VISUAL SCIENCE OF ART

The Visual Science of Art Conference 2025

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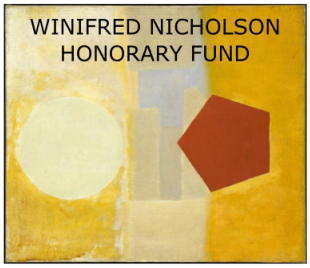

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Instructions for presenters

Speakers in talk sessions and symposia

All talk session and symposia talks are **15 minutes long**, unless agreed otherwise. We recommend keeping your talk to 12 minutes and leaving 3 minutes for questions.

All talks will take place in the Maki forum. The Maki forum is equipped with a central Windows computer for MS PowerPoint and PDF presentations. **Please make sure to transfer your presentation files to the computer in the Maki forum at least 15 minutes before the start of your session using a USB memory stick.** Ask the technical assistants in the lecture rooms for help: they will be present 15 minutes before each session and during the session. You can upload your presentation files at any time from the beginning of the conference. If you are using PowerPoint, we recommend to use standard fonts to minimise the risk of layout distortion, and embed any videos or sounds into the PowerPoint to avoid loss of these files when copying your presentation. After upload, please make sure that sounds/videos/animations run properly.

If your presentation includes special features that require you to use your own laptop, you can use your own laptop. In this case, please bring the corresponding adapter for HDMI (and ideally bring a backup pdf of your presentation on USB). Please don't forget to try out your presentation at least 15 minutes before the start of your session or earlier.

Posters

Please prepare your poster in **DIN A0 portrait format** (841 × 1189 mm). Please use the materials provided to place the poster on the board. Due to limited space, posters will be presented only during poster sessions and not throughout the day.

Poster session 1 (Thursday 21.8) will take place in the **Maki forum**. Please ask a team member to access the storage room during receptions and registration (12:00-13:00), locate your submission number (sent to you upon submission via EasyChair) and place your poster on the correct poster board. The team will then roll out the poster boards into the Maki forum in time for the poster session. Please remove your poster from the board at the end of the poster session.

Poster sessions 2 and 3 (Friday 22.8, Saturday 23.8) will take place in the **foyer**. Poster boards will be placed in the foyer in the morning. Please locate your submission number (sent to you upon submission via EasyChair) and place your poster on the correct poster board before the poster session starts at 10:15. Please remove your poster from the board at the end of the poster session.

Program

Thursday August 21, 2025

12:00-13:00	Foyer	Registration and Reception	Registration continues throughout the day	
13:00-13:45	Maki	Opening address	Oliver Kornhoff (MRE director) and David Dilmaghani (Head of the Minister's Office, Hessian Ministry of Science and Research, Arts and Culture)	
13:45-14:45	Maki	Keynote	Toward a Theory of Perspective Perception and Pictures by Aaron Hertzmann. Chair: Ben van Buren	7
14:45-15:00		Coffee break		
15:00-16:30	Maki forum	Poster session 1	Perception, Visual Imagery, Aesthetic Concepts & Eye Tracking	39
		Coffee break		
16:30-18:00	Maki	Talk session 1	Making Art (more) Accessible: From Individual Differences in Perception to Inclusive Aesthetic Experiences. Chair: Chia-huei Tseng	16

Friday August 22, 2025

9:15-10:15	Maki	Talk session 2	Variety, Variety, Variety!. Chair: Uwe C. Fischer	20
10:15-11:45	Foyer	Poster session 2	Art History, Photography & Experiencing Art	52
		Coffee break		
	Maki	Labocine screening		
	Maki	Illusions		
	Studio	Workshop 1	Abstraction to figuration and back by Katya Granova	82
11:45-12:05	Maki	Special Guest	"The Knowing Eye" by Jan Teunen . Chair: Angela Kohlrusch	
12:05-13:45		Museum	Entry ticket included in the con-ference ticket. www.museum-re.de/en/visit/mediaguide	
		Lunch		
	Maki	Labocine screening		
	Studio	Workshop 2	From One Planet to Another: Playful Bodies, Shifting Selves by Mirei Yazawa	82
	Maki forum	Workshop 3	Photography as an Emotional Mirror by Shan He	83
13:45-15:15	Maki	Symposium	Temporal Dynamics of Cognitive Processes Underlying Aesthetic Experience Organized by Hong Nguyen and Ben van Buren.	8
15:15-15:30		Coffee break		
15:30-16:15	Maki	Roundtable	What Makes a Good Artwork? with Claus-Christian Carbon, Ida-Marie Corell, Aaron Hertzmann and Angela Kohlrusch	
16:15-16:30		Break		
16:30-18:00	Maki	Talk session 3	Vision Science of Art and Aesthetics: Past, Present and Future. Chair: Hong Nguyen	23
18:00-18:30	Studio	Business meeting		
19:00-24:00		A Night at The Museum!	On Friday night (the 22.8) the Reinhard Ernst Museum will be open till late exclusively for VSAC attendees. There will be a rich program of interactive live art performances, visual projections and music.	85

Saturday August 23, 2025

9:15-10:15	Maki	Talk session 4	Art and Aesthetics: Visual Perception and Beyond. Chair: Marella Campagna	27
10:15-11:45	Foyer	Poster session 3	Embodiment, Material and Object Perception Beyond Vision, Technological Advancement & Datasets	66
	Studio	Workshop 4	RE-CREATE: An Experiential Workshop on Our Relationship with Creativity by kalliopi loumpa	83
	Maki	Special Guest	"Dialogue with Marcus Aurelius" by Bodo Korsig	81
11:45-12:45	Maki	Keynote	When Objects Become Art: The Power of Context by Marina Iosifian. Chair: Claus-Christian Carbon (CCC)	7
12:45-13:45		Lunch		
	Maki	Labocine screening		
	Studio	Workshop 5	How to use sound/music during art-making to enhance the impact of emotional expressivity in painting by Pinaki Gayen	84
13:45-14:45	Maki	Symposium	Connoisseurship to Computation; Rethinking The Role of Visual Analysis in The Study of Art and its Perception Organized by Anna Miscenà.	12
14:45-15:00		Coffee break		
15:00-16:00	Maki	Talk session 5	Visual Analysis: From Fractal Noise, Through Images, to Complex Scenes. Chair: Lisa Kossmann	31
16:00-16:30		Break		
16:30-18:00	Maki	Talk session 6	Art & Science Collaborations: Through the Lens of The Camera. Chair: Zsofia Pilz	34
18:30-23:00	Tanito's	Drinks and food	Tanito's - Casa Mexicana (Mexican restaurant)	

Keynotes

Toward a Theory of Perspective Perception in Pictures
by Aaron Hertzmann

I propose a new approach to understanding how human vision interprets 3D shape in realistic pictures, specifically focusing on perspective. I argue that most of human shape perception happens in single eye fixations, mostly in foveal vision, and that humans preserve surprisingly little 3D awareness over time. In pictures, this means that each individual eye fixation can have, to some extent, a separate perspective from the others. This theory integrates ideas from human vision science, art history, and computational photography, and suggests new ways to think about how pictures work, and how we can make pictures. In addition, I will briefly outline a more general theory around how picture perception works, accounting for phenomena like tone-mapping (which is present, in some form, in all realistic pictures) and various stylization techniques.

When Objects Become Art: The Power of Context
by Marina Iosifian

Defining art is challenging because it is a dynamic, evolving concept. Marcel Duchamp's introduction of ready-mades—everyday objects presented as art—redefined what can be considered art and profoundly influenced contemporary practices. This shift blurred the boundaries between art and everyday life, a tension that many contemporary artists continue to explore. As a result, laypeople often struggle to distinguish whether something is an artwork or merely part of the environment. But how does simply recognizing something as art shape the way we cognitively engage with it? To address this question, I will first describe how the context of art influences our ability to interpret semantic non-congruency. I will focus on how an art context affects the perceived meaningfulness of non-congruent stimuli and semantic distance. These findings illustrate how the ability to associate remote concepts—a cornerstone of creativity—can be bolstered within an art context. Next, I will introduce evidence that an art context influences the upregulation of social cognition by increasing the motivation to attribute social meanings to ambiguous visual stimuli. Together, these findings offer insights into how art impacts cognition in everyday life.

Symposia

Symposium
Temporal dynamics of cognitive processes underlying aesthetic experience

Organized by Hong Nguyen and Ben van Buren
Friday August 22, 2025 13:45-15:15

Visual aesthetic evaluations often feel instantaneous, yet they unfold over time in response to changes in the input, as well as the dynamics of perceptual, cognitive and affective processes. Speakers in this symposium will consider how aesthetic responses depend on how cognitive processes such as attention and statistical learning unfold over different timescales, as well as ways in which artworks can help us to experience time and change differently. Aesthetic experience is not a passive registration of beauty, but rather a temporally embedded cognitive construction, which depends on cognitive and affective processes that unfold across moments, trials, weeks, and years.

S1 **In pursuit of movement: Choreographic complexity and viewing behavior in dance**

Elisabeth Van der Hulst, Jonas Rutgeerts, Johan Wagemans
University of Leuven (KU Leuven), Belgium

Choreography can be considered as the organization of a dance performance in space and time but is studied much less than composition in visual artworks, which is known to influence liking and viewing behavior. In this study, we collected data from 29 participants to validate a self-developed model of choreographic complexity, building on variability and predictability applied to different levels of a choreography (i.e., movements, dancers, visual settings, and aural elements). To validate this model, fragments from two performances from Anne Teresa De Keersmaeker were selected: Fase and Rain. Participants rated the perceived complexity over the course of the fragment using a continuous evaluation procedure. The results revealed that the model has high predictive value for the perceived complexity of larger sections, as well as post-hoc explanatory value for smaller changes in ratings. In a next step, 114 participants fulfilled the same rating task but this time with aesthetic appreciation as an evaluation criterion and while wearing mobile eye trackers. 74 participants took part in a video condition, 40 participants watched a live performance in the theatre. Based on this data, we developed a taxonomy of viewing behavior that anchors fixations and saccades to elements on and around the scene in relation to the choreography. The taxonomy has three main

categories (i.e., following, comparing, and disengagement), each enriched with subcategories differing in focus, fixation duration, and viewing trajectory. Preliminary results suggest that the complexity of the choreography indeed influences viewing behavior. High variability in movements tends to lead to more switches to different entities. Considering the spatial patterns underlying the movements (i.e., a source of predictability), the movement of one dancer can "guide" the gaze towards another dancer. Moreover, different choreographic levels can also influence gaze behavior (e.g., shadow in Fase). Further analyses will be performed to confirm these results.

S1 **You can't see the same artwork twice**

Aenne Brielmann
Liverpool Hope University, United Kingdom

We do not look at art in a psychophysiological vacuum. Every individual encounter happens at a unique point in time; it is embedded in an ever-changing context of previous experiences. Nonetheless, many studies (often implicitly) assume that the sequence in which participants look at and evaluate stimuli does not matter. In this talk, I will summarize the theoretical, practical, and empirical reasons why temporal sequence affects art experiences. First, I outline how current models of art and aesthetic appreciation all incorporate elements that must change appreciation over time. Process models like VIMAP, for instance, include memory and knowledge as well as affective and social context components that change over time. More concise theories like fluency-based models more implicitly include temporal changes because processing fluency changes with exposure. Second, I give some real-life examples that illustrate how quickly and drastically our perception and evaluation of art and cultural artifacts can change. Take as one example the phenomenon of museum fatigue: as their visit goes on, people tend to enjoy the exhibits less. Consider also how popular visual art and music styles have evolved within the last few years. These examples show that relatively quick changes in aesthetic appreciation can be adaptive and useful, not merely a nuisance factor. Third, I show some of the empirical evidence that temporal sequence effects matter, even in the short time span of a single experiment session. People's ratings of a given image are affected by previous images' ratings and affective tone. Understanding why and how our art experiences change over time presents exciting opportunities for artists, curators, and researchers. Modern algorithms and data availability may help us do just that. Their architecture may provide insights into the mechanisms underlying temporal change and their output may be useful for informing curatorial and artistic practice.

S1 **Perceiving goal-directed movement in simple shapes: From prediction to preferences**

Hong Nguyen, Benjamin van Buren
The New School New York, United States

We often see others' behaviors as reflecting underlying mental states, such as beliefs and desires. Perceiving behavior as directed toward a goal may be computationally efficient: for example, when predicting whether your friend will walk to a store to buy eggs, it is simpler to do so in terms of their beliefs and desires than in terms of the complex physical forces causing their movements. Or, when predicting the future orientation of a turning shape, it may be simpler to predict that it will always face another shape than to extrapolate its current angular velocity. Computational efficiency provides a good in-principle argument for why we should see goal-directedness — but this hypothesis has rarely (if ever) been tested. Here we measured whether displays featuring goal-directed movements can be predicted more efficiently, and whether this produces a well-established signature of visual processing fluency — positive *hedonic* responses. In 10 experiments, observers viewed moving shapes (e.g. darts) which updated their orientation to face a moving disc, producing a strong impression of intentionality. Observers also viewed closely-matched inanimate control displays (e.g. in which the shape moved identically, but updated its orientation to face away from the disc°). Observers were better able to predict the future orientations of shapes when they appeared directed toward another shape, and gave these displays more positive implicit and explicit evaluations. These experiments rule out low-level explanations (such as symmetry), and show that the preference to see goal-directed movement is not just a preference for more animate-looking displays, as goal-directed shapes were preferred to those which looked animate but not strongly goal-directed (e.g. randomly moving darts producing an impression of 'aimless' movement). We conclude that seeing simple shapes in goal-directed terms allows us to efficiently predict their behavior, which in turn drives positive affective responses.

