been done. However, linguistic aesthetic research sits at a crossroads of two contrasting theories: the Inherent Value and the Imposed Norm Hypothesis. The former strives to investigate which underlying features of a language influence its perception, whereas the latter shows that language does not come in a social vacuum. The present talk aims to shed light on the background of phonaesthetic research, showcasing new results of our most recent empirical study. These new results showcase the judgements of 204 participants of various cultural backgrounds on 24 European languages. The ratings were elicited using semantic differentials on beauty, eros, order, and status. The new analysis will focus mainly on the cross-linguistic phonetic patterns and the sound inventories of the languages, searching for the Inherent Value (language intrinsic properties) that can be derived from phonetic qualities.

#16
Characterizing the interrelations between order, complexity, and appreciation in multidimensional controlled stimulus spaces.

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Which visual displays do we aesthetically appreciate, and why? Order and complexity have often been suggested as important factors related to appreciation (Van Geert & Wagemans, 2020), but the multidimensional nature of both order and complexity has often been ignored. In a series of studies using diverse methods, we used the recently developed OCTA toolbox (Van Geert, Bossens, & Wagemans, 2023) to characterize the interrelations between multiple stimulus dimensions, perceived order and complexity, and aesthetic appreciation in multidimensional but parametrically controlled stimulus spaces. Using a 2AFC task, we investigated whether individuals' preferred complexity levels for color, shape, and size depended on the level of order present in the display. Results indicated that not all types of complexity were appreciated similarly, and that complexity was more often preferred in

highly ordered stimuli than in stimuli with a lower order level. In a rating task, we examined perceived order, complexity, pleasantness, and interest for a parametrically controlled set of 1611 stimuli varying systematically in various order and complexity dimensions. Results confirmed the differential relation of different types of appreciation to order and complexity, and clarified the extent to which different objective order and complexity manipulations influence perceived order and complexity. Using a recently developed efficient sampling method called Gibbs Sampling with People (GSP), we are now examining perceptual and aesthetic evaluations for multiple fine-grained, continuous parametric stimulus dimensions. The results of these GSP studies will allow us to characterize the interrelations between order, complexity, and appreciation as well as the consistency of these interrelations (a) across stimulus dimensions, (b) across parametrizations, and (c) across methodological techniques.

#17
Predictive coding as an approach to the empirical study of the arts?
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Predictive processing (PP) offers an intriguing approach to perception, attention, cognition, and appreciation of the arts. It does this by positing a theoretical basis—one might say a description similar to a 'metaphor'—for how we engage and respond, process mismatches rather than fluent overlap between expectations, schemata, and environment. Moreover, it holds the promise of translating metaphors into neurobiological processes. In late 2023, a special issue on " Art, aesthetics and predictive processing: theoretical and empirical perspectives" in Philosophical Transactions of the Royal Society B published a series of papers on PP and art. As part of this exciting topic, we discussed how the history of empirical or psychological aesthetics has been permeated by metaphors that have progressed our understanding but also tend to elude translation into concrete, mental, and neurophysiological operationalization. In our talk, we further reflect on PP with the aim of translating metaphorical explanations into well-defined mechanisms in future empirical studies of empirical aesthetics.

#18
Intonation and timing in singing early music is unrelated to respiration synchronization
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Historical depictions of ensemble performance from the medieval ages show singers in close vicinity with physical contact or embrace. In an earlier study (Lange et al., 2022), we showed that physical contact increased synchronization of the respiration signal. But what are the consequences of such synchronization for singing performance and, in turn, for art reception? In the current study, a professional singing ensemble of early music was recruited to sing pieces from Guillaume Dufay's "Missa ecce ancilla domini" and two motets from Josquin des Prez, that is, intricate four-part polyphony. Throughout, musical voices were sung by two singers in unison. The eight singers were positioned (a) in a semi-circle with standard distance between singers, or (b) close together with physical contact by putting the arm around the shoulder or waist of the neighbored singer, or (c) close together without body contact. Eight musical sections were repeatedly performed in the three standing configuration, adding up to 672 recorded audio files. We annotated a total of 64,215 tone events with exact onsets and f0 measurements using computer tools. We defined onset precision as mean of standard deviations of onsets within voice. Likewise, we defined pitch

accuracy as mean of the absolute pitch deviation within voice. Comparing configurations b and c, physical contact had no effect on timing nor intonation, t's <= 1.2, p >=.22. In addition, we applied linear mixed effect models to predict singing quality by respiration coupling, taking systematic variance of musical units and voices into account. Results were clear: Respiration coupling did not predict singing quality, contrary to initial expectations. The coupling of physiological processes while performing or listening to music has been interpreted as "the magic of music". However, in our study, this "magic" did not lead to improved singing performance. Implications will be discussed.

#19
Street Art and Spaces: A Reciprocal Influence between Mural Art and its Physical Context in Aesthetic Engagement

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Context plays a significant role in modulating the aesthetic experience. Past studies have shown that contextual information, particularly a physical space, can exert varying effects on the emotional impact, judgement, and motor behavior during aesthetic engagement. Most studies, however, are conducted in a laboratory setting and examine visual art in a gallery context. This study thus aims to look at the effect of two different contexts (low and high socio-economic status (SES) neighborhoods) in-situ on aesthetic engagement with murals. Further, this study also aims to look at the reciprocal effect of aesthetic engagement with murals on the perception of its context (the neighborhood). This latter aim has practical implications on the use of public artwork to promote community well-being. Results demonstrated that murals in the intended low SES neighborhood elicited higher ratings of beauty and liking and greater feelings of compassion and interest. However, greater liking of the overall low SES neighborhood suggests that other factors, such as its residential nature, dominated perceptions of context. Regardless, physical context modulated both aesthetic impact and judgement. The study also showed that perceptions of safety improved in the low SES neighborhood upon aesthetic engagement, which adds to recent literature on the importance of public art in urban spaces to individual well-being.

#20
Perceived Beauty and Complexity of Clustered Patterns

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Perceptual grouping has been considered a form of simplification in which the simplest outcome is the one that is usually perceived based on the Gestalt rule of Prägnanz (Wagemans et al., 2012). Some authors have also suggested that grouping may help to explain aesthetic appreciation (Spehar & van Tonder, 2017). In the first of two experiments undergraduate participants were shown a set of five black squares with increasing degrees of random dispersion (decreased clustering). They were then asked to judge the beauty and complexity of these patterns in a counterbalanced design. Regression analyses were performed with dispersion, GIF compression ratio and number of parts as predictive variables. All factors significantly predicted responses. Beauty increased linearly while complexity ratings increased faster in a positive curvilinear result. This two-fold classification was made by an examination of the dispersion of the residuals and by calculating the increase in variance accounted for with alternate regression models where the linear term was set as the null hypothesis (H0). Our main predictions were all confirmed. Visual patterns that are more

dispersed are considered more aesthetically pleasing and more complex as measured by all three metrics. The increased reaction to complexity compared to beauty suggests that the two may be mediated by different perceptual processes. Clustering can be confirmed as a simplification of visual inputs, one that is the basis for grouping and object formation. However the current results suggest it is also the basis of aesthetic judgment.