S1 **"I've Seen This Before!": How False Exposure Beliefs Rewire Aesthetic Valuation**

Chenxiao Guan
Zhejiang University, China

The bidirectional interaction between beliefs and aesthetic experiences-where cognitive frameworks shape perceptual judgments, while sensory encounters reinforce or modify those frameworks-offers critical insights into the integration of cognition and perception. While prior research predominantly addresses belief system tied to symbolic values or semantic meanings, our study interrogates a foundational yet overlooked dimension: how beliefs about prior exposure ("having seen") modulate aesthetic evaluations, and the resilience of such beliefs post-formation. In Experiment 1, participants

were paired up and completed a time-pressured competition task (3s exposure per artwork with win/loss feedback), followed by unexpected memory recognition and aesthetic rating tasks including displayed and novel artworks. Artworks were selected from the Vienna Art Picture System and pre-balanced for initial aesthetic ratings. Results showed that participants systematically elevated aesthetic ratings for artworks they believed to have seen during competition, including non-displayed ones, demonstrating belief-driven valuation independent of veridical exposure. Experiment 2-3 reconfigured tasks' orders and amplified competitive dynamics, replicating the same effect. Experiment 4 excluded social-comparative confounds and generated the effect to a single participant task. Experiment 5 introduced a 1-month delay between exposure and evaluation phases, revealing sustained effect magnitudes. Subsequent belief-manipulation paradigms systematically altered part of recognition-task labels to introduce "false exposure" beliefs, successfully biasing aesthetic ratings. These findings show that exposure beliefs autonomously modulate aesthetic ratings, and such beliefs exhibit temporal stability exceeding typical episodic memory decay patterns. In addition, this exposure belief could be manipulated and alter aesthetic ratings. This research underscores how exposure beliefs distinct from content-based beliefs, which create self-sustaining perceptual priors, marking a paradigm shift from belief-as-content to belief-as-process investigations. Acknowledgements: This work was supported by grants from National Natural Science Foundation of China (No.32400854 awarded to Chenxiao Guan, No.32171046 awarded to Hui Chen), Priority-Funded Postdoctoral Research Project, Zhejiang Province (No.ZJ2023052 awarded to Chenxiao Guan).

S1

Time and the aesthetics of disappearance

Alan Winslow
New York University, United States

In my lens-based practice — spanning photography, video, and 3D volumetric capture — time is both a material and an anchoring presence. Across live performance, installation, and interactive media, I engage the passage of time not as a backdrop, but as an active agent shaping aesthetic meaning, viewer responsibility, and the fragility of visual experience itself. In Refuge, a piece exploring endangered species, photographs of vulnerable flora and fauna degrade over time unless actively sustained by viewer engagement. Without presence and participation, the imagery fades before the exhibition's conclusion. It is an aesthetic shaped by the threat of vanishing. The hope is to have the viewer actively pause the vanishing together. In doing so, the work becomes a space for reflection and conversation, where preserving an image becomes inseparable from preserving the species it represents. In Lamentation: Dancing the Archive, we filmed one of Martha Graham's iconic solos using 3D volumetric video. Participants interact with the archive through gesture, altering the point of view, pausing time, and navigating scale, reshaping how the choreography is experienced without changing its form. A live dancer and musician bring the space to life in real time, connecting past and present

through movement and sound. In this layered experience, the archival, the physical, and the fleeting come together, time folding in on itself in a shared choreography of memory and presence. These works share a central inquiry: How does time alter an object, and how does it alter us as we look? When a work demands our presence to survive—or asks us to abstain in order to preserve —it reshapes the relationship between the viewer, the image, and meaning. Aesthetic experience becomes an evolving structure of attention, perception, and loss.

S1 **Attentional dynamics drive aesthetic preferences for photographs**

Benjamin van Buren, Hong Nguyen
The New School, United States

When different people view a scene, they attend to different things, and these differences in attention influence how much they like the scene. Patterns of attention may be highly individually specific. However, the effects of different patterns of attention on preferences may not be. Here we demonstrate this, using a new method of 'attentional transplants'. We show that, if an observer likes an image, it is possible to transplant their viewing pattern into another observer—and that this causes the recipient to like the image better, compared with transplanting the viewing pattern of a donor who disliked the image. In Experiment 1, 50 observers viewed images of landscapes by using their cursor to move a small circular viewing window around each image for three seconds. After viewing each image, they rated how much they liked it. For each image, we identified two 'attentional donors'—the Liked-it-Best observer who rated the image highest (relative to their other image ratings) across observers, as well as the Liked-it-Least observer who rated the image lowest across observers. Next, we recruited 100 new observers to serve as 'attentional recipients'. These observers viewed each image, but now passively, through a moving window which reproduced the viewing pattern of either the previous observer who Liked it Best, or the observer who Liked it Least. Recipients gave substantially higher ratings to an image when they received the viewing pattern of the observer who Liked it Best, compared to when they received the viewing pattern of the observer who Liked it Least. In subsequent experiments, we replicated this effect, and found that Liked-it-Best attention patterns are more predictable. We conclude that individual differences in preferences for scenes are partly explained by differences in how we dynamically attend—but that attention drives preferences in similar ways across observers.

Symposium
Connoisseurship to Computation; Rethinking the role of visual analysis in the study of art and its perception

Organized by Anna Miscenà
Saturday August 23, 2025 13:45-14:45

The visual analysis of artworks has traditionally relied on the expertise of connoisseurs, who, building on years of meticulous comparisons, could distinguish an artist's style, identify pigments of a given period, and recognize regional motifs. However, connoisseurship is constrained by its fundamentally subjective nature. Advances in computer vision now enable quantitative visual analysis, automating comparisons once done qualitatively. While these innovations enhance precision and scalability, they also pose methodological challenges. Can quantification transform connoisseurship, or will it further fragment the study of art? This symposium gathers experts in art history and computer science to explore the impact of computational tools on the visual analysis of art and the evolving role of connoisseurship.

S2 **Decoding the Invisible in Artworks: A Differential Topology-Based Visual Analysis System**

Issei Fujishiro, Fuminori Shibasaki
Keio University, Japan

Leading lines are a cornerstone of artistic composition, subtly directing an observer's gaze to enhance both understanding and aesthetic experience. Yet, recognizing these lines can pose challenges, particularly for those without formal training in art or photography. While saliency maps have been widely used to identify prominent regions in visual content, their conventional scalar representations fail to capture the dynamic flow of visual attention. To address this, we present a visual analysis system that combines discrete Morse theory with refined saliency maps utilizing persistent homology. By transforming gradient fields into structured maximum graphs—streamlined subsets of Morse–Smale complexes—our system identifies both explicit and implicit leading lines in paintings and photographs. In addition, texture gradient cues are integrated to introduce depth perception, accounting for spatial hierarchies in visual compositions. Advanced features, including semiautomatic thresholding via the elbow method and tools for visualizing the directional flow of gaze, offer a dynamic and efficient approach to understanding visual guidance. An experimental validation was conducted at Joshibi University of Art and Design, Tokyo, analyzing Western artworks from the 17th to 19th centuries, including Baroque, Rococo, Romanticism, and Impressionist styles. Comparisons between system outputs, manually drawn leading lines, together with eye-tracking data demonstrated remarkable alignment, underscoring the system's effectiveness. Participants praised the system's usability and interactive graphical representation, though refinements such as customizable thresholding processes remain a promising avenue for future improvements.

S2 **Style perception with fragments of oil paintings**

Yuguang Zhao[1], Jeroen Stumpel[2], Huib de Ridder[3], Maarten Wijntjes[3]
[1]TU Delft, Netherlands
[2]Utrecht University, Netherlands
[3]Delft University of Technology, Netherlands

Usually, people would think connoisseurship requires professional knowledge of art history and years of experience. How would laymen judge and perceive depiction styles? Most existing style studies used whole paintings as stimuli. However, if style is how something is depicted, what is depicted can act as a confounding factor. We found a solution by isolating a single motif, an apple, from various oil paintings. By zooming in on this timeless object, we could minimize the influence of composition and other contextual information from the scene. We tried to quantify the implicit concept of style from the angle of visual perception. In two experiments we tackled two fundamental questions: the existence and the description of style. 48 cut-outs of western oil paintings were used, covering a wide range of region and creation time. 415 participants completed online triplet similarity tasks for Experiment 1, resulting in a non-random 3D perceptual space via multidimensional scaling (MDS) analysis. The results suggest that participants (probably without art knowledge) are able to judge stylistic difference from fragments of paintings. In Experiment 2, we fitted color statistics and attributes such as brush coarseness, glossiness, smoothness and convincingness to further understand the space quantitively. Dimension 1 is associated with spatial attributes (Smoothness, Brushstroke coarseness) and Convincingness. Dimension 2 and 3 are related to Hue and Chroma, respectively. The results suggest that texture and color are essential variables for style perception. And style can be perceived without higher levels of information such as composition and context.

S2 **Free, easy , bold, soft? Connoisseurship and the evolving science of visual analysis.**

Anna Miscena
University of Vienna, Austria

The emergence of the term “connoisseurship” is traditionally placed in the 18th century, although its practice pre-dates the codification of art history as a scientific discipline. Central to its development was the figure of the connoisseur, a mediator between artist and viewer whose trained eye, refined through extensive visual comparison, could discern nuances of style, composition, and technique. This method became foundational to formalist art history, serving not only as a tool for attribution and dating but also for evaluating aesthetic preferences and shaping qualitative judgments of taste. While visual analysis remains a component of expert practice in specific contexts within museums, galleries, and auction houses, its role has diminished as new methodologies take over. As these redefine how artworks are attributed and evaluated, they also introduce

new interpretations of key art historical concepts. What do experts across disciplines mean by terms such as "style" and "composition"? How do connoisseurs, art historians and computer scientists apply these categories, what for, and what is lost in translation? This paper examines contexts in which visual analysis continues to play a crucial role while acknowledging the evolving methodologies shaping the perception and study of images. By interrogating the shifting definitions and applications of formal categories, it aims to bridge disciplinary perspectives and assess the implications of technical change for the field of art history.

S2 **Looking with Weirdness: Computer Vision as a New Technique of the Observer**

Benjamin Zweig
Columbia University Libraries and Pratt School of Information, United States

This paper addresses some of the pitfalls in computer vision's application for the history of art: the overreliance on some art historical methods while under reliance on others. The fact is not all art historical methods are applicable for computer vision. The application of connoisseurship in particular, and its emphasis on analyzing the formal characteristics of art, as something possible for computational practice is now well theorized. But its practical utility is still questionable, and those art historical figures that have been highlighted frequently in discussions on computer vision and art, such as Heinrich Wölfflin and Giovanni Morelli, have more often than not been used as nearest-neighbor art historical analogues that try to reify computer vision's own methodological assumptions. What, then, if we view the use of computer vision not as operationalized art historical method but as something different - something weirder or unheimlich. That is, what if we think of the computer not as assuming or replicating the human connoisseurial mode, but as providing a uniquely twenty-first century "technique of the observer," in Jonathan Crary's famous words, that is ushering forth a new but as presently ill-defined type of critical formalism. As such, this paper argues that both computer scientists and art historians might not be better off trying to merge directly or neatly traditional models of connoisseurship and other art historical models with computer vision, such as Wölfflin and Morelli. Instead, both scholarly practices should think about what might be emerging, and computer vision's application for the history of art, as a new "optical apparatus" that is the most recent iteration of a long line of historically-situated technologies affecting both scholarly and broader cultural understandings of vision.

Talk sessions

Talk session #1
Making Art (more) Accessible: From Individual Differences in Perception to Inclusive Aesthetic Experiences

Thursday August 21, 2025 16:30-18:00
Chair: Chia-huei Tseng

Engaging with art is undoubtedly a meaningful and important activity for art lovers. Yet, for many people art is a distanced, alien world, due to cultural norms, museum practices, disabilities, and more. In this session, three empirical studies will report how labels and exhibition models can influence engagement with art, while a Museum Reinhard Ernst curator will explain how the museum aims to create the most engaging experience for each visitor. Two artists will describe how through creating multi-sensory artworks, visual art can become accessible for those with visual impairments, and interact with the space and those who live around art day by day. The session will end with a short conversation on stage.

T1 **More than a museum: Focusing on art experience at the Museum Reinhard Ernst (mre)**

Eva Authried
Museum Reinhard Ernst, Germany

This lecture provides an overview of the museum's approach to art education. In the foyer, visitors are welcomed with the guiding principle of the founders, Reinhard and Sonja Ernst, which also sharpens and aligns our educational work: 'This house belongs to art and art belongs to everyone'. Our goal is to ensure that every visitor experiences the museum space and the artworks on display emotionally and in a sustainable way. Every development process for new educational programmes therefore begins with a question: How can we best reach the audiences or a specific target group? What are their needs? How can we then create the best possible experience for our visitors to engage with the artwork? In order to prioritise experience over pure education, we at mre have also decided to develop and use digital solutions. Our educational space, the 'colour lab', offers six stations where visitors can experiment with colour, space, and their own body movement. Children, young people and adults can reflect on what they saw in the exhibitions through physical experience and express their artistic creativity. Mediating instead of educating, engaging instead of developing – we look forward to an interesting and inspiring discussion about the usage of visual science in the field of art education.

T1 **Seeing art like a child: Visual attention and the role of labels in museum engagement**

Francesco Walker
Leiden University, Netherlands

Children learn about art by actively engaging with their surroundings, making museums powerful spaces for learning and development. Yet, the descriptions accompanying artworks are typically designed for adults, often overlooking the needs of younger visitors. How does this affect children's engagement with art? Do they perceive paintings differently from adults, and can more tailored descriptions enhance their experience? In this talk, I will present novel findings from research conducted in collaboration with major Dutch museums, including the Van Gogh Museum and the Rijksmuseum – the national museum of The Netherlands. By sharing eye-tracking data collected in naturalistic museum settings, I will highlight key differences in visual attention between younger and older visitors, and show how museum labels shape the way children view the paintings on display. By uncovering these attentional patterns, I will explore practical strategies for making museum storytelling more inclusive and engaging for diverse audiences. Ultimately, I will show how partnerships between museums and academic institutions can drive evidence-based improvements in visitor experience, opening new pathways for art education and exhibition design.