#21
Global Image Properties Predict the Beauty of (Realistic) Art Portraits but not the Attractiveness of the Depicted Person

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The style of art portraits has been altered significantly over time. While Baroque painters depicted the sitter highly realistically, Impressionist and Expressionist painters portrayed people in a less realistic way. Here, I investigated 192 art portraits from the three mentioned epochs (64 per epoch). First, the stimuli were analyzed regarding their global image properties (GIPs: Fourier slope, complexity, self-similarity, anisotropy, and color measures). Compared to Impressionist and Expressionist portraits, the more realistic Baroque portraits are less self-similar, less complex, less isotropic, and differed in color values. Next, 200 participants were asked to rate the art portraits on two different aesthetic dimensions: the attractiveness of the sitter (a dimension related to the depicted person) and the beauty of the painting (a dimension related to the composition of the artwork and, thus, the use of colors and form). Although the categorical difference between the two aesthetic dimensions of art portraits was explicitly explained to the participants, the dimensions are highly correlated. Combining subjective ratings with objective GIPs, a linear regression showed that attractiveness evaluations cannot be explained by GIPs, while beauty evaluations can be associated with GIPs (adjusted $R2 = .365$, $p < .001$). The effect is mainly driven by self-similarity and color value. Strikingly, Baroque art portraits – due to the relatively higher realism – are the only case in which the effect is present within the epoch. In summary, the ratings on two aesthetic dimensions of art portraits (attractiveness of the sitter and beauty of the painting) can be distinguished by objective measurements. In relation to the realism of the depiction, beauty ratings can be partly explained by GIPs. This is not the case for attractiveness ratings.

#22
Composition and Spatial Layout of Images of Artworks in relation to their Aesthetic Appreciation

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While Composition has been at the center of philosophical aesthetics, art-theoretical discussions, and art education, it has received considerably less attention in empirical aesthetics. The same is true for the notion of Spatial Layout (hereafter "Layout"), which is more central in the literature on space and scene perception. With this large preregistered (https://osf.io/67mx5) online study of 160 artworks, we aim to provide a foundation for future work by investigating the relationship of important aesthetic measures, namely Pleasure, Interest, Order, and Complexity, with Composition and Layout. Our participants were randomly assigned either the Composition or the Layout condition, received definitions and examples of good and poor Composition or clear and unclear Layout, and then viewed 50

randomly selected artworks in two blocks. In the first block they rated them on either Pleasure or Interest, either Order or Complexity, and either Composition or Layout, using 7-point Likert Scales. In the second block they rated the same images again (new random order) on Composition or Layout and on the two remaining aesthetic concepts. Participants also filled out a standard demographics questionnaire, an art-experience questionnaire and scales from selected personality questionnaires for Openness to Experience, Need for Closure, Sensation Seeking and Aesthetic Sensitivity. First results (N=494) show that high ratings for Composition and Layout lead to higher Pleasure ratings. Ratings for Order are highly positively correlated with ratings for Composition and Layout, while ratings for Complexity are negatively correlated with ratings for Composition and Layout. Participants scoring high on Openness and Sensation Seeking require lower scores on Composition and Layout to give higher Pleasure ratings. Composition and Layout are correlated higher for representative artworks than for abstract artworks, and their relationship with other concepts seems to be slightly different. Data collection is still ongoing until we have ratings from 1280 participants.

#23
Object Neatness: Towards a Valid Approach to Operationalising Aesthetics for Experimental Aesthetics Research.
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Aesthetics plays a significant role in human cognition, behaviour, and decision-making. Studies using everyday objects have revealed the cognitive impact of aesthetics. However, manipulating aesthetic variables in experimental settings remains challenging. A standardized method for manipulating aesthetics would enhance stimulus control and facilitate inter-study comparisons. Our study aimed to validate a novel method for operationalising everyday object aesthetics. Drawing from philosophy of aesthetics perspectives, we employed surface neatness as a critical parameter of object aesthetics. Unlike previous approaches (e.g., changing objects' style or shape), manipulating the object's neatness preserves other key parameters (e.g., typicality or familiarity), making neatness a promising independent variable for experimental studies of aesthetics. To test the hypothesis that surface neatness influences perceived attractiveness of everyday objects, a normative study was designed and conducted. We created a set of 126 stimuli with varying neatness levels based on BOSS images. Each object was presented in three variants with different levels of surface neatness: (1) negative (featuring mechanical and hygienic imperfections introduced by graphical editing), (2) neutral (original BOSS images), and (3) positive (with added signs of cleanliness or decoration). 53 participants (26 females) rated the visual attractiveness of experimental stimuli using a 7-point Likert scale. Results revealed consistent differences in attractiveness ratings based on neatness levels ($F(2, 74) = 496.59$, $p < 0.001$). Negative neatness consistently corresponded to the lowest ratings (M=1.78, StD=0.4), neutral – to moderate ratings (M=4.38, StD=0.61), and positive – to the highest (M=5.17, StD=0.46). Our findings demonstrate effectiveness of manipulating surface neatness for altering attractiveness without affecting other normative dimensions. Furthermore, we introduce a standardised stimulus set with varying neatness, normalised for visual attractiveness.

#24
The Loss of Symmetry's Beauty in Stochastic Pictures
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Several studies (e.g., Bertamini, Makin & Rampone, 2013; Jacobsen & Höfel, 2002; Nucci & Wagemans, 2007) demonstrated that symmetric stimuli are considered more beautiful than asymmetric ones. However, Leder et al. (2019) highlighted a limitation in regarding symmetry as a universal law of beauty, showing the effects of artistic expertise on the appreciation of asymmetry. In their study, non-experts rated symmetric and complex stimuli as more beautiful, while experts found asymmetric and simple stimuli more appealing.
In a recent study (Perillo & Mastandrea, 2023), we observed that irregular compositions composed of stochastic modules were rated as more dynamic, beautiful, and complex compared to regular compositions with the same modules. In contrast to Leder et al.'s (2019) study, both art experts and non-experts generally rated irregular compositions as more dynamic, beautiful, and complex than regular compositions. These results lead us to assert that, along with specific training, culture, context, and the specificity of stimuli (symmetric, stochastic, modular, regular, irregular, etc.) are crucial in evaluating their beauty.
However, our study on irregular stochastic modular compositions did not directly contradict symmetry preferences. Therefore, we conducted a new study to investigate aesthetic judgments between random compositions and various symmetries in stochastic modular pictures.
Using an automatic procedure we obtained eight picture-matrices with stochastic modular polygons. In order to generate our stimulus-pictures, we replicated each matrix sixteen times and combined them to obtain four different types of symmetrical distributions (horizontal, vertical and local reflections with and without rotations) and one random distribution of the same matrices. Participants were asked to rate the pictures on three different Likert scale items about perceived motion, complexity and the beauty of each image. Preliminary findings did not show higher beauty rating for symmetrical pictures.

#25
Explicit and implicit preference for symmetry across object categories
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Symmetry, like curvature, is a feature that exerts a clear influence on aesthetic judgements. Our study's main goal was to examine what role bilateral symmetry plays in informing aesthetic preference judgements across widely different types of objects, namely angular shapes, smooth shapes, landscapes, flowers, female faces, and male faces. Based on the work of Bertamini et al. (2019), we selected these image categories considering their differing degrees of curvature, familiarity to the viewer, and tendency to be perceived as object ensembles as opposed to standalone objects. We also introduced blobs, manipulating landscapes into blurry tessellated patterns featuring patches of color, to remove familiarity while preserving the appearance of composite objects. Every item in these categories featured both a veridical and an artificially symmetrized version. We first asked participants (N = 100) to give both beauty and symmetry ratings using a visual analogue scale, with each viewer being exposed to only the veridical or symmetrical version of a given item. In a second experiment, participants (N = 59) engaged in an Implicit Association Task focused on angular shapes, blobs, and landscapes. A subset of subjects (N = 42) participated in both experiments, enabling a comparison between measures of explicit and implicit preference for symmetry. Results showed on the one hand an explicit preference for symmetry in angular shapes and smooth shapes, and on the other a strong preference for veridical landscapes compared to

their symmetrical counterparts. Blobs were also preferred in their veridical version, albeit not as neatly as with landscapes. As expected, we observed an overall implicit association between symmetry and concepts related to goodness, regardless of image category. However, the stronger the implicit preference for symmetry in blobs and landscapes, the higher the beauty ratings that were assigned to these categories, suggesting partial dissociation between explicit and implicit preference for symmetry.

#26

How Complexity, Novelty, and Uncertainty Influence Our Aesthetic Responses to Abstract Paintings

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Berlyne suggested using "collative features" to describe attributes such as complexity, novelty, and uncertainty, which have arousal potential. According to Berlyne's research, the preference for a given stimulus follows an inverted U shape. This means that stimuli that generate excessive or insufficient arousal are typically less preferred. This study attempts to validate the impact of these collative features on preferences in the context of abstract art, specifically investigating complexity, novelty, and uncertainty. A sample of 31 participants was asked to evaluate paintings based on their perceived beauty, liking, complexity, and uncertainty, and their electrodermal activity was recorded during this experiment. Through mixed-effect model analysis, perceived complexity, particularly when combined with arousal, was found to influence aesthetic preferences significantly. However, perceived novelty and uncertainty had a limited impact on aesthetic responses. Notably, this study underscores that subjective judgments hold greater significance than manipulated variables, which aligns with the interpretive nature inherent in abstract art. To conclude, this research verified the factors impacting aesthetic preferences and arousal, underscoring the role of subjective experiences in the perception of abstract art. Such insights have the potential to benefit artists striving to evoke heightened arousal in viewers and thus elicit specific aesthetic preferences.

#27

Aesthetics and sustainability: the role of materials in activating the affordances of everyday objects.

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The study of beauty and its perception are related to several aspects of human cognition. Interestingly, neural foundations afferent to aesthetic perception of beauty constitute perceptual phenomena that share a variety of formal and processual features with the activation of affordances related to object perception (Xenakis & Arnellos, 2013). By linking cognitive and neuroaesthetics research on affordances and beauty, we explored the effects of materials and the role that beauty can play as an environmental nudge. Most empirical work has focused on the shape and size of objects (e.g. Ellis & Tucker, 2000), neglecting the analysis of other visual properties, such as texture, investigated instead by designers of everyday objects (Barati & Karana, 2019). Texture depends on the type of material, which in turn changes the familiarity, the aesthetics, and the action(s) offered by an object.
In our first pilot study, we investigated the influence of more or less sustainable materials in activating the affordances of everyday objects with varying degrees of familiarity and

pleasantness. Re-adapting a well-established paradigm (Ambrosini et al. 2012), objects shown had the same shape but were made from different material (namely, plastic vs. wood), positioned at a near or far distance, and followed by different kind of verbs (observation, manipulation, function, interaction). Participants also completed the Pro-Environmental Behaviours Scale (PEBs, Italian version by Menardo et al. 2019), and objects' ratings were collected, including pleasantness, prototypicality, sustainability and sociality.

#28
The role of emotions in sense-making with art: an interdisciplinary study

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Art remains a ubiquitous part of our lives and the way it is perceived and understood is significantly intertwined with emotions (Chatterjee & Vartanian, 2014). This study used a mixed and multi-method approach to examine the role of emotions in the sense-making process with art from an interdisciplinary perspective. Thirty-six participants took part in the study in pairs (18 dyads) and were instructed to each bring an artwork that was meaningful to them. During the experiment, participants engaged in an audio-visually recorded semi-structured conversation reflecting on both artworks and answered pre- and post-questionnaires on their emotions. Sense-making was coded in terms of four semiotic strategies namely perception, imagination, conceptualisation and analysis (van Heusden, 2015). Emotions were assessed based on their intensity and expression. Results showed that the strategy of conceptualisation evoked the most emotional expressions and emotional intensity, followed by imagination, perception, and then, analysis. Notably, emotions were involved in all semiotic strategies. These findings resonate with the 4E cognition paradigm (cf. Burnett & Gallagher, 2020). Social relationships, memories, sensory appeals, and perceived purpose emerged as influential factors in the participants' sense-making process. Furthermore, this study subtly hints at a potential 5E approach, portraying emotions as interwoven and integral to sense-making, and more specifically, in all semiotic strategies.

#29
Using a set of simple geometric images for measuring symmetry and meaning preference - A summary of our ongoing studies

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The developing methodology of empirical aesthetics includes specific visual stimuli for measuring the preference for various features. Such a stimuli set has been created and used in our studies on the preference for symmetry and meaning preference, that we present hereby. The series of studies include a pretest for validating the stimuli (N=77), a forced-choice preference questionnaire (N=195) and a forced-choice preference task with eye-tracking involving art experts ant non-experts (N=66). The results show that the preference for (higher-order feature) meaning is in general more important in the aesthetic experience, than the preference for (lower-level feature) symmetry. This clear pattern of explicit preferences for both measured features is only valid for non-experst. As for experts, little to no explicit pereference for asymmetric and meaningless images were found. However, preference for prototypicality were found in both groups. These findings deepen our knowledge about

aesthetic experiences, as well as raise further questions about the individual differences in visual preferences.

#30
The Happiness of Being Sad: The Impact of Visual Artworks on Bodily, Emotional, and Aesthetic Reactions

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Negative emotions draw attention, involve viewers, and increase memorability of events. According to the Distancing-Embracing Model, art context, contrary to the real-life, allows viewers to distance themselves and safely or even pleasurably engage with negative emotions because they are experienced through the lens of fiction. Previous research suggests that labelling images as art led indeed to more pleasant experience, thereby confirming the importance of context. Our study aimed to investigate whether the context effects can be extended to bodily automatic reactions such as body sway, heart rate (HR), and galvanic skin response (GSR). We used a modified procedure by Gerger and colleagues (2014). 111 participants with no formal education in visual arts were randomly assigned to one of three conditions: a control condition (no context information), an art condition (information about viewing art), and a non-art condition (information about viewing press photographs). Participants viewed 40 images (10 negatively valenced artworks, 10 positively valenced artworks, 10 negatively valenced IAPS, and 10 positively valenced IAPS) in a random order for 3500 ms each whilst their body sway, HR, and GSR were recorded. They also evaluated their emotional and aesthetic experience, and filled in questionnaires (e.g., emotional reactivity, emotion regulation strategies). We found that negatively valenced images were related to a sway reduction (i.e., freezing), whilst positive valence was associated with an increased postural sway (i.e., leaning). GSR and HR were also sensitive to stimuli valence. Interestingly, viewing actual artworks dampened the bodily reactivity related to negative valence, whereas for the IAPS images there were clear differences between negative and positive valence. Finally, the effect of context was found only for behavioural, but not physiological measures. Overall, our results suggest that the influence of context may not be as strong as postulated, but viewing real artworks makes negative emotions more pleasurable.

Friday, May 10, 2024

Poster Session 3

#1
Beauty after AI? The effect of AI detection on aesthetic evaluation, and vice-versa
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Interactions with AI-generated faces are becoming more common in our everyday experience. From dating apps and phishing scams to fake news, the potential for misusing attractive AI-generated faces is also becoming a greater concern. However, little is known about how aesthetic evaluations may be affected by suspicions of AI. The present study investigated the interaction of aesthetic evaluation ("Is it beautiful?") and AI detection ("Is it real?") while people made these different judgments about the same faces. Participants (n=95) judged 48 faces (24 photos of real people/24 AI-generated) in two conditions. Using a counterbalanced design, participants were asked either to (1) first determine whether each face was real or AI-generated, or (2) first rate each face for its beauty. Participants then saw the same 48 faces again, but evaluated each on the remaining dimension. We found condition-order effects for both groups of participants. As predicted, participants who were first asked to judge artificiality later rated the same faces as less beautiful (compared to the beauty-first group). However, participants who first made aesthetic judgments later judged more of those faces to be AI-generated (compared to the AI-first group). These results suggest people are more reluctant to rate faces suspected of being AI-generated as beautiful, but may also seek to offload personal responsibility for their aesthetic judgments onto AI when given the opportunity.