T1 **Real, Virtual, Passive: The Effect of Exhibition Modality on Art Perception and Appreciation**

Christopher Linden, Johan Wagemans
KU Leuven, Belgium

In recent years, many museums have expanded the online accessibility of their collections. For some, this includes more extensive and detailed information about the artworks, accompanied by static photos. For others, the websites host virtual tours of exhibitions, ostensibly allowing heightened immersion. We sought to investigate how immersive such online virtual tours actually are, in direct comparison to both static images of artworks and visits to the real exhibition space. We also explore the impact that these modes have on viewers' art perception, as measured via mobile eye-tracking (MET), and art appreciation, as measured via questionnaire responses. To assess these aspects, we developed a follow-up to a free-exploration MET study of the Pieter Vermeersch exhibition held at M Museum, Leuven, in 2019, in which we previously collected MET data from 78 participants. M currently hosts an online virtual tour of this exhibition, with 360º views of the gallery space from multiple perspectives. In the current study, 74 participants freely explored this virtual exhibition, while in a second, passive, viewing condition, 75 participants were shown still images of the exhibition and its artworks. Presentation order and timings of the passive condition were matched to the median data of our original, in-person study. All participants had their gaze tracked with MET, and finally completed

questionnaires about their experience, the artworks, and the exhibition as a whole. Preliminary results indicate passive participants considered the experience more negatively, yet found the artworks to be more beautiful, interesting, and meaningful than virtual tour participants. This may reflect a tension between the less engaged modality, yet higher fidelity images, of the passive sequence. When compared to the original, in-person study, both passive and virtual tour participants considered the exhibition to have less aesthetic merit than real exhibition visitors.

T1 **Invisible Experience – Perceptual Experiments between Space and Material**

Holger Schmidhuber
Studio Holger Schmidhuber, Germany

My artistic research explores space, materiality and absence through the work cycles Carpets of the Forgotten and Black & White Inversions. In the Carpets of the Forgotten cycle, the oriental carpet as a cultural artifact is integrated into a painterly process. The carpets, up to 100 years old, bear gestural overpaintings and typographic statements from my own lyrical sources. These works challenge multidimensional perception: they can be walked on, experienced haptically, and interact with the space. The viewer lives with the work, moves on it, lies or walks upon it, resulting in a physical connection to memory and material. The cycle Black & White Inversions explores invisibility and the limits of perception, inspired by black holes. The works address the paradox of emptiness and the dissolution of space and structure. In this series, I confront painting with printed elements generated by design tools and various AI systems. All of it culminates in a state of hyper-complexity on the canvas. The Black Inversions reflect the loss of structure and the reversal of space and time, while the White Inversions illuminate the unseen and the tension of what is yet to manifest. Both cycles feature a dual mode of perception—daytime and nighttime—through the use of phosphorescent pigments. In darkness, some areas vanish while others glow, shifting what is visible and creating an ephemeral dimension. This play of presence and absence challenges the viewer's perception. Fragmentary textual layers invite conceptual engagement without offering fixed interpretations. In my talk, I will present these cycles through images and video, connecting them to current discourses on perception, materiality and embodied experience. I will explore how material, space and physical interaction influence perception—and how these works function as sensory experiments between art, science and individual experience.

T1 **Guiding the Gaze: How Label Content Shapes Visitor Engagement in Art Museum**

Zsofia Pilz
PhD Candidate, Germany

Art museums attract diverse audiences with varying levels of art knowledge and require information tools, such as labels, to enhance visitor engagement and understanding. This study examines how different types of labels influence the visitor experience at the Rijksmuseum in Amsterdam, focusing on Dutch Golden Age paintings. Two types of labels were evaluated: traditional labels highlighting specific painting details and historically focused labels highlighting colonial themes. A control condition with no labels was also included. Using eye tracking, interviews, and subjective emotional ratings from 63 participants, the results show that label content significantly affects visual attention and engagement. Detail-oriented labels drew visitors' attention to specific areas, but limited further exploration. The study highlights the importance of tailoring label design to thematic relevance and audience characteristics. These findings offer practical insights for museums seeking to create engaging and thought-provoking labels.

T1 **Re-imagining the Visual Encounter in Art: Expanding Perception through Linguistic and Multisensory Engagement**

Aska Gough
AskaArt, United Kingdom

Across Europe, over 30 million people (about 1 in 30 individuals) are blind or partially sighted (European Blind Union, 2023). Neurodivergent individuals comprise an estimated 15–20% of the global population (Hedrick, Yi and Asplund, 2024). Despite this, many cultural institutions continue to present significant access barriers. VocalEyes (2023) reports widespread gaps in provision for blind and partially sighted visitors, pointing to lack of inclusion and an underexplored opportunity: to reimagine how art can be encountered. As a mixed-media artist, I work with organic and synthetic materials (bark, crystals, minerals, and resin) to create abstract, highly textured artworks to be experienced through vision and touch. My practice explores material contrasts, their subtle energetic properties, and symbolic meaning. With a background in translation studies, I am developing a concept for an AI-assisted, multi-voice audio-description system. My work is informed by research that reframes blindness and neurodivergence not as deficits but as valuable perceptual lenses. Kleege (2018) argues that blindness offers insight into the multisensory nature of art, while Hayhoe (2017) shows how blind visitors connect with artworks through proximity, narrative, and embodied interaction, calling for a move beyond visual norms. In this presentation, I will share insights from my practice and invite interdisciplinary collaboration to develop art experiences that speak not only to the eye but also to the hand, the body, and the resonant potential

of words. References • European Blind Union (2023). Facts and figures about blindness and visual impairment in Europe. https://www.euroblind.org • Hedrick, R., Yi, R., & Asplund, J. (2024). Neurodiverse workers: Hidden challenges, untapped potential. Gallup. https://www.gallup.com/workplace/659618 • VocalEyes (2023). Our mission. https://vocaleyes.co.uk/about/our-mission • Kleege, G. (2018). More Than Meets the Eye: What Blindness Brings to Art. Oxford University Press. • Hayhoe, S. (2017). Blind Visitor Experiences at Art Museums. Rowman & Littlefield.

Talk session #2
Variety, variety, variety!

Friday August 22, 2025 9:15-10:15
Chair: Uwe C. Fischer

This session will celebrate artistic variety! In terms of media, speakers will address photography, painting and fashion, taking us through from Baroque to the Contemporary era while cross-cultural artistic preferences will be evaluated. An artist talk will present how through various techniques, forgotten black and white images can be transformed into contemporary paintings. One talk will cover a range of empirical studies looking into the everyday aesthetics of fashion choices, considering individual, social, and contextual factors. A cross-cultural study will underscore the joint influence of cultural context and psychological traits in shaping emotional engagement with visual art beyond Western traditions, while in the last talk an art historian will consider how gaze directions were used as a compositional device by Rembrandt and his contemporaries.

T2 **Aesthetic Emotions Across Cultures and Traits: Insights from the BEWAD Aesthetics Database**

Mounia Ziat[1], Clifton Chow[1], Ahmad Aljanaideh[1], Khamaroddin Shekh[1], Purva Sahebrao Khandekar[1] and Claus-Christian Carbon[2]
[1]Bentley University, United States
[2]University of Bamberg, Germany

We present new findings from the Bentley Eastern-Western Aesthetics Database (BEWAD), a growing open-access resource for cross-cultural research in empirical aesthetics. A total of 772 participants from diverse cultural backgrounds were recruited via Amazon Mechanical Turk and rated 1,850 paintings using the Aesthetic Emotions Scale (AESTHEMOS), which captures 21 distinct emotional responses. The BEWAD portal (http://bewad.bentley.edu) enables users to explore responses interactively, with filters

by region, country, artist, or year and semantic charts summarizing each painting's emotion profile. To examine cultural influences on emotional responses to art, we conducted LMMs for each emotion, with participant as a random effect. After applying FDR correction, two emotions showed trend-level differences by painting origin: Interest was lower for Eastern paintings, $b = -0.055$, $SE = 0.020$, $t(1710) = -2.75$, $p = .0059$, $pFDR = .09$; Sadness was higher, $b = 0.050$, $SE = 0.019$, $t(1710) = 2.59$, $p = .0095$, $pFDR = .09$. Participants also completed personality and cognitive measures (Big Five Inventory–10, Need for Closure Scale (NFC), and Tolerance for Ambiguity Scale). Closed-Mindedness (NFC) predicted stronger emotional responses across Awe, Energy, Humor, Insight, Joy, Sadness, Surprise, and Vitality, while Predictability (NFC) showed consistent negative associations with emotional intensity ($p < .001$). Valuing Diverse Others (Ambiguity scale) was linked to reflective emotions including Fascination, Enchantment, Insight, Joy, and Intellectual Challenge. Openness to Experience (BFI-10) predicted heightened responses to Awe, Energy, Sadness, and Uneasiness. These findings underscore the joint influence of cultural context and psychological traits in shaping emotional engagement with visual art. They also highlight the importance of expanding empirical aesthetics beyond Western traditions. BEWAD offers a valuable platform for inclusive, cross-cultural exploration of aesthetic experience. We invite researchers to contribute to and make use of BEWAD to broaden the empirical foundations of aesthetics research.

T2

Katya Granova's artist talk

Katya Granova
Independent artist, Germany

My presentation will be structured as an artist talk, with the addition of critical reflections on art, stemming from my psychological background. In my practice, I make paintings using old, anonymous black-and-white photographs as conceptual and emotional starting points. These images—sourced from flea markets, family archives, or found materials—are never reproduced directly but serve as catalysts for a gestural, bodily, and intuitive response. I see my large-scale canvases as portals into forgotten moments of the past. I'm not driven by nostalgia; rather, my work reclaims what has been overlooked, bringing life and attention to lost histories through my gestural presence. I aim to animate the past, restore visibility to personal stories erased from dominant narratives, and offer them renewed value. In the first part of my talk, I will share a selection of my works and discuss how scale, gesture, and materiality shape my approach. The second part will reflect on painting as an embodied process. Drawing on my background in psychology, I consider painting a mode of inquiry—an act of perception, memory, and emotion. I will reference philosopher Maurice Merleau-Ponty, whose writings on embodiment and visual experience inform my thinking. His perspective helps me frame painting not simply as image-making, but as a way of being present in the world. By combining visual documentation of my work with theoretical reflection, my presentation

aims to contribute to interdisciplinary conversations around perception, memory, and the embodied experience of making and viewing art.

T2 **The everyday aesthetics of fashion: The individual, social, and contextual factors underlying everyday clothing choices**

Young-Jin Hur
London College of Fashion, University of the Arts London, United Kingdom

While fashion is one of the most commonplace and accessible aesthetic activities, the literature on empirical aesthetics presents a fairly scant picture of fashion preference and its predictors. In this talk, I will provide an overview of this topic, supplemented by a series of empirical studies. First, I will introduce the preference structure of clothing styles, referred to as the Everyday Clothing Preference Factors (ECPF), and discuss the roles of personality (e.g., Big 5), demographics (e.g., age and gender), fashion-related variables (e.g., the perceived function of clothing), and culture (i.e., the UK vs. the USA) in shaping everyday clothing choices. This section will draw on published works by Hur, Etcoff, and Silva (2023) and Hur, Segal, Etcoff, and Silva (2025). Next, I will present several ongoing research studies examining contextual factors that influence clothing preferences, such as the attractiveness of the wearer's face (in the context of rating visual images of dresses), experimentally manipulated prior exposure to particular garments, and situational expectations.

T2 **Looking at looking; Gaze direction as a compositional devise in the age of Rembrandt**

Jeroen Stumpel
Utrecht University, TU Delft, Netherlands

There has been much research on the perception of gaze-direction, both in real life situations and in photographs. Less attention has been paid to the mechanisms for detecting gaze direction when looking at people in pictures, and the role our sensibility for gaze directions may play both in the construction and in the appreciation of pictorial compositions. In drawing and painting, the artist must deal with a reduced and abbreviated world. It appears that the detection of (fictive) gaze direction in pictures is extremely robust and yet relies on just a couple of basic diagrammatic schemata. In the history of European art, from the sixteenth century onwards, one often-mentioned trick was the use of what was called 'the egg and the cross'. This practice was employed in the training of young artists, as well as in the sketches and quick studies of established masters. Basically, it combined the position of the surrogate pupil with the tilt of the head. Interestingly, the technique not only yielded results for individual figures and heads, but potentially also for compositions with several figures. Especially in the work of Rembrandt (both in

drawings, etching and paintings), we see how he quickly learned to use indicated gaze direction as a means to unify a scene pictorially, in a kind of intuitive form of applied psychology. Strikingly different from his teacher Pieter Lastman (who made his heads look in very different directions in one and the same painting), he carefully arranged his painted actors in such a way that we immediately seem to be aware of a common focus of attention of the figures. This topic will be discussed with reference to a number of paintings and drawings by Rembrandt and others, sometimes using comparisons with visually manipulated versions of such works.

Talk session #3
Vision Science of Art and Aesthetics: Past, Present and Future

Friday August 22, 2025 16:30-18:00
Chair: Hong Nguyen

Art and aesthetics have long served a fertile ground for human creativity, scientific study and thought. This session will tackle some of the big questions of past, present and future years. Looking back, some of the obstacles Gustav Fechner faced in his empirical studies, and the role of the line, which existed since prehistoric art, on art processing will be discussed. Focusing on the present, speakers will introduce basic assumptions and presumptions of psychology of art, and a new model describing how gestalts link aesthetic preferences to perceptual analysis. Looking into a possible future of art creation, an empirical study will discuss definitions of AI-created art. Lastly, leading into the business meeting, the last talk will present insights from 13 years of the Visual Science of Art Conference.

T3 **Gustav Theodor Fechner, the Holbein Controversy, and the Birth of Empirical Aesthetics**

Ronald Hübner
University of Konstanz, Germany

Gustav Theodor Fechner (1801-1887) became famous as the founder of psychophysics. Less well known is his role as the father of empirical aesthetics. He not only pioneered this field by introducing suitable methods that are still used today, but also by collecting the first empirical data to answer aesthetic questions. Specifically, he conducted the world's first experiment on aesthetics in 1871 during an art exhibition in Dresden. The main aim of this exhibition was to determine which of two famous paintings, both depicting

the so-called "Madonna of Jakob Meyer zum Hasen", could be attributed to the painter Hans Holbein the Younger (1497 - 1543). Fechner's data collection, however, focused exclusively on the question of which of the two Madonna paintings is more beautiful. In my talk, I will describe the historical circumstances that sparked Fechner's interest in the Holbein controversy and his motivation to use this opportunity to collect preference judgments. From both today's and Fechner's perspective, the data collection and its results were disappointing. Fechner suspected that this was partly due to the influence of the all-dominant Holbein controversy. What results would Fechner get today? To answer this question, I conducted a study comparable to Fechner's, but using modern methods. The results differ from those of Fechner, but show that his concerns were partly justified.