#2
Experiencing the Overview Effect Makes Us Feel More Connected to Nature: Evidence from an Experimental Study Combining Virtual Reality with Artistic Images and Music
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The overview effect is the effect described by astronauts when viewing the Earth from outer space. The first theories of the overview effect, and the term itself, were introduced by Frank White in his book The Overview Effect: Space Exploration and Human Evolution (1987). His text is based on interviews of 30 astronauts.
Our study aims to investigate whether the overview effect can be recreated on Earth using virtual reality. We conducted an experiment with 70 participants watching a Virtual Reality video with artistic images and music intending to recreate the overview effect. Would watching this 25-minute-long video give some of the same effect as the astronauts described? Would it give the same changes in connectedness to nature, to other people and to themselves? What would be the mechanisms behind these changes in connectedness? And what individual differences would we find in the reported experience and change in connectedness?

To investigate these questions quantitatively, we combined pre-test, post-test and one-week follow-up questionnaires with psychophysiological measures and continuous self-ratings of the subjective experience of intensity.

Previous studies link the overview effect to awe, and it has even been described as the quintessential awe. Our study will consequently not only contribute to the current understanding of the overview effect, but also add to the understanding of the emotion, feeling or experience of awe.

#3
Probing the Dynamics of Live Musical Experiences: A Concert Study Investigating Physiological and Behavioral Responses in Live and Recorded Contexts

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In order to examine the unique attributes of live experiences, this concert study systematically manipulated the concert context, employing two distinct conditions—live and recorded—which were counterbalanced with comparable musical sets of a Jazz trio, resulting in four individual concerts. Conducted in the Artlab of the MPI for Empirical Aesthetics in Frankfurt am Main, Germany, in collaboration with the Neurolive project, the study utilizes a naturalistic reception setting whilst enabling fine-grained technical control over experimental conditions and measurements. In total, 114 participants (63 female) with a mean age of 51.4 years (SD = 17.6) took part in the study. Spectators' respiration, heart rate, facial muscle activity (EMGzyg) and head movements were measured, along with questionnaires after each song and video recordings, which constitutes a comprehensive dataset for probing the spectators' aesthetic experience and potential factors that influence the experience. Initial observations suggest distinct differences between contexts, with the live condition exhibiting heightened audience-performer interaction, bodily synchronizations (e.g., tapping feet), applause, and laughter when performers were present. Conversely, in the non-live condition, audience members displayed more passive behavior: leaning back without applause or laughter and focusing on internal listening. The ongoing analysis aims to explore these disparities in physiological and questionnaire data, shedding light on the distinct facets of live and non-live concert experiences.

#4
Inspirational Aesthetics: How does engagement with audiovisual artwork enhance creativity?

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The effect of viewing abstract artwork can be varied and may produce insights that elicit inspiration and/or motivate a creative process. This study examined the relationship between aesthetic experience and creative inspiration, where we predicted that engagement with artwork would enhance performance on subsequent creativity tasks. It was hypothesised that abstract artwork that conveyed more meaningful imagery and congruent audiovisual artwork (with audio that complements the theme of the visuals vs. randomly generated noise) would produce increased feelings of inspiration - as meaningful objects and concepts were identified - leading to better performance in creativity tasks. To test this hypothesis, 41 participants were randomly assigned to either the More Meaningful or Less Meaningful artwork conditions. Participants engaged with each artwork for two minutes before completing an

Alternative Uses Task in which they generated creative uses for everyday objects. Participants then rated their perceptions of the artwork and feelings of inspiration. For each participant, this process occurred with three artworks at three levels of complexity: Simple, Complex and Complex Audio-Visual. Meaningfulness and Complexity did not significantly increase creativity scores across the groups. However, in exploratory analyses, we identified relationships between participants' self-reported Meaningfulness, Inspiration and Aesthetic Insight (a sensation of positive affect from being able to detect meaning within the images) and Alternative Usage Test scores when taken as averaged scores across the entire sample. These findings show initial support for the hypothesis that aesthetic experiences can prime creative performance, but further research is needed to identify the specific mechanisms by which this effect occurs.

#5
Neural connectivity of the visual system and its implications for creativity in visual artist: a multimodal MRI study

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Introduction: Visual artists (VAs) develop extraordinary mental capacity through complex learning. Creativity is perhaps the most prominent mental capacity of VAs and the visual system may be the neurological source of mental capacity. The current MRI study aims to unveil the functional and structural neuroplasticity of the visual system and its implications for creativity in VAs with long-term artistic training.
Method: Twenty-seven university students majoring in visual arts and 27 non-artist controls were enrolled.
In the functional MRI study, we examined the local and long-distance intrinsic functional connectivity (FC) of the visual system. In the structural MRI study, we investigated white matter plasticity using diffusion spectrum imaging (DSI).
Results: The functional study examined the local and long-distance intrinsic FC of the visual system to unravel changes in brain traits among VAs. VAs also presented enhanced FC with the left inferior temporal gyrus (ITG) that targeted the visual area (occipital gyrus and cuneus), which appears to be associated with visual creativity. The structural study uncovered that VAs demonstrated increased white matter properties in visual system. These enhancements within the visual system were also found to be correlated with measures of visual creativity.
Discussion: The visual creativity of VAs was correlated with functional and structural neuroplasticity in the visual system. Learning-induced neuroplasticity as a trait change observed in VAs can be attributed to the macroscopic consolidation of consociated neural circuits that are engaged over long-term training in the visual arts and aesthetic experience. This study provides evidence of the functional and structural neuroplasticity of the visual system, showing how the characteristics formed through long-term learning and experience of VAs influence neural mechanisms. Particularly, this study reveal brain changes related to creativity, contributing to our understanding of the essence of artistic creation and its corresponding neural representations in VAs.

#6

Unlocking the Muse: The Impact of Dopamine Agonists on Artistic Ability and Visual Creativity in Healthy Controls
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The quest to uncover what 'makes an artist,' has revealed a unique relationship between creativity and neurodegenerative diseases. Putative changes in cognition, neurobiology, or lifestyle related to these afflictions seem to be also connected to evidence of changes in artistic interest, motivation, or approach. This is particularly true for Parkinson's Disease (PD), with a growing body of research suggesting a link between individuals diagnosed with PD and changes in creativity. This can manifest in alterations in style among previous artists, and, perhaps even more compelling, in artistic 'improvement,' heightened motivation, and even the emergence of "de novo" artists among previously art-uninterested PD patients. These phenomena are suggested to be especially influenced by specific pharmacology – namely, D3-targeting dopamine (DA) agonists - used in the treatment of PD.
While an emerging body of research has started to employ DA agonists in experimental studies on cognitive function in healthy controls (HCs), their impact on creativity remains unexplored. We will test the effect of DA agonists suggested to drive creativity changes in PD on HCs, using a single-dose method and a visual-art paradigm developed by our team. To obtain a multifaceted assessment of creative expression, participants' artistic output will be assessed on three levels: 1) self-reports on creativity, 2) subjective assessments by human raters, and 3) analysis of objective low-level visual properties.
We will discuss how comparing the effects of DA agonists on creativity in HCs, with the existing literature on PD patients, can inform us about the relationship between neuromodulation and art production. As part of the broader Unlocking the Muse Project (University of Vienna), this pilot study will contribute to further longitudinal research and increase our understanding of the neurobiological foundations of creative expression in the context of neurodegenerative disease.

#7

East Asian Perspectives on the Study of Creativity: A Case Study of South Korean Tattoo Artists
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In 1992, the Korean Constitutional Court introduced a law banning the use of needle-guns by non-medical professionals, effectively outlawing tattoo artists. Currently, South Korea remains the only OECD country that legally prohibits the practice of tattooing. Despite the risks, South Korean tattoo artists have gained global recognition for their minimalist and fine-line aesthetic styles of the 'single-needle' technique. This pilot study examines the cognitive profile of such artists, investigating the commonplace knowledge that creativity stems from a willingness to detach from authority figures. By drawing from a case study of two Korean tattoo artists, this study offers a non-Western perspective to the study of artists. Contrary to Otto Rank's psychoanalysis of creativity, the preliminary findings suggest that for these Korean artists, the struggle against the will of authority figures — rather than complete detachment — has resulted in a new aesthetic of contemporary designs that draws from and adapts traditional painting styles. Based on these findings, the author offers suggestions for future research on comparative studies of creativity.

#8

The aesthetic valve: Aesthetic appreciation moves us along the continuum between anxiety and curiosity

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Pursuing new knowledge in an uncertain environment is pivotal for survival. However, dealing with uncertainty is a costly challenge, and one that may give rise to opposite epistemic emotions, such as curiosity (i.e., a drive for knowledge acquisition) and anxiety (i.e., a conservative reaction against novelty). We recently proposed that aesthetic appreciation, by associating a pleasant feedback with the update of predictive representations, can generate a second-order expectation of dealing successfully with environmental uncertainty, shifting the agents' emotional state from anxiety to curiosity. In line with this hypothesis, our previous studies reveal an inverse relationship between aesthetic appreciation and anxiety during music listening. However, a thorough empirical investigation of the ability of aesthetically appreciated stimuli to modulate our attitudes towards environmental uncertainty is still lacking.

Here, we present the result of a series of behavioral and electrophysiological experiments that aim to fill this gap. In Study 1, we examined whether music-indud aesthetic appreciation would influence curiosity in a gambling task. In Studies 2a and 2b, we explored the relationship between music-induced aesthetic appreciation and anxiety state. In study 3 we investigated whether the phenomenological continuum between aesthetic appreciation and anxiety also modulates some electrophysiological parameters of attention and implicit learning, such as the mismatch negativity.

Overall, these experiments suggest that aesthetic appreciation promotes curiosity-driven behavior and is negatively associated with anxiety. Furthermore, aesthetic appreciation, rather than anxiety, is associated with an enhancement of attentional and perceptual learning measures.

These results are consistent with the idea that aesthetic pleasure could act as a "valve", prompting the individual to seek new information in the environment (i.e., to consider novelty as a valuable opportunity to acquire new knowledge) rather anxiety (i.e., to consider novelty as a risk to be avoided).

#9

Exploring the Relationship between Curiosity and Aesthetic Experience: A Pilot Study on the Impact of Individual Differences on Art Engagement

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Curiosity is the intrinsic desire to seek information and is underpinned by the neural reward system. While previous research has found that receiving information about artworks enhances aesthetic engagement, little attention has been paid to the role of curiosity in art experiences. In this study, we manipulated the amount of agency participants had over what and how much information they received about artworks, and we examined the extent to which individual differences in subdomains of curiosity ("Joyous Exploration", "Sensitivity to Deprivation," and "Social Curiosity") and ADHD symptoms (a proxy for neural reward dysfunction) predicted aesthetic experiences and curious behaviour toward art.

The experiment included 60 visual artworks and three categories of information per artwork: information about the artist, the meaning of the piece, and the context in which it was

produced. In the first block of the experiment, participants provided initial liking and curiosity ratings on each painting. In the second block, the paintings were randomly assigned to three conditions: no agency (50% chance of receiving information from one category), some agency (choice to receive one piece of information from a random category), or full agency (participants decided whether, what, and how much information to receive). After receiving none to all information chunks, determined by the agency granted to participants, they re-evaluated their liking and curiosity towards each painting. Finally, participants completed the Five-Dimensional Curiosity Scale Revised and the Adult ADHD Self-Report Scale.

We found that initial ratings for liking and curiosity were predicted by ""Joyous Exploration"" and ADHD-consistent symptoms. Furthermore, participants with higher scores in "Joyous Exploration", "Deprivation Sensitivity" and ADHD symptom severity were more likely to opt for receiving information. These findings pave the way for further exploration of how individual differences in curiosity shape aesthetic engagement and experiences.

#10
Curiosity and Video Gaming: Player motivations relationship with information-seeking.
Charlotte Potter* and Stacey Humphries.
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Curiosity, our desire to know, has an important role in learning and engagement with information. Personality psychologists consider curiosity to be a trait which influences how we explore information and investigate. The existing literature argues that there is a gap in video game research and an increased focus on curiosity. We might expect that individuals who score highly on specific curiosity domains seek specific game styles and visual stimuli. For example, individuals scoring highly on the Joyous Exploration domain may seek 'open world' style games, which encourage roaming. Socially Curious individuals may choose character driven games. We investigated whether curiosity profile predicted game choice, player motivation and questions asked by video gamers (N = 87).

This study categorised unreleased indie games from the popular video game platform STEAM using tags generated by STEAM's significant user base of 33 million players. Participants completed four tasks regarding to a specific selection of 24 games. First, participants completed the Quantic Foundry Player Motivation Profile to determine player type I.e., Gladiators, Slayers. A selection of games was then chosen for further investigation before participants completed a question asking task. Finally, participants completed the 5 Domains of Curiosity Scale (revised) I.e., Joyous Exploration and Stress Tolerance. Significant relationships were identified between video game player motivations, curiosity domains and types of questions asked. Players who were driven by Action-Social gameplay e.g. Gladiators and Ninjas, had high Thrill-Seeking curiosity scores. Gamers who were driven to achieve Mastery-Achievement in their gameplay were participants who had high Deprivation-Sensitivity curiosity scores i.e., they chose game stimuli which indicated they could practice and refine, to satisfy their curiosity. The findings contribute to curiosity research by evidencing that that we do engage with visual and written video game stimuli differently and this is related to our individual curiosity profile.

#11
The Psychedelic Aesthetic: Psychedelic Use and Aesthetic Emotions in Response to Art
Alyce Burton* and Stacey Humphries.
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Psychedelic substances have received renewed scientific investigation, showing strong therapeutic effect and lasting psychological changes. The relationship between psychedelics and aesthetic experience has received little attention, despite frequent anecdotal reports of lasting aesthetic appreciation following psychedelic use. In addition, aesthetic shifts in perception are reported as a significant motivation for recreational use of psychedelics. The present research was designed to bridge the gap at the intersection of psychedelic and aesthetic research. Participants (n = 96) completed aesthetic emotional rating tasks in response to artworks from three categories: abstract, nature and symbolic. They also completed validated measures of aesthetic experience and openness to experience, which were used as covariates. Group differences were explored between those with a history of psychedelic use and a control group of psychedelically-naive participants. Hierarchical multiple regression analyses explored the remaining effects of psychedelic experience when openness and aesthetic experience scores were accounted for. Our findings support the hypothesised relationship between psychedelic use and enhanced aesthetic experiences, across a number of aesthetic emotional domains and independent of covariates. Participants with psychedelic experience were significantly more likely to report feelings of beauty, curiosity and happiness in response to abstract art, less likely to experience boredom in response to all art categories measured, and less calm in response to symbolism art. We tentatively provide the first empirical support for the hypothesis that people who use psychedelics have enhanced experiences of art and offer foundations and suggestions for future research.