T3 **Lines that think: When the brain draws before the hand**

Peggy Gerardin
University of Lyon 1 UCBL, France

The line does not exist in the real world. No object, no landscape comes naturally outlined with a black stroke. And yet, our brain draws lines everywhere: to see, to understand, to represent. The line is a sophisticated mental construction, a perceptual tool that allows our visual system to give form, depth, and meaning to what surrounds us. From prehistoric cave paintings to contemporary visual experiments, artists have long exploited—often intuitively—the very principles of visual processing: economy of stroke, contrast, perspective, hatching, symbolism. The intersection between these artistic practices and neuroscientific insights offers a fresh perspective on the mechanisms of perception. Through the observation of artworks focused on line, this talk will explore how line perception emerges from a cascade of neural processes, from the retina to the visual cortex, structured through hierarchical integration. Orientation-selective neurons, luminance processing, the "What" and "Where" visual pathways—these are just a few of the cerebral systems that cooperate to build, within milliseconds, a coherent and actionable representation of the world. We will examine how the line functions, and identify the neural correlates currently considered as candidates for its construction. An invitation to draw… from inside the brain.

T3 **Assumptions and presumptions in Psychology of art, and the role of historical and empirical research**

Daniele Zavagno
Università di Milano-Bicocca, Italy

Looking at works of art, psychologists, neuroscientists and even MDs often notice aspects that seem to enlighten the nature of certain formal and/or content choices made

by artists. Based on these aspects, which most of the time have circumstantial value, and sometimes with the support of doubtful historical evidence, they then proceed to explain the motives behind those choices, deeply convinced that their assumptions or presumptions are instead facts. However, if not supported by a careful historical investigation and/or by data obtained through experiments aimed at testing underlying hypotheses, the explanations turn out to be futile games, potentially harmful to a correct psychology of art, with mere conjectures passing off as facts. Some classic and other more recent cases will be briefly discussed, showing how both historical and empirical research can dismantle some conjectures, and sometimes come in support to alternative hypotheses. Nonetheless, even the latter, for how appealing, sound or solid they may appear, still lay within the realm of hypotheses, unless strongly supported by historical documents and/or by the artist's own testimony. But ultimately, this is one of the most intriguing aspects of art: everyone is free to interpret and explain a work of art for themselves and to find within that exercise a reflection of their own 'motives' in doing so.

T3 **Gestalts Relate Aesthetic Preferences to Perceptual Analysis: An update of the GRAPPA project**

Johan Wagemans
University of Leuven (KU Leuven), Belgium

At VSAC 2023, I presented a preview of my ERC Advanced Grant on how Gestalts Relate Aesthetic Preferences to Perceptual Analysis (GRAPPA), aimed at developing and testing a model predicting, explaining and understanding human preferences for images (natural scenes and artworks). Two years later, I can report the progress on the different studies conducted in the meantime, some achievements, obstacles, and remaining challenges. The general approach is to start from a machine learning model that is enriched by our insights into the role of perceptual organization in the human perception and appreciation of images. The research program is divided into several work packages, employing a variety of methods and techniques. Regarding the modelling, (1) we have developed a multi-task convolutional neural network for image aesthetic assessment (IAA), (2) we have used explainable AI to unveil the factors determining aesthetic preferences, (3) we have developed CHARM, a plug-in for Vision Transformers that preserves Composition, High-resolution, Aspect Ratio, and Multiscale information, (4) we have conducted a theoretical and computational analysis of transfer learning between group level and individual level image aesthetics assessment (GIAA and PIAA), and (5) we have developed BackFlip, a new local technique for data augmentation that is beneficial for artistic IAA. Regarding the behavioral work, we have conducted extensive online studies to obtain (1) solid aesthetic rating data on art images for GIAA and PIAA (LAPIS), (2) judgments of symmetry and composition in images of natural scenes and artworks, and (3) comparisons between WikiArt images (containing several distortions) and improved counterparts from museum websites. In addition, we have registered eye-movements from participants looking at paintings and art photographs, and we are

developing an annotation tool to obtain more qualitative data on the role of different types of Gestalt grouping in a subset of our images.

T3 **Empirical Evidence for a New Category: AI Art as a Distinct and Controversial Form of Art**

Gregor Hayn-Leichsenring
University Hospital Jena, Germany

"AI art" has been discussed in the art world, the media, and research for some time. It is not yet clear how AI art should be positioned in relation to other art. This study follows a terminological approach. A working definition of the term "artwork" can be developed by examining it from multiple conceptual perspectives (or intensions). Intensions refer to the internal concept that constitutes a formal definition. Traditionally used intensions for the term " artwork" are intentionalism, qualitivism, institutionalism, functionalism, essentialism, and historicism. Due to the philosophical nature of the term, none of the intensions is a necessary characteristic for artworks—however, all can be sufficient characteristics. Modern artworks, in particular, do not fulfill every intension. 521 participants completed a questionnaire to determine their views on the intension of the term "artwork". They then classified 100 objects from various classes (AI objects, paintings, sculptures, literature, music, etc.) as "artwork" or "not an artwork". Overall, AI items were categorized as artworks in 60% of the cases. AI items showed the strongest effects of beliefs on intension. Participants who endorsed functionalism, essentialism, and historicism more often categorized AI items as artworks. AI items were the only class that showed negative correlations with other classes. E.g., people who were more likely to categorize AI items as artworks were less likely to classify musical, literary and architectural items as artworks. Regarding personal characteristics, AI items were more often categorized as artwork by religious people, musicians, and people who view artworks as physical items rather than mental items. In summary, this study shows that beliefs about art and participants' individual characteristics influence whether individuals agree with the assumption that artworks can be created using AI. In conclusion, this study provides empirical evidence that AI can produce a distinct and controversial form of art.

T3 **Becoming a teen: Retrospective and Future Prospects of VSAC after 13 Years Being the Internationally Renowned Conference for the Interaction of Art and Perception**

Claus-Christian Carbon
Department of General Psychology, University of Bamberg, Bamberg, Bavaria, Germany, Germany

The Visual Science of Art Conference (VSAC) was initiated by Baingio Pinna as a satellite conference of the European Conference on Visual Perception (ECVP) in 2012, so 13 years ago. The Alghero meeting was probably the first conference worldwide that brought specifically scientists from the domain of visual perception together with artists and art topics. This pioneering idea established itself as an annual conference with a sophisticated and lively artistic and cultural program. When people become teenagers, they usually hardly look back on their past years, but look forward with confidence and excitement to the years to come. Parents and relatives, on the other hand, reflect on this and try to make the best of their children. In this paper, I will look back and present statistics on the approaches used, the methods employed, the ways in which artists and scientists interacted. Over the years with 871 contributions in sum, we saw about huge variety of topics and methods employed. From theoretical contributions to classical experimental work utilizing eyetrackers, EEG, EDA, and fMRI to nowadays more and more often used online- and VR/AR-studies. With an average of 61.4% experimental approaches of all contribution, the ECVP's lineage is still recognizable, but many new contribution formats are also growing beyond this legacy, creating VSAC's special flavour. On basis of some insightful statistics on the conference's contributions and activities, I will visionize about the conference's future and how interdisciplinary research as such and joint publications of artists and scientists are possible. Essentially, we have to create an optimal ecosystem where we can systematically expand the knowledge about art in particular and aesthetics in general through scientific methods, contributions from artists, and insights from viewers.

Talk session #4
Art and Aesthetics: Visual Perception and Beyond

Saturday August 23, 2025 9:15-10:15
Chair: Marella Campagna

Inherently, the Visual Science of Art Conference focuses on the visual aspect of art processing. However, to what degree can we isolate this modality from other sensory modalities? In this session speakers will explore inter-modal interactions. Scientists will describe how auditory and haptic cues interact with vision to create encompassing art experiences: from touching sculptures, to savouring immersive audio-visual installations, while artists will describe how they orchestrate melodies based on images and videos and aim to transcend their audience through multisensory art performances.

T4 **Visual Art, Spoken Voices, and the Physiology of Preference**

Lauren Fink, Maya Flannery, Shreshth Saxena
McMaster University, Canada

Can eye-tracking or cardiac signals predict aesthetic preferences? How consistent are physiological responses to specific artworks across viewers? Does spatialized audio shape behaviour in the gallery? We addressed these questions in a collaboration between scientists and visual artist Tania LaCaria. Her collection, VOICES (That's What She Said), was presented as an immersive audio-visual installation at McMaster University's LIVELab during a city-wide Arts Week. Eight paintings were paired with spatialized recordings of women's voices. Visitors encountered all voices simultaneously, creating a layered, chaotic soundscape that asked: Whose voices do you pay attention to? The exhibition ran for two days, drawing over 200 attendees; 70 participated in our research (mean age 46±18 years). Using our fleet of mobile eye-tracking glasses and custom-programmed smartwatches, we recorded gaze, heart rate, and movement as participants explored freely. Upon exit, they completed a brief survey on aesthetic preference. Participants' frequently described the exhibition as "emotional, beautiful, powerful, empowering." Individual preferences were influenced by the meaning of the spoken words, followed by color and structure of the paintings. However, there were strong individual differences: the most preferred painting was chosen by just 30% of participants. Influence ratings, along with age and identity factors, explained a modest portion of preference variability. Whereas our prior work showed music can enhance engagement with visual art (Fink et al., 2024), this study replaces music with spoken voices—introducing semantic and social content that modulates meaning and preference. Ongoing analyses (to be presented in August) examine how physiological signals—gaze dynamics, cardiac reactivity, and body movement—relate to preferences and the audiovisual and social features of the gallery. This work demonstrates the feasibility of large-scale mobile eye-tracking and cardiac monitoring in real-world cultural settings (Saxena et al., 2025; Flannery & Fink, 2025) and contributes to the growing field of empirical aesthetics in naturalistic environments.

T4 **Generating Melodies Based on Images and Video**

Viktor Khachtchanski[1], Marina Magidovich[2]
[1]independent, Finland
[2]independent, Russia

The paper summarises the main aesthetic concept and technical principles of the computer program 'Buddha Orchestra-23', written by programmer and artist Viktor Khachtchanski, with the participation of PhD in Art Theory, full professor Marina Magidovich, and support from composers J. Byron Wise and Yannis Ramos. The original goal of 'Buddha Orchestra' was creating music based on images, like photos of the author's own paintings, or any other work of visual art. The software analyses

the source image to find shapes of similar brightness. A contour line of each shape becomes a route of a moving point, vertical position of which defines pitch of a note. Generated notes are sent to connected musical synthesizers. The most recent version of software can also use videos as a source. The logic of the software can be adjusted to follow human visual perception. To achieve this, the computer shall be equipped with an eye tracker that captures the viewer's gaze, position of which will control melody generation. Such an arrangement would turn the viewing of a visual art into an interactive performance for the viewer, and at the same time can be used for research purposes in perceptual psychology and cognitive science. The authors are currently working in this direction. Technical details Buddha Orchestra is free and open source software. The software can be downloaded from Viktor Khachtchanski's website https://victorx.eu. The software is written in Python. It uses the OpenCV library to analyse the original image and search for objects in it. Graphical user interface uses PyQt6. This makes it possible to use the same code in Windows, Linux, and MacOS.

T4 **Between Sensing and Being: Embodiment in Performative Arts**

Mariana Malta
Independent artist, United Kingdom

This talk explores the intersection of performance, vulnerability, and self-exploration, and its reverberations through my multidisciplinary work, which redefines the body as a space for catharsis, transformation, and emotional ambivalence. Drawing from my personal experiences, I delve into the complex relationship between trauma, shame, and self-liberation, using the body both as a canvas and a portal. Here, societal taboos and insecurities are confronted and reimagined through a "bittersweet" aesthetic lens. Immersing myself in discomfort allows me to engage in personal transformation while inviting the viewer into an intimate dialogue with their own vulnerabilities. My work is a visceral exploration of the tension between attraction and repulsion, comfort and the courage to face fear, with performance as a means to confront these contradictions. As Jeanette Fischer reflects on Abramovi 's work, "Pain gives a name to fear and fear a meaning to pain." Performance becomes a powerful tool for engaging the viewer at a deeper level. The audience is invited into a space where the boundaries between artist and viewer dissolve, forcing them to confront their own feelings of discomfort, fear, and vulnerability—without escape. This immersive experience creates a dialogue between my inner journey and the viewer's emotional landscape. In my performances, I aim to invoke the sublime, using embodiment to create an experience of overwhelming sensation that challenges, expands, and potentially transforms human experience and our relationship with our bodies and inner selves. My work embraces the contradictions of human existence and highlights the cultural and social forces shaping our understanding of shame, beauty, and self-realisation, while providing a therapeutic space for reflection, liberation, and connection as we navigate the complexities of human struggle.

T4 **Synaisthesia and the social sculpture of Now.**

Ida-Marie Corell
Independent artist, Germany

Living with entangled senses in anaesthetic times. Sense up your life! More Sense Less Nonsense! Synestheisa. Syn derives from the Greek meaning together and Aistheis is something like the perceptional mother - as in perception in general or the all sense perception. Synaisthesia (my form of writing) means something like living and perceiving with entangled senses. When colour sings, and music paints, and words dance, when pain tastes and taste brings olfactoric wonders.| Social Sculpture of Now, "Social sculpture" " is a term coined by Joseph Beuys, describing the thinking process, the thought patterns appearing and shaping the behaviour of the one who thinks, as invisible material which changes the thinker and his/her surrounding society through language, word, act, presence, attention, and creative action, hence shaping the world around the one who thinks and acts. The Now, the materialistic, physical, collective moment, this very moment is the home of syn, aisthesis and social interweavings. The entire past and the seemingly infinite future, that what we perceive and that what we do not perceive is just like vacuum-packed in a tin can or synthesized in a seed, the seed of the one present moment, the seed of Now, the distilled drop-shaped essence of that what is, was and can be.