#12
Aesthetic appreciation inhibits motor response: an EEG study

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Recent neurocomputational models in neuroaesthetics highlight the relationship between beauty and learning: according to these models, we tend to grant our aesthetic preference to those stimuli that maximize our learning. Recently, we proposed the 'Stopping for Knowledge' hypothesis, suggesting that aesthetically pleasing stimuli could induce a state of transient motor inhibition, as most neural resources are allocated to the processing of perceptual inputs. Here, we present the results of two experiments showing that preferred landscape images elicit motor inhibition, as indexed by both slower reaction times and a significant modulation of motor-evoked responses. In Exp. 1, we tested whether images deemed more beautiful produced slower response times. Participants (N=21) were asked to focus on landscapes for 5 seconds and were instructed to press a button as soon as the images disappeared. Participants were then asked to rate the beauty of the landscapes. In Exp. 2 (N=20), we repeated the same experimental protocol adding electrophysiological measurements, to detect motor preparation (during image contemplation) and the motor-related cortical potentials. We found slower response times following the exposition to preferred as compared to non-preferred landscapes both in Exp. 1 and Exp. 2. In Exp. 2, we found lesser motor preparation and smaller motor-related cortical potentials in response to preferred as compared to non-preferred images. This evidence seems to confirm the proposed hypotheses, pointing to the aforementioned link between aesthetic appreciation and motor inhibition.

#13

Brushstrokes and Embodiment: Effects of motor priming on aesthetic appraisal of static drawings

Mary Kelly* and Rebecca Chamberlain.
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The present study implemented a motor priming paradigm to investigate the embodiment account of aesthetic experience, building upon two bodies of literature: one which has found cortical motor activity during the perception of visual artwork, and another which found increased appraisal of stimuli following motor priming congruent with the stimuli's creation. Participants were presented with video stimuli of line drawings being created and asked to either observe or replicate their static outcomes. They were subsequently presented with those same stimuli along with novel stimuli and asked to provide aesthetic ratings for each. It was hypothesized that participants would rate objects which they had previously drawn more highly than both those which they had merely seen, and novel stimuli. No significant difference was found between seen and drawn stimuli, but ratings for novel stimuli were significantly lower. While not providing direct empirical support for the embodiment account of aesthetic experience, the results do not discount the theory. Rather, the higher appraisal of drawn and seen stimuli may be due to increased perceptual fluency and the mere exposure effect. Further, the influence of visuomotor priming must be further explored in subsequent studies.

#14

Using fNIRS and physiology to track fluctuations in enjoyment and absorption of a time-based generative digital artwork

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When a person engages with an artwork over an extended period, states of enjoyment and absorption can fluctuate. How are these fluctuations reflected in neural and physiological activity? 60 observers viewed an 11-minute segment of a continuously changing light-based digital artwork by artist Leo Villareal (Particle Field I, 2017) while brain activity was recorded using functional near-infrared spectroscopy (fNIRS) and physiological signals (ECG, EDA, body motion, EOG) were recorded using electrodes attached to their body and face. In a first viewing, observers passively viewed the artwork, and then filled out a 15-item assessment of their overall experience. In a second viewing, observers used a dial to give a continuous rating of their enjoyment of the artwork. Four factors were identified from the overall assessment using principal component analysis (PCA) with oblique rotation corresponding to absorption, mind wandering, meta-awareness, and enjoyment. Four regions-of-interest (ROIs) were identified from the fNIRS data using independent localizer tasks for sensitivity to coherent motion (early visual, hMT) and autobiographical memory (MPFC and IPL nodes of the default-mode network). There was a trend for higher coherence between MPFC and hMT for 'high' vs. 'low' enjoyment periods, and also a trend for higher MPFC-hMT coherence over the entire viewing for participants who reported greater mind wandering. Within the period of maximum enjoyment (which differed from person to person), MPFC-hMT coherence was significantly negatively associated with reported absorption. Inspection of ECG data from 43 participants revealed a positive correlation between average heart rate and overall enjoyment, and negative correlations between average

HRV and both enjoyment and absorption. These preliminary results suggest that the combination of fNIRS and physiological monitoring may be a promising avenue for monitoring continuous fluctuations in enjoyment and absorption during engagement with aesthetic objects.

#15
Perceptual and cognitive skills related to art expertise

Rebecca Chamberlain*, Candace Farling, Carmel Levitan, and Aleksandra Sasha Sherman. *Psychology, Goldsmiths University London, London, UK

Does art engagement and expertise– in terms of both creation and appreciation – sharpen an individual's perceptual and cognitive skills? Previous research suggests that visual arts training may confer cognitive and perceptual benefits, including improved visual attention and observational skills, though more data is needed to make reliable claims. However, little research has investigated whether and how visual arts engagement (i.e. art appreciation) facilitates cognitive and perceptual skill development and how art appreciation relates to art making. We are thus administering a study containing both an online and in-person sample assessing how art expertise relates to a number of cognitive and perceptual capacities. We have completed data collection for 100 participants and are currently collecting data from individuals with a higher baseline knowledge of art, namely practicing artists and art history students and scholars. Our task battery includes measures of visual attention, working memory capacity, creativity, mental rotation, emotion recognition, empathy, and mental imagery. Art expertise is assessed in several ways: questionnaires assess art history knowledge, interest in the arts, self-reported experiences in art-making, and through two drawing tasks measuring both skill and creativity. Our preliminary results suggest a multi-faceted relationship between art expertise and several cognitive and perceptual capacities including empathy, mental rotation, creativity, and local/global processing.

#16
Are facial anomalies bad? Possible mechanisms

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Looking at natural objects like faces can be an aesthetic experience. These aesthetic experiences, even at a glance, of beauty judgments are accompanied by judgments about other people's inner psychological traits. Attractiveness is associated with positive psychological attributes ("beauty-is-good" stereotype). We tested the hypothesis that a negative bias in which anomalous faces are considered bad also exists. We asked N = 1493 participants to assess various faces via an online survey. We predicted that people with facial anomalies are associated with negative characteristics and explored the reasons for this association. We hypothesized that biases against faces with scars and palsies arise because of negative stereotypes (less warmth and competence) and forms of dehumanization (animalistic and mechanistic). Furthermore, because scars are rendered by external causes and facial asymmetries from internal sources, we predicted that facial asymmetries would be more subject to negative internal character judgments. We also examined whether perceived facial attractiveness and age protect against negative stereotyping. Using photographs of real people before and after plastic surgery and a wide range of faces, we found that both kinds of anomalous faces were seen as less warm, competent, and were dehumanized. Our findings suggest that the "anomalous-is-bad" stereotype generalizes regardless of the source of the

anomaly. This effect may be similar to a general halo effect, except in a negative direction. We also found that facial attractiveness and age modify the "anomalous-is-bad" bias.

#17
Consensus and contention in beauty judgment
Maria Pombo*, Aleksandra Igdalova, and Denis G. Pelli.
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Variance across participants is at the heart of the centuries-old debate about the universality of beauty. Beauty's belonging to the eye of the beholder implies large interindividual variance, while beauty as a universal object property implies the opposite. Moreover, any quantitative prediction of beauty depends heavily on measuring interindividual variance. To draw attention to variance in beauty judgment, we asked 50 participants to judge the beauty and typicality of 360 images and selected two quartets with either high- or low-variance images with high typicality and a given mean beauty. The quartets have high or low variance across participants (population variance) and correspondingly high or low variance across images for each participant (quartet variance). We hoped that experiencing high and low variance in their perception would raise the participant's awareness of beauty variance. To test this, 52 new participants rated the beauty of all images in the quartets among 16 foils. They also estimated their quartet mean and variance. Participants successfully predicted their quartet mean but failed to predict the population variance and their own quartet variance. This fits the literature reporting public unfamiliarity with probability and ignorance of variance. The invisibility of variance helps explain why many are comfortable declaring their own beauty pronouncements universal in the presence of contrary ratings by others (Kant, 1790). Yet, despite being invisible, beauty variance is essential to prediction, theoretically and practically. Different images have different beauty variances. These quartets exhibit how different variances can be and why variance should be measured.