T4 **Is sculptural art better left untouched? Tracking the gaze during visual and tactile exploration of sculptural art**

Eleftheria Pistolas, Johan Wagemans
Laboratory of Experimental Psychology, Department of Brain and Cognition, University of Leuven (KU Leuven), Belgium, Belgium

Traditional museum practices often reinforce visual engagement, reflecting a general emphasis on visual dominance in human perception. However, sculptures also afford opportunities for more embodied interactions, such as tactile exploration and movement around the artwork. Building on theoretical work highlighting the intimate and active qualities of tactile interaction, as well as the visual potential sculptures allow the perceiver to experiment with using the attention-drawing parabolic lines of sculptures, this study investigated the dual appeal of sculptural art: its materiality and its multidimensionality. In an exhibition-based experiment, participants (N=52) alternated between exploring sculptures through touch from a fixed viewpoint or visually by moving around them while wearing eye-tracking glasses. This within-subjects design allowed us to examine the contributions of tactile intimacy and visual interactivity to the aesthetic experience. Our results indicated that sculptures were rated as more beautiful during visual trials than tactile trials, though we found no difference in pleasure ratings and marginally higher interest ratings for visual trials compared to tactile trials. The eye-tracking data suggests participants exhibit more fixations during visual trials compared to tactile trials,

although a confounding factor may be the longer time spent on visual trials. In terms of fixation durations, we found shorter fixations during visual trials compared to tactile trials. The areas of interest on which fixations were mapped included outer edges, inner edges, surface, pedestal and elsewhere. We found that participants overall fixated the most on the outer and inner edges, showing support for the notion that parabolic lines in sculptures draw attention. In addition, participants fixated significantly more on the surface of the sculpture during tactile trials compared to visual trials. In short, our results suggest that visual exploration encourages the interplay with visual potential, whereas tactile exploration seems to draw more attention to the materiality of sculptural art.

Talk session #5
Visual Aesthetics: From Fractal Noise, Through Images, to Complex Scenes

Saturday August 23, 2025 15:00-16:00
Chair: Lisa Kossmann

This session will dive into inherently visual questions of what feeds into people's artistic and aesthetic preferences. It will move progressively from studies using fractal noise, through images, ending with complex scenes. Presenters will explore the effect of symmetry and complexity on universal and individual-specific evaluations, the physiological basis of visual aesthetics at the level of energy consumption by the visual system, the impact of details on the visual inspection of art photographs and paintings, and what shapes visuo-locomotive experiences, encompassing perception, attention, and movement in dynamic settings.

T5 **Perceptual and affective evaluations of fractal noise images varying in complexity and symmetry**

Branka Spehar, Daniel Thierry, Matthew Digges
UNSW Sydney, Australia

The field of empirical aesthetics has long been divided over whether aesthetic preferences are best understood as universal or as individually and culturally specific. Persistent focus on either universal canons or highly variable individual differences reflects these opposing perspectives. Recent efforts to reconcile these views have increasingly emphasized the variability in aesthetic and preference judgments. However, the characteristics and sources of individual variation remain poorly understood. Similarly, while both consensus and variation in preferences for different image features have been studied, they are

often examined in isolation, leaving limited insight into their interaction. To address these gaps, we investigated aesthetic evaluations of fractal noise images varying in complexity and symmetry. Participants rated the images on two measures of perceived image structure (complexity and regularity) and three aesthetic dimensions (preference, interest, and relaxation). We analyzed both average ratings and clusters of individual preference variation. On average, images with intermediate visual complexity and vertical symmetry were most preferred. However, individual-level analysis revealed two distinct participant clusters with divergent preferences for both complexity and symmetry. One cluster preferred high-complexity, symmetrical images (the "intricate" cluster), while the other favored low-complexity, asymmetrical images (the "smooth" cluster). These clusters also differed in their ratings of perceived interest and relaxation. These findings offer a more nuanced understanding of how visual complexity and symmetry influence aesthetic evaluations at both universal and individual-specific levels.

T5 **Less is more: Aesthetic liking is inversely related to metabolic expense by the visual system**

Dirk B. Walther, Yikai Tang, William Cunningham
University of Toronto, Canada

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.

T5 **Using image aesthetic mapping to explore the impact of details on the visual inspection of art photographs and paintings**

Maarten Leemans, Johan Wagemans
Laboratory of Experimental Psychology, Brain and Cognition, University of Leuven (KU Leuven), Belgium

Images often contain details that are important for our aesthetic appreciation. However, despite the importance ascribed to details in art history, their role in the perception and appreciation of images has rarely been studied in empirical aesthetics. To address this issue, we have developed 'image aesthetic maps' to map the importance of details for aesthetics onto the whole image. In addition, we have developed 'GridSamp', an open source and easy-to-use Python toolbox to facilitate the generation of image aesthetic maps. Images are first divided into rectangular-shaped local image regions, which online participants then rate on their importance for aesthetics. After a series of pooling, averaging, and smoothing steps, these ratings provide the spatial distribution of the local aesthetic importance ratings for that image. We thus define 'details' operationally as all possible inhomogeneous image regions and acknowledge that they can differ widely in size and importance. These details can be considered potential aesthetic hotspots. In the first experiment, we generated image aesthetic maps of images selected based on a previous validation study to map their local pleasure and interest density. In the second experiment, we recorded eye movements to map the local fixation density of those images. By relating these two densities, we investigated whether the local aesthetic density of an image predicts fixation locations in that image. We observed a positive association between aesthetic density and fixation density, suggesting that aesthetic importance guides the visual inspection of images. In addition, aesthetic density predicted fixation locations beyond low-level saliency, indicating that visual attention to art is guided by aesthetic density beyond low-level image-computable saliency. This was not the case when using Deep Gaze, however. We will present this proof of concept study as an example of how aesthetic maps can, and cannot, be used to study details in empirical aesthetics.

T5 **Cognitive Modeling of Visuospatial Complexity for Human Visuo-Locomotive Experience**

Vasiliki Kondyli[1], Mehul Bhatt[2]
[1]Lund University, Sweden
[2]Örebro University, Sweden

The effects of visual complexity on attention and cognition have been widely studied across disciplines such as design, psychology, and computer science. Defined as the level of detail and intricacy within a scene, visual complexity is often measured using attributes like clutter, saliency, spatial frequency, and entropy. These approaches, focusing primarily on low-level features (e.g., luminance, color, contrast), have demonstrated significant effects on perception and attention. However, they often fail to account for the complexities of naturalistic, dynamic environments where low-level and high-level cognitive processes interact. To overcome this limitation and explore the effect of complexity in three-dimensional naturalistic environments, we build on prior frameworks to develop a cognitive model of visuospatial complexity—as a holistic approach that integrates low-level visual properties with high-level semantics (e.g. objects, people). This framework is articulated through a human-centered cognitive model that incorporates quantitative attributes (e.g., color, contrast, density), structural attributes (e.g., symmetry, connectivity), and dynamic attributes (e.g., directionality, velocity). Using this model, we systematically investigate how combinations of these attributes shape visuo-locomotive experiences, encompassing perception, attention, and movement in dynamic settings. Empirical validation of the model involves empirical behavioural studies in VR, where we systematically manipulate levels of complexity. These studies explore tasks such as visual search, change detection, navigation, demonstrating how visuospatial complexity influences embodied visual attention and performance in dynamic environments. Grounded in these findings, we develop a prototypical application for systematically manipulating complexity in 3D environments. This serves as a tool for exploring complexity in scenarios relevant to disciplines such as architecture, urban planning, and immersive media to create and explore spaces that optimize user engagement, navigability, and attentiveness. By bridging cognitive science and design, this research offers a robust framework for human-centred complexity-informed design, enhancing our capacity to shape meaningful human experiences in naturalistic and dynamic environments.

Talk session #6
Art & Science Collaborations: Through The Lens of The Camera

Saturday August 23, 2025 16:30-18:00
Chair: Zsofia Pilz

As a conference whose primary goal is to bring artists and scientist together and inspire collaborations and mutual learning, over the last few years VSAC hosted sessions exploring art and science collaborations from different perspectives. This year, we reimagine the collaboration through the lens of film and haptics aesthetics: four artist-scientist duos will discuss how artistic interpretation can enhance the reception of scientific findings,

and how such activities can ignite wonder and amusement in spectators by breaking through the limits of our perceptual and physical understanding of the world. Speakers will also discuss how perception-based films can foster inclusivity and affect public policy. The session will end with an open discussion with the audience.

T6 **Conversation: Public Policy Meets Vision Science: Studying Implied Motion in Two Accessibility Icons**

Tessa Bury[1], Marina Pace[2]
[1]Independent Researcher & Filmmaker, United States
[2]New School Perception Lab, United States

In 2014, New York State passed a law mandating the replacement of the traditional International Symbol of Access (ISA)—a profile of a schematic figure sitting upright in a wheelchair—with the Accessible Icon Project (AIP) icon—depicting a forward-leaning figure "with a sense of movement." While the updated icon is considered by some to be more progressive and inclusive, its widespread adoption occurred without empirical testing or consideration of the effects of its stronger implied motion on observers' visual attention and motor responses. This session brings together researcher and filmmaker Tessa Bury and perception researcher Marina Pace in an interdisciplinary conversation on how visual symbols operate at the intersection of representation, perception, and public policy. Drawing on FOIL requests, public records, and interviews with designers, officials, and wheelchair users, Bury traces the AIP icon's cultural and legislative trajectory, finding that, while the symbol was intended to promote empowerment, its dynamic form may unintentionally cue misleading spatial interpretations. Bury also documents concerns from some disability advocates and wheelchair users who argue that the emphasis on motion reflects an ableist bias. Pace has run a series of experiments empirically testing how observers respond to the icons. She finds that the new, forward-leaning icon primes directionally congruent motor responses more strongly than the traditional ISA. This effect may have broad consequences for how the symbol is interpreted and acted upon—in both everyday navigation and in emergency situations. Drawing on insights from research in public policy, design theory, and perceptual psychology, our conversation will explore how interdisciplinary collaboration can strengthen wayfinding systems and inform more inclusive and perceptually grounded design practices.

T6 **Noumenon (2024) : a short film on the limits of perception and the convergence of science and spirituality.**

Maya Laughton[1], Janna Kyllästinen[2]
[1]Scientist and Artist: one of the filmmakers of Noumenon (2024) as well as a Neuroscience Researcher in Biotech Industry, United States
[2]Artist: One of the filmmakers of Noumenon (2024), United States

A daring blend of myth and science, Noumenon invites us to wonder at the multitudes of ways we seek to understand the universe despite the limits of our perception. This experimental short film considers the defining tension within human consciousness – the desire to understand the nature of the world and our place within it. It challenges the chasm between science and spirituality, which typically approach this inquiry from opposing sides. Whereas spirituality is characterized by introspection, myth, and belief in the unseen, science is defined by observation, experimentation, and evidence. Still, neuroscientist Dr. Anil K. Seth's theory of controlled hallucinations describes how all perceptions of reality are the brain's active constructions of ambiguous sensory data. In short, our brain's translation of reality is not an objective one. This unreliability in perception highlights a point of convergence for science and spirituality. Both demand we conceptualize a reality beyond our perception. Noumenon reflects on this relation between reality and perception, from a neuroscience and Hindu perspective. As Dr. Seth narrates his concept of controlled hallucination, the film visualizes the Hindu philosophy of maya – the powerful force sustaining the cosmic illusion of the phenomenal world as real. The film integrates footage of sensory neurons in an awake mouse, captured by 2-photon calcium imaging from my tenure as a researcher at NYU's Center for Neural Science, and offers a rare behind-the-scenes peek into neuroscience research. To juxtapose, weave, and blend scientific with spiritual world views, this laboratory footage was woven with South Indian classical temple dance, Bharatanatyam. For Noumenon's original musical score, our musicians improvised over a rough cut of the film, fusing deconstructed jazz and classical Indian sounds. With an immersive soundtrack, captivating visuals, and a thought-provoking, poignant climax, Noumenon frees imaginations to the realm of art and science through film.

T6 **Can Friendly Movements Sound Friendly? Motion Sonification Using Motion Energy**

Miao Cheng[1], Siou-Ming Wu[2], Yangyang Cai[3], Chia-Huei Tseng[1], Yoshifumi Kitamura[1]

[1]Research Institute of Electrical Communication, Tohoku University, Japan

[2]Shycacti Sound Studio, Taiwan

[3]Graduate School of Information Sciences, Tohoku University, Japan

Human movements convey critical social cues in communication. Similarly, audio (such as music) often richly embodies emotional and social information. As forms of time-series data, motion and audio share key properties like rhythm, tempo, and intensity. Specifically, audio can be represented by spectral and amplitude variations across frequencies, while body motion can be quantified by motion energy, capturing spectral dynamics of movement. This study investigates whether socially meaningful information embedded in human motion, such as friendliness or hostility, can be effectively translated into audio format. First, we invited 43 Japanese and 41 Taiwanese professional performers to portray friendly and hostile movements, which was recorded using motion capture

system (Vicon). We then extracted motion energy to quantify frequency spectrum signal from body movements (Ramseyer, 2020). We converted this motion energy data into structured audio tracks, aiming to differentiate friendly and hostile cues through sound characteristics. Using emotion-driven scales and timbres—major ascending for friendly and minor/dissonant descending percussive for hostile—the system maps real-time motion energy to pitch (higher energy = higher pitch) and analyzes movement frequency to modulate tempo (slow, low-frequency motion yields lower BPM; rapid, high-frequency motion speeds it up). Based on physical behavior dynamically shift intervals and volume, with large movements introducing abrupt dissonance and stillness reducing or silencing sound, allowing listeners to perceive motion dynamics acoustically. This research examined the extent to which social intention expressed through body movements can be successfully communicated through auditory modality. Such cross-modal conversion has significant potential to enhance perceptual experiences for individuals with visual impairments, enabling improved understanding of body language through audio. Additionally, the methods developed offer innovative tools for artists and performers exploring intersections between motion and sound. Finally, our findings contribute to the broader academic discourse on cross-modal perception and the interaction between visual and auditory information.

T6 **How Unrestricted Human Interaction with Artwork Deepened our Understanding of Material Appearance**

Davit Gigilashvili[1], Jean-Baptiste Thomas[2], Jon Yngve Hardeberg[1]
[1]Colourlab, Norwegian University of Science and Technology, Norway
[2]ImViA, Université Bourgogne Europe, France

The human visual system effortlessly perceives the appearance of objects and materials. The mechanisms of appearance perception are a topic of active study. However, the visual experiments conducted in laboratory conditions often use the stimuli displayed on a screen, limiting possibilities for interaction and creating conditions far from everyday experience. We will present a story of a successful interdisciplinary collaboration between color scientists and an artist and explain how the artwork collection was used as an experimental stimulus to advance our understanding of material perception in real-life scenarios. The Plastique artwork collection, a set of handcrafted resin objects, was commissioned to an artist, who created the mini sculptures in three different shapes, three different hues, and varying degrees of translucency, roughness, and gloss. The objects were inherently intended for an interactive tactile experience. The objects from the collection were given to the participants of a qualitative experiment, who were asked to describe the appearance of the objects and complete simple visual tasks, such as ranking them by translucency or gloss. They were given freedom to interact with the artwork. The process was videotaped with their consent and subsequent analyses helped us identify key appearance naming vocabulary as well as common behavioral patterns and strategies used to assess the looks of the objects. For instance, we observed that assessment

of translucency was repeatedly performed on a backlight, since backlit objects exhibit more vivid translucency cues, while motion cues were used to assess gloss. (Gigilashvili et al., Journal of International Colour Association, 27, 26-55, 2021) These observations not only helped us to plan subsequent quantitative studies, but also inspired us to propose novel visualization techniques for cultural heritage artifacts in museum settings. To illustrate the latter, we will also present our recent work on backlight-RTI for visualization of translucent Viking Age beads.

Poster sessions

Poster session #1
Perception, Visual Imagery, Aesthetic Concepts & Eye Tracking

Thursday August 21, 2025 15:00-16:30
Location: Maki forum

P1 **Shared gaze drives shared aesthetic preferences**

Mustafa Alperen Ekinci, Daniel Kaiser
Department of Mathematics and Computer Science, Physics, Geography, Justus Liebig University Gießen, Germany

When different people look at the same visual input, they often differ in their aesthetic judgments. Such individual differences are observed across various types of stimuli, including faces, natural scenes, and artworks. In this study, we investigated whether individual differences in aesthetic appreciation during a naturalistic movie are related to how observers move their eyes during the movie presentation. Participants watched the documentary movie Home while their eye movements were recorded and continuous aesthetic ratings were collected. The movie captures scenes of varying aesthetic appeal from around the world, providing rich and diverse visual content for exploration. For temporal segments throughout the movie, we computed fixation heatmaps and examined the similarity of gaze patterns across participants. We found that greater similarity in fixation heatmaps across segments was associated with greater agreement in aesthetic ratings across individuals. These results suggest that shared gaze patterns are linked to shared aesthetic experiences, highlighting the role of gaze dynamics in the formation of aesthetic appeal under naturalistic and dynamic viewing conditions.

P1 **Defining the Indefinable: Eye-tracking and the Visual Perception of Harmony in Equestrian Sports**

Madita Everding, Debby Gudden, Inga Wolframm
Van Hall Larenstein University of Applied Sciences, Netherlands

Harmony between horse and rider is often portrayed as the ultimate artistic ideal in equestrian sport, yet judging this subjective quality remains elusive. This study investigated how equestrian experts and enthusiasts visually assess and define harmony, using eye-tracking technology to explore the relationship between gaze behavior and evaluative judgments. Fifty-seven (N=57) participants from diverse equestrian backgrounds

evaluated standardized video clips across five disciplines while their eye movements were recorded via a Tobii Pro Fusion screen-based tracker. Participants rated each horse-rider pair for perceived harmony (0–10) and provided open commentary on defining features. Eye-tracking metrics included number and duration of fixations and time to first fixation on predefined anatomical areas. Descriptive analyses showed that harmony scores clustered between 5 and 7 (M=6.06, SD=1.76). Multiple regression analysis (Adj. R^2=0.116, p<.001) identified participant Category (=0.27, p<.001) and Discipline (=-0.26, p<.001) as significant predictors of perceived harmony. Duration of fixation showed a trend towards significance (=-0.04, p=.077), with shorter fixation durations weakly associated with higher harmony scores. Similarly, fewer references to "connection" in participants' commentary (=-0.13, p=.048) were linked to higher perceived harmony. These findings suggest that judgments of harmony are shaped more by participants' backgrounds and internalized expectations than by overt visual search behavior. True harmony may be most recognizable precisely when it becomes invisible — when movement flows so intuitively that viewers require neither prolonged gaze nor explicit commentary. Understanding these subtle dynamics is crucial for advancing transparent, evidence-based assessment frameworks, not only in equestrian sport but across artistic domains where relational aesthetics and dynamic interaction play a central role.

P1 **Do aesthetic judgements and sensory sensitivity predict attention to visual art? A wearable eye-tracking study in an art gallery**

Jadwiga Bozek[1], Thijs van Laarhoven[1], Frederique Scholtes[2], Gijs Holleman[1]
[1]Tilburg University, Netherlands
[2]Akademiegallerij, Utrecht Academy of Arts, Netherlands

Background. We investigated how aesthetic judgements and sensory sensitivity influence people's gaze and attention to visual art. Previous research has shown that people tend to look longer at art works they find aesthetically pleasing, but for a large part, these findings have been obtained in controlled laboratory environments. Moreover, little is known about how individual differences in sensory sensitivity may moderate this relationship. Method. 61 participants, equipped with a wearable eye-tracker, looked at visual art works in an art gallery. After their visit, participants evaluated each art work on aesthetic dimensions (e.g., beauty, liking, emotional impact, complexity), and filled in the Glasgow Sensory Questionnaire (GSQ) to provide a measure of self-reported sensory sensitivity. Research question. Do people's aesthetic judgements predict visual attention to art works, and is visual attention moderated by sensory sensitivity? We hypothesized that 1) higher aesthetic judgements will correlate with longer total and average fixation durations, and 2) more sensory sensitive visitor's will show increased total and average fixation durations when looking at art. First results. We found a significant positive correlation between subjective beauty/liking judgements and total fixation duration (= .12, p = .024), but no significant correlation was found between

subjective beauty/liking and average fixation duration. Sensory sensitivity positively correlated with total fixation duration (= .18, p = .001), and subjective beauty/liking correlated with sensory sensitivity (= .12, p = .024). Discussion. Initial results show that subjective judgements of beauty/liking and sensory sensitivity predict visual attention to art works in a gallery environment. We are currently working on additional analyses on how other aesthetic judgements (e.g., emotional impact, interest, complexity) influence measures of visual attention, and how sensory sensitivity affect these relationships.

P1 **Eye Tracking in the Visual Arts – Artistic usage vs. research tool**

Alexander Averhage[1], Zsofia Pilz[2]
[1]Osnabrück University (researcher), HBK Essen (lecturer) , RWTH Aachen (doctoral candidate), Germany
[2]Leiden University, Cognitive Psychology (PhD Candidate), Germany

The proposed talk aims to offer insight into the history and concepts behind eye tracking technology as a tool in the visual arts and how this usage may inform or may be related to eye tracking as a research tool in the sciences. A lot of technology usage in art (such as eye tracking), is often just loosely derived from the intended, often commercial, use-cases of the respective technology. Instead of using eye tracking in ways that were readily available, technologically inclined artists often pushed the limits of what would have been intended use and therefore were faced with the necessity of experimental setups that accomodate the artists "niche" use-cases. These kinds of situations, which in some cases would today be dubbed as "artistic research" or "research as art" reveal a development and refinement process of eyetracking-based research, that may proof similar to respective research in academia. Trying to sketch out historical connections between eyetracking in art and academic research alike allows for a broader an more coherent picture of the (compound) history of eyetracking. The talk is illustrated by commentary on exemplary artworks throughout contemporary art as well as the introduction of a current research project making use of eyetracking in a museum setting.

P1 **Pretty as a Picture: An Eye-tracking Investigation into the Aesthetic Experiences of Scene Photographs and Paintings**

Long Feng Huang, Matthew D. Bachman, Cendri A. Hutcherson, Jonathan S. Cant
University of Toronto, Canada

The aesthetic experience underlying the appreciation of scene images can be influenced by a variety of factors, including the image creator (e.g., human vs. AI), type of image (e.g., photographs vs. paintings), and eye movement patterns during observation. To explore the interaction of all these factors, two eye-tracking experiments were conducted to investigate the differences in visuospatial attention during passive free viewing of human-

versus AI-generated scene photographs (Exp 1) and paintings (Exp 2). Aesthetic ratings and eye-movement data were collected in each experiment, and heatmaps were generated to determine the spatial distribution of gaze. The preliminary results of the first experiment showed that human-generated scene photographs exhibited significantly lower ratings of beauty and artificialness compared to their AI counterparts, while the second experiment found that human-generated scene paintings were considered more emotionally engaging and less artificial than the AI images. For both photographs and artwork, familiarity was consistently a significant predictor that influenced all aesthetic ratings. Interestingly, eye-movement data revealed no significant differences in fixation count nor fixation duration for human versus AI images in either experiment. Heatmap visualizations corroborated this null finding, revealing similar gaze distributions for analogous images in the human and AI stimulus sets. Overall, these results seem to implicate a common visual processing mechanism that, under passive viewing conditions, does not discriminate between human- versus AI-generated scenes. This work has the potential to reveal crucial differences in the perceptual processing and subsequent aesthetic evaluation of scene images from various sources and styles, and to characterize what factors (if any) differentiate AI images from human creations.

P1 **Celebrity EYE-Q: Holistic face processing in a tabletop game**

Didi Dunin, Benjamin van Buren
The New School, United States

What makes it fun to learn about a phenomenon of visual perception? Learning about it in a game involving celebrities! Here we introduce a tabletop card game called Celebrity EYE-Q, in which players compete to guess celebrities from their eyes, and learn about *holistic face processing* Players must guess celebrities from their eyes (1) viewed in isolation or (2) held up to other players' eyes to elicit disruptive holistic face processing from surrounding facial features. Celebrity EYE-Q players will learn about the 'composite face illusion' — the automatic tendency to integrate local face features with surrounding facial features.

P1 **Objects are less beautiful when Memory is busy - Towards the Role of Working Memory on Aesthetic Judgments**

Engel Jana, Bettina Rolke
University of Tübingen, Department of Psychology, Germany

The results of studies that have examined the influence of working memory load on aesthetic judgments are contradictory. While some studies have shown that memory load has no effect on aesthetic judgments (Bara et al., 2023), others have reported that high memory load can reduce beauty ratings (Brielmann & Pelli, 2017). In two experiments,

we investigated how different types of memory load affect aesthetic evaluations of neutral object images. In Experiment 1, participants rehearsed visual and auditory memory items and rated the aesthetic appearance of images of chairs. Results showed that chairs received lower ratings in the more difficult auditory memory condition than in the easier visual load task. Experiment 2 used only visual memory items and showed that chairs received lower ratings under high memory load compared to a low load condition. Taken together, our results suggest that increased cognitive processing demands induced by rehearsing memory items negatively affect aesthetic judgments of object pictures. The type of memory task (e.g., different domains, different levels of load) appears to modulate its impact on aesthetic judgment, potentially explaining the inconsistencies observed in previous findings. References: Bara, I., Binney, R.J., & Ramsey, R. (2023). Investigating the role of working memory resources across aesthetic and nonaesthetic judgments. Quarterly Journal of Experimental Psychology, 76, 1026-1044. Brielmann, A. A. & Pelli, D. G. (2017). Beauty Requires Thought. Current Biology 27, 1506-1513.

P1 **The Role of Mental Imagery in the Perception of Girih Ornamentation: An Eye-Tracking Study**

Bahar Akgün
University of Heidelberg, Germany

Girih, referred to as arabesque in Europe, is a form of geometric ornamentation that originated in the eastern Islamic world of the ninth and tenth centuries. It is characterized by a visual language of star and polygon compositions through underlying grid systems with rotational symmetries. A renewed scholarly discourse interrogating the "arts of Islam" provides valuable insights into the aesthetics of girih, while digital design has revived interest in its design principles in contemporary architecture. The perception of girih ornamentation is an unfolding visual and cognitive process in which the gaze continuously constructs, dissolves, and reconfigures spatial relationships, stimulating imagination, eliciting emotions, and encouraging a contemplative mode of vision. This paper presents an eye-tracking study, conducted as part of an interdisciplinary PhD research to investigate this perceptual phenomenon. This study is based on the assumption that the formation of mental images and the effects generated by their successive emergence are fundamental to the aesthetic experience of girih ornamentation. Utilizing eye movements and sketching as tools to engage with imagery, this study examines how these mental images form and how their successive emergence shapes the perception of girih. The study employed a two-dimensional reproduction of a girih pattern from the 13th-century Tokat Mahperi Hatun Caravanserai in Anatolia, along with two geometric patterns of varying complexity. Five participants viewed the stimuli while an eye tracker recorded their gaze behavior. After each trial, they drew what they saw on paper. The observe-then-draw task was repeated nine sessions with increasing durations. The analysis revealed that structured visual strategies, cognitive trade-offs, and the interrelated processing of geometric features in girih ornamentation underlie its distinct visual

perception. The results of this study are discussed within the broader framework of a reconceptualization of the aesthetics of girih ornamentation and its potential applications in contemporary architectural ornament.

P1 **Aphantasia and Creativity: The relationship between visual imagery, creative behaviours and divergent thinking**

Natasha Cullen
Goldsmiths, University of London, United Kingdom

Visual imagery is the ability to create absent images in the mind's eye. Most people can visualise to some extent, but 2-6% of the population have limited or non-existent visual imagery, known as aphantasia and 6-11% have hyperphantasia, where they experience visual imagery as vivid as sight. Research into visual imagery is limited with studies investigating visual imagery and creativity focusing on occupation and produced artworks, not whether visual imagery impacts creativity. Research into this area will provide understanding of individual differences in internal experiences and how creativity varies because of this. This study investigated the relationship between visual imagery ability and creativity, measuring creative behaviours and scores on verbal and figural divergent thinking (DT) tasks. 90 participants are currently being recruited. They will complete an online questionnaire containing items from the Vividness of Visual Imagery Questionnaire, the reduced 20 item Kaufman's Domains of Creativity Scale and the verbal and figural Alternative Uses Test. They will have the opportunity to be entered into a £20 prize draw and receive participation credits if they are a Goldsmiths, University of London student. The study will test four hypotheses (H). H1 that visual imagery will positively correlate with creative behaviours and figural DT. H2 that visual imagery will not correlate with verbal DT. H3 that creative behaviours, verbal DT and figural DT will be positively correlated and H4 that visual imagery will predict figural DT and creative behaviours. Gathered data will be analysed on JAMOVI with H1-3 tested using correlation and H4 ordinal linear regressions. This study will fill gaps in the current, limited research landscape in visual imagery and will provide applications into mindfulness, education, understanding of individual differences and future research into creativity.