#18
Eyes on Memes: Exploring Internet Meme Appreciation through Eye Tracking and Gaze Transition Entropy
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In this eye-tracking pilot study, eight participants engaged with fluent and disfluent internet memes while their eye movements were tracked. Afterward, participants provided subjective ratings of liking and perceived ease of understanding for each meme. Initial results provide insights into the interplay between gaze patterns, fluency, and aesthetic preferences. Disfluent memes emerge as attention magnets, with higher fixation counts, longer average fixation times, and extended dwell times, particularly for textual elements. Region of Interest (ROI) analysis shows the allure of disfluent meme images, capturing more fixation counts than their fluent counterparts. Despite these visual distinctions, participants found fluent memes easier to process, though there were no significant differences in overall liking. Gaze entropy, a measure of the unpredictability and complexity of eye movements, was calculated to quantify the visual exploration patterns during meme consumption. Correlation analyses unveil subtle relationships between gaze entropy metrics and subjective responses. Gaze transition entropy (GTE) shows a low positive correlation with aesthetic liking and a very low positive correlation with ease of processing. In contrast, gaze stationary entropy (GSE) demonstrates a moderate positive correlation with both aesthetic liking and ease of processing. Interestingly,

differential correlations emerge when examining fluent and disfluent memes separately. For fluent memes, GET and GSE show a disconnect with liking but exhibit a moderate negative correlation with ease of processing. In contrast, disfluent memes showcase a consistent moderate positive correlation across gaze entropy metrics and subjective responses. These findings illuminate the complex interplay between visual attention and subjective preferences in internet meme appreciation. While the current pilot data offers initial insights, a future investigation will provide a more robust understanding of the correlations between gaze transition entropy and subjective experiences of liking and ease of understanding in the context of internet memes.

#19
Refining raw data of psychophysiological measures and continuous-self ratings into useful and reliable time series plots
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The threshold of using psychophysiological measures in art and media research has decreased in line with lower procurement cost and size of equipment. Using psychophysiological methods may provide insights into emotional and cognitive processes that participants are not able to or perhaps not even willing to share (Potter & Bolls, 2012, p. 44). Consequently, these methods may provide insights into the processes that happen in the bodies and brains between the stimuli and the effects that participants report. However, affordable and lightweight equipment is not sufficient without statistical methods to process and interpret the raw data. As part of a study on the experience of a VR video, we explored statistical methods to process raw data to retrieve useful and reliable time series plots.
We invited 70 participants to our lab to experience a 25-minute-long video intending to recreate the overview effect with the use of artistic images and music based on binaural beat and Schumann resonances. The overview effect is the experience the astronauts have describe when viewing the world from outer space, including the effects that followed afterwards (White, 1987). This has been described as the quintessential experience of awe, and it should thus provide the basis for a powerful stimulus.
Our psychophysiological measures consisted of electrodermal activity, heart frequency and respiration. These measures can give insights into emotional arousal, as well as the balance and changes between emotional arousal and cognitive activity. We complemented these measures by asking the participants to do continuous self-ratings using joystick and to fill in questionnaires prior to and after experiencing the VR video.
The statistical processes to achieve time series plots of psychophysiological measures triangulated with continuous self-ratings and behavioural data form the core of our poster.

#20
Less is more: Aesthetic liking is inversely related to metabolic expense by the visual system
Dirk B. Walther*, Yikai Tang, and William Cunningham.
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What makes us like a particular scene or object and dislike another? A variety of visual properties, the observers' experience, familiarity, processing fluency, and self-relevance have been suggested to underlie aesthetic liking. Here we investigate whether the brain's goal to

reduce energy costs (Olshausen and Field 1997; Friston, 2010) explains the construction of aesthetic appreciation. We propose a simple, straightforward approach to explaining neural responses to visual stimuli with different levels of aesthetic preference: the total metabolic cost of firing of neurons within relevant regions of interest. We test this hypothesis in an in-silico model of the visual system (VGG19) as well as human observers and find strong evidence in both. Specifically, we compare the metabolic cost incurred by 4914 images of objects and scenes from the BOLD5000 dataset for a VGG19 network pretrained for object and scene categorization with randomly initialized versions of VGG19. We find a strong inverse relationship between aesthetic preferences for the images and their metabolic cost, but only in the network trained for categorization. We then test the same hypothesis in the human visual system by comparing aesthetic liking of visual stimuli to the metabolic activity measured with functional magnetic resonance imaging. Crucially, we find strong evidence for the hypothesized inverse relationship between metabolic expense and aesthetic liking in both early visual brain regions (V1 and V4) and high-level regions (FFA, OPA, PPA). These findings represent the first direct evidence for a physiological basis of visual aesthetics at the level of energy consumption by the visual system. Aesthetic pleasure may function as an adaptive homeostatic signal to help conserve energy resources for survival. Our metabolic account for aesthetic liking unifies empirical evidence for visual discomfort with theories of processing fluency, image complexity, expertise, and prototypicality for aesthetic liking in a simple, physiologically plausible framework.

#21
Can the design of a transmission medium impact aesthetic perceptions? The case of novel musical notations
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I will be giving a succinct overview of our line of research, which is based on the premise that —contrary to what forms the basis of Socrates's argumentation in the 'Phaedros'— notational systems are not transparent, and the design choices that inform the structuring and presentation of performative instructions can have a significative impact on the aesthetic judgement of their interpreters. More specifically, in our project 'Score designs for music reading: Cognitive and artistic perspectives', we are exploring how certain changes in the layout, spacing, format, or symbol formatting of a musical text can influence the performative choices of a musician —and ultimately, the aesthetic perception or appreciation of the receiving public. I will be exemplifying this with a short report of two recent experiments. In the first one, we asked the public (N=92) attending a concert at a well-known Jazz venue to make a comparative evaluation of the two parts (Part 1 – intermission – Part 2) of the recital they had just enjoyed; there was a statistically significant moderate preference for the second Part; the public was never informed that the second Part of the concert was performed using musical scores with a modified design, whereas the first part was performed using conventional notation. In the second experiment, two highly experienced piano teachers at a music conservatoire evaluated blindly —i. e., without knowing which type of score was used in each performance— a series of video recordings of advanced piano students (N=9) reading at first sight a relatively obscure piece by D. Shostakovich. Again, there was a statistically significant preference for the recordings in which musicians were reading from our novel modified scores; relevantly, the more positive evaluation of the performances using the modified scores was not only referred to better decoding of the information (less mistakes).

#22

Context modulates memory for music

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Music is usually accompanied by contextual information that could alter listeners' emotional responses and memory for it. Although music researchers have often examined, with mixed results, how contextual information can modulate listeners' affective judgements, it is unknown whether such contextual information can also modulate how listeners remember music. This study specifically sought to address this gap. 38 Canadian undergraduates were recruited and instructed that they would be judging recordings of piano music performed by both established, award-winning musicians (accompanied by the label, "Expert"), and by undergraduates majoring in music (accompanied by the label, "Non-Expert"). They then listened to 12 excerpts of piano recordings and rated how much they liked each excerpt (liking rating), how stimulated they felt by it (arousal rating), and how familiar it sounded (familiarity rating). The labels, "Expert" and "Non-Expert", were presented randomly with the excerpts. After a 10-minute delay, participants heard the same excerpts plus an additional 12 novel excerpts (memory foils) and judged how confident they were that they had heard each piece during the initial exposure phase (recognition memory). The main analyses involved four linear mixed-effects models with random intercepts for participants and music stimuli. The first two models predicted liking and arousal as a function of context labels, respectively, and found no evidence for an effect. The third model predicted familiarity ratings at exposure and found that pieces presented along with the "Expert" label were judged as sounding more familiar. The final model predicted recognition memory and found that pieces accompanied by the "Expert" label in the exposure phase were recognized with more confidence, even with exposure-phase familiarity rating held constant. Thus, semantic context can change listeners' memory for music. The potential causes of this mnemonic effect will be discussed along with avenues for further research.

#23

Social cues, self-construal and their impact on joint action aesthetics

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Behavioural cues like Synchrony and Gaze direction signal and promote social and affiliative behaviours. This effect, however, has been mostly explored in those actually moving and there is not much evidence about how the effects of Synchrony and Gaze direction influence the perception of social cohesiveness and, more interestingly, the Aesthetic judgement of those observing the movements. Additionally, and given that social cohesion and connectedness have previously been linked to personality measures, the current study aimed to explore the influence of Gaze direction and Synchrony in the perception of social connectedness (Togetherness) and the Aesthetic judgement, whilst understanding the moderating role of a person's self-construal type. A mixed effects model analysis revealed an effect of Synchrony for both the Aesthetic judgement (Liking) and perceived Togetherness, and an interaction between Synchrony, the Interdependent self-construal type, and the aesthetic judgment. An interaction between the first two was also found for the Togetherness measure. These findings suggest that, given that individuals scoring high in Interdependency often see themselves as more connected to others, the effect of Synchrony in the perception of Togetherness and the Aesthetic judgement is more pronounced in them than the effect

found in people showing lower scores. Finally, and contrary to Synchrony, the expected effect of Gaze direction was only evidenced in the perception of Togetherness but did not influence the Aesthetic perception of participants. It was hypothesised that this might have been due to differential cortical and subcortical pathways involved in social and aesthetic judgements.

#24
The influence of aesthetic features on approach-avoidance motivated behavior

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For decades, researchers have explored the relationship between aesthetic features, such as symmetry and complexity, and preference. Likewise, philosophers and psychologists alike have pondered the differences between preference and behavior. Nevertheless, there's is still little research about the relationship between aesthetic preference and motivation. Using an online approach-avoidance motivation task, we compare the reaction times between congruent (aesthetic preference + approach) and incongruent (aesthetic preference + avoidance) conditions for symmetry and complexity. 287 participants completed either a symmetry or complexity task online. They saw abstract patterns that were symmetrical (high complexity) or asymmetrical (low complexity). In half the trials (congruent trials), they had to "approach" with their upwards key symmetric patterns (high complexity) and "avoid" with their downwards key asymmetric (low complexity) patterns. The pattern increased in size if approached and decreased if avoided. For the other half of the trials (incongruent trials), participants had to approach asymmetrical (low complexity) patterns and avoid symmetrical (high complexity) patterns. Using linear mixed effects models, we compare participant reaction time for congruent vs. incongruent trials. We find that both for symmetry and complexity, reaction times are significantly higher for congruent (vs. incongruent trials). Overall, our results indicate the existence of an implicit relationship between aesthetic preference and motivation. Ongoing work aims to test presentation time and decision delay as modulators of this relationship and expand the results to more ecologically valid stimuli.

#25
The Venus effect: how people describe paintings in which there is a mirror reflection

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Since antiquity humans have been fascinated by mirrors, and in our modern environment they are very familiar with them and with how they behave. Yet, when people are asked to predict what is made visible, or to interpret a scene with a mirror, systematic mistakes emerge. A striking example of this is the Venus effect (VE): the tendency to claim that Venus (or any character in the scene) is looking at herself when we see her reflected face from a different viewpoint.
For the first time we explore this phenomenon in a large sample of the population, using an online study. We confirm that the effect is strong and present in the majority of participants, but it also undergoes changes when considering different layouts of paintings containing a portrait with a mirror. Although every painting is unique, we define several categories based on scene layouts. We apply these categories to artworks from art history in which mirrors have been portrayed. The work resulted in the creation of the Catalogue of Artworks and Mirror (CAM), an inclusive open access tool with the aim to help future research. Using CAM as a starting point, we explored the VE in two studies online. In Experiment1 we confirmed that the Venus effect is present in spontaneous descriptions of twenty-one

artworks. In Experiment2 we explored possible relationship between VE, measured using the same procedure as Exp 1 but with only three artworks, and individual differences. In particular we used scores from the Autism Quotient Spectrum (Baron-Cohen et al., 2001), and scores from thr Room Observer and Mirror Perspective (ROMP) spatial skill task (Bertamini et al., 2010). The experiments were implemented online in Italian and Spanish. From our analysis it was not possible to confirm any clear link between VE and performance on these other tasks.

#26
Extension as a factor to implicit motion perception

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Representing movement in a bidimensional medium has been a challenge for artists since ancient time. According to Arnheim (1974), the dynamism perceived derive from lines, shapes and direction on the scene depicted. In addition to five factors proposed by Cutting (2002), we added and tested a new cue for motion perception - extension - which refers to the extension of limbs, a departure from the standing position. The more extended the limbs the faster the motion, we hypothesize. In two studies, the first with artworks pictures depicting horse gaits (Mastandrea & Kennedy, 2019), and the second with pictures of a dancer in five poses (Mastandrea & Kennedy, 2022), we found that the greater the extension of the limbs the faster the motion perceived. But in the reverse of extension, in those situations where limbs are curled, this too can depict fast motion. For example, the Ford Mustang running pony pose communicates speed. In a painting by George Wright, The Steeplechase, two horse are depicted: on the left there is a flying-gallop and on the right a literally correct horse with legs-curled, competing in a race. Participants rated the legs-curled horse faster than the flying gallop horse; speed and liking correlated for both horses. Therefore, we can speculate that the reverse hypothesis legs-curled can depict fast motion. More in general, in the everyday world, motion takes place in three media: on-ground, in-air and in-water. The motion can be represented literally or figuratively. We will try to confirm the extension hypothesis considering other ancient and modern artworks, photographs and illustrations.

#27
Mapping Movement: A Systematic Review on the Role of Mental Representation in Dance

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Mental representations are a crucial aspect to understand the genesis and aesthetics of dance within creation and training processes. The scientific literature exploring the interaction between imagery, dance kinetics, and creative performance has proliferated. This contribution endeavors to accomplish the following objectives: (1) evaluate the impact of mental representations research on the choreographic processes, (2) to determine which studies explore the advantages of imaginary training within the domain of dance, and (3) identify personal, task-oriented, and environmental variables that may influence the variability in movement quality vis-à-vis individuals' cognitive efficacy. To present our findings, we employed the "Revised Applied Model of Deliberate Imagery Use" to scrutinize and describe "the 5 Ws and the How" of imagery use in the scientific literature up to date: Where, When,

Why, What, Who, and How. Although few studies addressed the symbiosis between imagery and dance choreography, a wealth of evidence underscored the benefits of integrating cognitive representation training into dance pedagogy. Given the artistic nature of dance, the dearth of literature pertaining to mental representations in choreographic creation constitutes a notable gap to be filled. Subsequent research endeavors may delve into cognitive performance during movement creation and action production as modes of artistic expression.

#28
Hedonic foraging: Hedonic evaluation in active inference
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How humans engage with art appreciation has traditionally been assumed to be special, disconnected from other human and non-human behaviours. We propose instead that a wide range of behaviours, from simple allostasis to the appreciation of cultural artefacts, can be understood within the unified framework of active inference. Our approach accounts for a wide variety of phenomena, such as statistical learning (e.g., fluency), bias (e.g., priming) and insight (Erlebnis or Aha experiences), all modulated by how curiosity drives the exploration–exploitation balance (see Clemente & Penacchio's talk). In this poster session, we will give a demo to illustrate how active inference encompasses this continuum by simulating specific scenarios and their corresponding behaviours (from the hunger–satiation cycle to the influence of context on art appreciation) and explaining the underlying computational mechanisms and the factors affecting them (e.g., individual traits). In so doing, we will introduce an open-source code and a free, user-friendly online widget developed to facilitate understanding of the theoretical principles and encourage further applications by the scientific community. As this proposal can be systematically applied to empirical data (e.g., from behavioural or neurophysiological experiments), it provides a testable case for a filiation between complex human cognition and core biological processes.