P1 **Human vs. machine in visual imagination: How human guidance shapes creativity in Generative AI**

Silvia Rondini[1], Claudia Alvarez-Martin[1], Paula Angermair[2], Olivier Penacchio[3], Marc Paz[4] and Matthew Pelowski[2], Antoni Rodriguez-Fornells[1], Xim Cerda-Company[3]
[1]Cognition and Brain Plasticity Unit, Institut d'Investigació Biomèdica de Bellvitge, Spain
[2]Cognitive and Neuroaesthetics, University of Vienna, Austria
[3]Bridging Research in AI and Neuroscience, Computer Vision Center, Spain
[4]Computer Vision Center, Spain

Creativity has long been considered a uniquely human faculty. However, with the rise of Generative AI (GenAI) models capable of producing highly realistic and contextually nuanced outputs, recent research has begun to assess their creative and psychometric capacities. Findings suggest that the creative performance of Large Language Models (LLMs) can match or even excess that of human participants. Yet, these studies have largely focused on Divergent Thinking (DT) tasks and treated LLMs as isolated computational agents, offering a limited perspective on computational creativity. This study extends this perspective by examining visual creativity in both humans and GenAI. We compared the output of human participants—Visual Artists and Non-Artists–with that of a Stable Diffusion model under two prompting conditions: Human-Inspired (high human input) and Self-Directed (minimal human input). Participants completed an image-generation task, and the resulting images were evaluated by a large sample of human raters (N = 255) across five dimensions: Liking, Originality, Vividness, Aesthetics, and Curiosity. Our findings show a clear gradient: images by Visual Artists were rated highest in creativity, followed by those of Non-Artists, Human-Inspired AI, and lastly Self-Directed AI. These results highlight the critical role of human guidance in guiding GenAI creativity. Furthermore, the divergence from DT-based findings suggests that GenAI may face more profound challenges in visual domains, where creativity depends on perceptual nuance, spatial understanding, and embodied memory—capacities that may be uniquely human and not readily transferable from language-based models.

P1 **The Art of Disfluency: Cognitive Elaboration and Aesthetic Value in Abstract Stimuli**

Jurate Rimiskyte[1], Claus-Christian Carbon[2]
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[2]Department of General Psychology, University of Bamberg, Bamberg, Bavaria, Germany, Germany

Aesthetic appreciation is an outcome of a complex interplay between cognitive and emotional processes, strongly modulated by perceptual and conceptual fluency factors. While a high number of studies affirmed the influence of dual fluency processing on the aesthetic evaluation, little research addressed the prominence of the disfluency effect for

aesthetic value at both processing fluency modes. It is often assumed that initially disfluent stimuli trigger negative affective fluency, which can be resolved through cognitive elaboration, aiding pre-deposited disfluency reduction. However, we lack knowledge about the influence of how cognitive elaboration can change disfluent abstract stimuli. In the present study, we examined the influence of cognitive elaboration (operationalized via the fit between title and stimulus) with stimuli that varied regarding contour (curved, angular), complexity (low, high) and motion (static, expanding, rotating) on aesthetic appreciation. To measure aesthetic appreciation, we used aesthetic evaluation in two levels- attractiveness and interestingness. Results indicated that processing fluency condition modulates disfluency reduction with cognitive elaboration, specifically for disfluent stimuli (angular, high complex, expanding/rotating), enhancing aesthetic appreciation of interestingness. Fluent stimuli (curved, low complex, static) elicited high aesthetic liking across both processing modes without a significant change, suggesting that cognitive elaboration is most active when fluency expectations are violated. Furthermore, addressing the impact of individual aesthetic properties, curved contour and low complexity directly improved aesthetic appreciation. However, motion did not individually affect aesthetic evaluation but appeared to moderate aesthetic appreciation only for disfluent stimuli via interactions with contour and complexity. Such aesthetic improvement likely emerged due to minimized disfluency discrepancy and enhanced depth perception. These findings align with predictions of the hierarchical dual aesthetic processing model, emphasizing the prominence of cognitive elaboration on aesthetic appreciation across conceptual fluency mode. The complex data pattern calls the need for further extensions of existing processing fluency models of aesthetic appreciation.

P1 **Expressive qualities considered as relational perceptual structures: towards a unified perspective**

Giulia Parovel
University of Siena, Italy

The gestalt theoretical issue of expressive qualities offers the possibility of considering emotions and feelings not only as events within the subjective sphere, as is implicitly assumed in traditional psychology, but also as perceptual structures that arise in the relationship between the observer and the observed object. The concept of relationship is presented here as an organising tool capable of encompassing a variety of phenomena, in both static and dynamic scenarios, in a unified perspective. Expressive events arise, for example, a) in the relationship of an object to its environmental reference system (e.g., verticality, obliquity, elevation, self-propelling motion, upward motion); b) in the internal articulation of an object (e.g., physiognomic lines, shapes and trajectories, goal-directed motion); c) in the relationship between two or more objects (e.g., dynamic interactions, grouping by 'faceness', biological motion, animacy and psychological causality); d) in patterns of multiple relationships (e.g., 'atmospheres'). Furthermore, the relationship between the observer and the observed can vary both e) on the side of the observed, who

can exhibit different degrees of 'demanding character', and f) on the side of the observer, who can adopt different modes of perception, such as a 'physiognomic' versus a 'geometric-technical' mode. In addition, recognizing the role of relations as meaningful perceptual constraints has the crucial advantage that expressive events can be investigated using the classical methods of experimental psychophysics and experimental phenomenology - by systematically isolating and manipulating the variables involved. The growing body of work in visual aesthetics and in the topic of animacy and intentionality suggests that the study of expressiveness deserves a relevant place in experimental psychology alongside other more traditional areas of visual perception research. [Supported by SERICS (PE00000014) under MUR PNRR, funded by NextGenerationEU, and PSR by DISPOC, Siena University]

P1 **Order vs. Chaos: Cognitive Biases in Aesthetic Composition**

Hui Chen, Chenxiao Guan, Yiming Zhu, Jinglan Wu, Zaifeng Gao and Mowei Shen, Jifan Zhou
Zhejiang University, China

Aesthetics experience involves complex information processing that integrates cognition, value judgement, and emotion. At its core lies the mental representation of aesthetic objects. Among the many factors influencing visual aesthetic appreciation, composition is especially significant. However, most prior research has emphasized the physical features of aesthetic objects, overlooking the role of internal visual representations and inherent aesthetic preferences. Recent studies suggest that hierarchical structure is a core aspect of visual perception, indicating that aesthetic compositions may also be mentally organized hierarchically. For example, a picture of a beach can be perceived as one part includes land and the other part includes sea, and then the land part could be further perceived as a portion includes trees and the other portion includes houses. This is a typical hierarchical tree structure. Yet, how such structures influence aesthetic judgment, and how preference for compositional beauty emerge, remains poorly understood. This study examines the relationship between the characteristics of the hierarchical structure and the aesthetic evaluations. Through two experiments, there were two kinds of pictures, one was generated by parameters based on priori experience through computational modeling, and the other was generated by random parameters. Our participants were asked to evaluate the pictures. We found that compositional biases arise from a priori hierarchical preferences, no matter in simple Mondrian style pictures, or in complex scenes. Therefore, we showed that hierarchical structure characterizes the subjective representation of compositional information in aesthetic objects, regardless of their simplicity or complexity. Overall, this research offers a novel framework that connects perceptual structure, cognitive processing, and aesthetic judgments, providing insights into how we mentally construct and evaluate visual composition.

P1 **Repetition, variation, and deviation in ordered visual structures: An examination of perceptual and aesthetic effects**

Claudia Muth[1], Karina Kueffner[2]
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We explored perceptual and aesthetic effects of repetition, variation, and deviation in visual structures. Based on previous findings in aesthetics research, we hypothesized that non-obvious order or complex variations of shape or color stimulate perception and potentially evoke interest. People trained in design or fine arts created six sets of visual structures, each on a 6x6 grid by a) repetition of a module consisting of four dark-grey elements (two rectangles and two triangles), b) variation through systematic rotation of the module, and c) deviation from this ordered variation by altering one element of each module. Furthermore, they varied color by replacing one element in each module of each structure with a light-grey element. Another group rated these images block-wise in randomized order on liking, interest, powerfulness of affect, and obviousness of order on a 7-point-scale. In addition, we collected responses to an open question regarding the individual focus when rating powerfulness of affect and we asked for each person's background and interest in art and design. Visual structures appeared most interesting and powerful to participants when they showed a systematic variation (b) compared to a repetition of the modules (a) or a deviation from order (c). Images gained higher liking ratings the more obviously ordered they appeared, whereas obviousness of order played a less clear role for powerfulness of affect and showed no significant effect on interest evaluations. Color variations had no overall positive aesthetic effect. In response to our open question, some participants reported that they experienced less powerfulness of affect when elements showed a simple order but also when they appeared to be arranged arbitrarily. Future studies could therefore additionally assess how intentional a structure appears; this could apply not only to ordered structures, but also to apparently deliberate deviations from order.

P1 **Empirical Aesthetics of Ikebana: Effects of Subjective and Objective Symmetry on Beauty of Japanese Traditional Flower Arrangement**

Jimpei Hitsuwari, Thomas Jacobsen
Helmut Schmidt University, Germany

Ikebana, a traditional Japanese art of floral decoration spanning over a thousand years, is marked by its prominent use of asymmetry. While symmetry and asymmetry have been central topics in empirical aesthetics—with a cross-cultural consensus that "symmetry is preferred" based on studies using faces and geometric figures—no study has systematically investigated asymmetry in ikebana. In this study, we investigated how subjective

and objective symmetry of ikebana predicts aesthetic evaluations among Japanese participants. A total of 250 participants took part in an online experiment, evaluating 25 out of 75 ikebana images provided by a professional ikebana artist, on three dimensions: beauty, liking, and subjective symmetry. Participants' experience with ikebana and their Desire for Aesthetics Scale scores were also collected. Image-level features including objective symmetry, aspect ratio, and brightness were computed using OpenCV. Results from linear mixed model analyses with beauty as the dependent variable revealed that both the linear and quadratic effects of subjective symmetry were significant: higher symmetry predicted greater aesthetic evaluation, following a gentle U-shaped curve. Moreover, the interaction between ikebana experience and subjective symmetry was significant: less experienced participants were more sensitive to symmetry, while its influence weakened among more experienced ones. These findings suggest that even in an art form characterized by asymmetry, symmetry remains a powerful positive predictor of aesthetic appreciation, consistent with prior empirical aesthetics research. Additionally, as previously reported , preferences for symmetry varied depending on artistic expertise. A limitation of this study is that all stimuli exhibited some degree of asymmetry; future research should examine fully symmetrical ikebana arrangements for comparison. This study offers the first quantitative investigation of the relationship between (a)symmetry and aesthetic evaluation in ikebana, providing new empirical insights into a classical theme in empirical aesthetics and laying the foundation for future research.

P1 **The role of time arrows in the colour perception of visual arts**

Kazim Hilmi Or
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The perception of time, particularly in relation to color perception, plays a crucial role in how viewers experience visual artworks. This review explores the complex interplay between time arrows and color perception, drawing from recent research in visual science, neuroaesthetics, and art theory. The concept of time arrows refers to the directional flow of time, which in both physics and art is understood as both thermodynamic and psychological. Studies have shown that the perception of color can significantly influence temporal experiences, with specific colors and compositions altering the viewer's sense of time. For example, red stimuli are perceived as shortening time intervals, while blue stimuli lead to longer perceived durations. This duality between psychological and intrinsic time has been proposed as a model for understanding the temporal dimension in art, with intrinsic time linked to wavelet time operators and psychological time associated with spatial domains. Furthermore, the manipulation of color, pattern, and movement in visual arts challenges traditional views of left-to-right directional flow and highlights the non-universal nature of temporal perception. This paper synthesizes key findings across disciplines to outline how time perception, mediated by color, shapes our experience of visual art, while also suggesting pathways for future research into the role of color in time-related phenomena in artistic contexts.

P1 **Infant Looking and Adult Aesthetic Judgements: Exploring the Connection Between Perception and Aesthetics**

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Infants look longer at colours preferred by adults (Skelton & Franklin, 2020), at faces that adults rate as attractive (Damon et al., 2017), and at Van Gogh landscapes and building facades that adults find pleasant (McAdams et al., 2023; 2025). These findings raise the question of the extent to which infant looking and adult aesthetic judgements are related, and the extent to which infant and adult responses are associated with similar image properties. Here, adults rated how beautiful (N=20) and interesting (N=20) they found images of natural (e.g., plant patterns, tree branches) and human-made scenes (e.g., architectural facades, objects), taken from a prior aesthetics study (Redies et al., 2018). Additionally, a separate group of adults (N=24) and infants (4–8 months, N=29) viewed images freely whilst their eye-movements were recorded. We analysed the relationships between each aesthetic judgement type with eye-movement measures (looking time, fixation duration, and fixation count) for infants and adults. Adults' looking behaviour was unrelated to beauty and interest. Infants fixate longer ($r_s(73) = .37$, $p < .005$) and less frequently ($r_s(73) = -33$, $p < .005$) the more interesting adults find the images. Partial least squares regressions with low- and mid-level image statistics as predictors identified that different image statistics were associated with infant looking measures and adults' aesthetic judgements. Infant fixation duration and frequency were associated with edge density, complexity and lacunarity, while adult ratings and looking measures were associated with different image statistics (e.g., local mirror symmetry and self-similarity). Although infant looking statistically relates to how interesting adults find the images, different image properties underpin infant looking and aesthetic judgements. We discuss implications of the findings for theories of visual aesthetics, the role of low- and mid-level visual properties in aesthetics, and how aesthetic judgements develop. Funding: European Research Council grant to AF (ref 772193).

P1 **Illusory colours in monocular rivalry**

Leone Burridge
Independent artist Sydney, Australia

At VSAC Berlin 2017 I presented paintings of coloured plaids of 4 colours with the colours alternating in monocular rivalry. In this presentation of acrylic on canvas paintings, only 2 colours and grey were used but there is a percept of 4 colours alternating in pairs. In the accompanying image of an example, only orange, green and grey were used.

P1 **The influence of aesthetically preferred visual stimuli on access to conscious perception**

Greta Varesio, Paolo Barbieri, Tommaso Ciorli, Jacopo Frascaroli, Lorenzo Pia and Irene Ronga
University of Turin, Italy

In neuroaesthetic field, several studies support the hypothesis that stimuli we subjectively prefer benefit from perceptual and learning-processes facilitation. Accordingly, aesthetic preference has been found to influence attention and memory, being shaped by both individual and contextual factors. Therefore, it seems reasonable to postulate that aesthetic preference might grant perceptual stimuli privileged access to awareness. However, to the best of our knowledge, this hypothesis has never been tested before. The present study was specifically designed to explore this idea. Participants were enrolled in an experiment using the breaking Continuous Flash Suppression (b-CFS), an interocular suppression paradigm in which a visual mask showed to one eye gradually disappears until an initially invisible target stimulus, showed to the other eye, becomes consciously perceived, and a reverse version in which the target fades out until it disappears from awareness. Abstract images were used as targets and participants were asked to rate their beauty verbally. We recorded the time it took for each stimulus to enter awareness and the time it remained visible in the reverse task (i.e. the measures of dominance in awareness). A mixed-model analysis assessed the extent to which low-level features (i.e., distribution of spatial frequency) and subjective preference predicted awareness access and dominance. Preliminary results show that low-level features, when included as the only predictor, can successfully explain dominance time. However, when aesthetic preference is added to the model, it results the only significant predictor, with longer dominance and faster access time for preferred images. These preliminary findings suggest that subjective preference influences stimulus prioritization into visual awareness. Overall our study contributes to expanding our understanding of the processing of perceived beauty and highlights the role of preference as a pivotal factor to enhance sensory perception and learning processes.

P1 **Unbound Dialogue: Exploring the Perception of AI-Mediated Art**

Michiel Willems[1], Stefanie De Winter[1], Koenraad Brosens[1], Johan Wagemans[2]
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[2]Laboratory of Experimental Psychology, Department of Brain and Cognition, University of Leuven, Belgium (KU Leuven), Belgium

Despite its ubiquity within research and society, the study of AI-mediated art remains superficial and lacks depth. This research exhibition presented nine artworks by contemporary artists: Alexandra Crouwers, Canek Zapata, Daan Couzijn, Estelle Flores, Mathias Mu, Marnix van Soom and Rodell Warner. The artworks utilize AI in diverse

ways, employing different media, including paintings, sculpture, screens and projections. As the works were curated by an art historian in a gallery setting, the present study contributes to the existing body of knowledge from other studies that mainly focus on AI-generated art by presenting authentic works created by early and mid-career artists. The study comprised a total of 39 participants. 26 of these were able to visit the exhibition on their own, without context or time constraints. They then took part in an in-depth interview and completed a questionnaire, aimed at gaining insights into how participants perceive the use of AI in art. The remaining 13 participants were able to visit the exhibition with context and only completed the questionnaire. We focused on how they experienced such a multimedia exhibition and what it meant to them that the artworks were mediated by AI. Additionally, we looked at the role of different kinds of screens, and the presence of new digital technologies in art. The results show a marked discrepancy between the critical openness to understanding the role of AI and other digital technologies in art, and their appreciation of the specific artworks in the context of this exhibition. The predominant explanation for this discrepancy is probably the lack of a framework for viewing this type of art. This study therefore provides new insights for psychology and art history into how AI-mediated art is perceived and lays the groundwork for further research into what it means for art to be mediated by AI.

Poster session #2
Art History, Photography & Experiencing Art

Friday August 22, 2025 10:15-11:45
Location: Foyer

P2 **Contour Erasure Filling-in**

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Contour erasure is a compelling visual phenomenon where low-contrast objects vanish or are perceptually filled in by the background after adaptation to flickering contours that align with the objects' edges. This rapid disappearance underscores the critical role of edge information in object and surface perception, highlighting mechanisms underlying perceptual filling-in. In typical visual experiences, borders of objects fade gradually; however, contour adaptation accelerates this process, leading to an almost instantaneous filling-in effect. This adaptation likely occurs early in the magnocellular

pathways, emphasizing the importance of dynamic edge information in visual processing. Our demonstrations showcase various instances of the contour erasure effect, including both classic examples and recent variations developed since its initial discovery. These examples illustrate how flickering contour adaptation can lead to the perceptual disappearance of objects, offering insights into the interplay between edge detection and surface perception. Understanding contour erasure not only sheds light on the processes of visual perception but also provides a window into the neural mechanisms of perceptual filling-in. By examining how the visual system compensates for missing information, we gain a deeper appreciation of the complex interactions between different visual pathways and the brain's interpretative processes. Join us to explore these fascinating demonstrations and delve into the mechanisms that allow our visual system to construct coherent perceptions from incomplete information.

P2 **Myopic Dreams**

Joshua Martin
Centre for Cognitive Science, Institute of Psychology, Technical University of Darmstadt, Darmstadt, Germany., Germany

Myopic Dreams explores the perceptual and aesthetic roles of blur and out of focus highlights ("bokeh") in photography. Traditionally, these elements serve to isolate subjects, directing attention toward sharper focal points within an image. In contrast, blurry images with no in-focus subject are generally considered aesthetically unappealing (Graham, 2020) and are strongly related to poor image quality (Ke et al., 2006). This series aims to offer a different perspective on these conventions by repositioning blur and bokeh as compositional and aesthetic subjects in their own right. A core feature of the series is the use of vintage lenses from the 1960s-1980s. Unlike current lens designs engineered for precision and clarity, these older lenses have distinctive, often unpredictable visual artifacts, such as swirls, halos, and veiling flare. This work reclaims these optical quirks as features rather than flaws, showcasing the ability of vintage optics to render unique images with a soft and dream-like character. The intentional blur in the photographs can interrupt the usual visual search for sharp subjects. Without an obvious focal point, attention may shift toward more subtle elements like light, shape, and atmosphere. This visual ambiguity destabilizes conventional figure-ground relationships, thereby facilitating a more diffuse and open-ended way of perceiving and interpreting the image. References Graham, D. (2020). The use of visual statistical features in empirical aesthetics. The Oxford Handbook of Empirical Aesthetics, 447-474. Ke, Y., Tang, X., & Jing, F. (2006). The design of high-level features for photo quality assessment. 2006 IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR'06), 1, 419–426.

P2 **The illusion of absence in the arts of magic and photography**

Vebjørn Ekroll[1], Pierre-Pascal Forster[2], David Szymanski[3], Rob van Lier[2]
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[2]Donders Institute for Brain, Cognition, and Behaviour, Radboud University, Nijmegen, Netherlands
[3]Artist, United States

The illusion of absence is a recently described perceptual illusion in which the space behind an occluder is experienced as compellingly empty. It has been proposed that this illusion plays a central role in many magic tricks and also that it may play a role in road accidents involving obstructions of view, such as the windscreen pillar. The same illusion also seems to play a role in the art of photography. The work of the Finnish-American photographer Arno Rafael Minkkinen, for instance, is replete with many stunning body illusions which seem to be due to the illusion of absence, such as his "Self-portrait, Jamestown, Rhode Island, 1974". In this presentation, we provide various demonstrations of the illusion of absence from the arts of magic and photography and discuss them in light of what is currently known about the underlying perceptual visual mechanisms. Supported by the Research Council of Norway, project number 334817.

P2 **Transforming People through Artistic Photographs of the Everyday—Insights from Artistic Practice and Scientific Scrutiny**

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[2]Department of General Psychology, University of Bamberg, Bamberg, Bavaria, Germany, Germany

Photography is often seen as a trivial way to document persons and things which we perceive in moments of time. This documentation mode seems to work as a reminder of past events when looking at the photographs again, however, such pictures have a much deeper meaning and a much more complex function for us. Actually, if made properly, they let us re instate and re-process emotional and cognitive states and re-experience and re-enact life episodes. In this paper, we want to look at artistic photographs depicting everyday scenes as a possibility to act as an inner mirror, reflecting our emotions, thoughts, and inner states. We can inform, guide, and train people through workshops to use photography as a tool for emotional expression and self-awareness, gain insights into their feelings, and learn to regulate their emotions more effectively. We will show material, practices, and outcomes of such workshops to demonstrate the transformative power of photography regarding personal growth and wellbeing.

P2 **Visualisation of uncertainty when combined with photomontages**

Dominik Lengyel[1], Catherine Toulouse[2]
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[2]Lengyel Toulouse Architects Berlin, Germany

The Duchess Anna Amalia Library, part of the UNESCO World Heritage Site 'Classical Weimar', became known to the public after the devastating fire in 2004, which destroyed much of the unique Rococo hall. Photographs were available, and reconstruction began quickly. Just three years later, the library was reopened. While the visible surfaces of the most important structural elements were restored largely true to the original, attentive visitors will notice a more economical design on less prominent surfaces, where some details have been simplified. More interesting than this obvious break in the authenticity of the material heritage, however, is another circumstance whose roots go back to a much earlier redesign. The book 'Das Rokoko in der Herzogin Anna Amalia Bibliothek' (Rococo in the Duchess Anna Amalia Library) describes how the hall was furnished in 1766, in contrast to its current state. The differences are particularly interesting in that the current furnishings were originally designed by none other than Johann Wolfgang von Goethe. Although he added busts, paintings and some architectural details of his time, the Classicist period, the remaining furnishings are significant enough to give an idea of what the hall meant before. The aim of this collaboration with the Duchess Anna Amalia Library of the Weimar Classic Foundation was to translate this verbal description, which is available in its entirety in the above-mentioned book, into a visual representation. As in the contributions to the VSAC in 2022 and 2023, the problem of uncertainty in knowledge arises in many less prominently located areas of the library. Making the transition from photomontages to visualisations of uncertainty convincing is a particular challenge, especially in terms of design, given the intention to model the state of 1766 in the viewer's imagination.

P2 **The Unstretched Truth: A Non-Stretchable Cloth Model of Vermeer's Painted Map**

Alexander Pastukhov, Claus-Christian Carbon
University of Bamberg, Germany

The Art of Painting, also known as The Allegory of Painting, is a Barock oil-on-canvas-painting by Jan Vermeer, completed between 1666 and 1668. It is Vermeer's largest and most intricate work and is widely regarded as one of the most iconic paintings in Western art. The scene is set in a room in Delft and shows an artist—likely Vermeer himself, portrayed from behind—painting a model in classical attire. The objects in the room are thought to reflect the beliefs and intellectual atmosphere of the time. While most depicted objects have not survived, and their spatial accuracy cannot be verified, one key element remains intact: the large map of the Low Countries hanging on the back wall. Originally published by Visscher in 1636, this map survived in a few copies. We

used a high-resolution scan of one such copy, which preserves the original geographical information, differing only in minor decorative details. To evaluate the fidelity of Vermeer's painted map, we employed a physical modeling approach, treating the map as a foldable but non-stretchable cloth. Geographical landmarks were identified as fixed points of certainty. Our model sought to minimize three key factors: (1) the change in distances between each landmark and its neighboring nodes, (2) the stretching of edges caused by displacements, and (3) the overall displacement of individual grid points. This approach allowed us to account for the visible folds and warps in the painted map while maintaining geographic consistency. The resulting high degree of alignment between the painted and original map underscores Vermeer's meticulous accuracy—likely supported by his access to advanced optical tools developed in the same town, possibly by his contemporary Antoni van Leeuwenhoek, inventor of the microscope, but also a classmate and dear friend, living in the Vermeer's neighbourhood.

P2 **PROFILING THE IMAGE OF JESUS**

Ammara Nasim, Vera M. Hesslinger, Claus-Christian Carbon
Department of General Psychology, University of Bamberg, Bamberg, Bavaria, Germany, Germany

Several Byzantine icons showing Jesus share a common characteristic: The face of Jesus is depicted in a markedly asymmetric way. Looking at the eyes, the asymmetry becomes especially apparent with the right eye (from the viewer's perspective) being larger than the left eye. According to some speculation, this asymmetry was used deliberately to visualize the duality of Jesus. His divine nature is thought to be represented on the right (from the viewer's perspective), and his human nature on the left. In a series of studies, we assess the impressions elicited by depictions that exhibit said specific asymmetry. As stimuli, we use digital reproductions of three Byzantine icons and three photorealistic images of male heads built by AI on the basis of the icons. For each of the six depictions, we additionally generated a mirror version of the original and two symmetrized variants created by mirroring the original's left or right eye, respectively, and inserting it in the other half of the face. Utilizing qualitative (free associations) and quantitative measures (ratings for being beautiful, attractive, introverted, vulnerable, powerful, strong-willed, and extraordinary), we built a profile of Jesus' image represented in the original asymmetric depictions as compared to the mirrored and the symmetrized variants. Connecting the found profile with findings from empirical face research, we discuss the option that the creators of Byzantine icons might have drawn on an intuitive understanding of the mechanisms of face perception to convey a complex concept of Jesus. This interdisciplinary approach offers insights into the psychological efficacy of traditional religious art.

P2 **Archaeology of mind. Relationship between prehistoric art, visual behaviour and social structure**

Manuel Santos-Estévez
INCIPIT-CSIC, Spain

The XSCAPE project studies the forms of the interaction between mind and material culture. It explores how objects influence, through the perceptual stimuli they produce, especially visual ones, cognitive processes. Does the material culture we construct, and as such art, transform our minds and our way of processing information? This study shows the first results of experiments developed with eye-tracking technology and the analysis of observer positioning applied to prehistoric art. In particular, experiments have been carried out with rock art in four rock art regions with chronologies ranging from Mesolithic hunter-gatherer rock art to the Iron Age, including the Neolithic and Bronze Age. The study of prehistoric art offers the advantage of being able to observe very long-term historical changes. A variety of socio-cultural forms is covered, from relatively egalitarian communities to social formations based on hierarchisation and aristocracies. The first results suggest that in hunter-gatherer societies, which are generally more egalitarian, horizontal movements of the gaze predominate, whereas from the Neolithic onwards, visual behaviour in which vertical movements predominate began to be observed. How can this difference in visual behaviour between societies be interpreted? We present the hypothesis that material culture is not only the result of the materialisation of ideas, but that it also conditions our way of thinking. In this process, focusing on forms and structures, art is primarily conceived as a spatial pattern. In some cases, it is to be expected that there are coincidences or parallels between the spatial structures underlying different phenomena of the material culture of the same socio-cultural formation. Some of these can also be expected to correspond to culturally determined ways of thinking, which correlate with distinctive types of social organisation and levels of social complexity and hierarchy.

P2 **An Eye Tracking Study on Symmetry and Golden Ratio in Abstract Art**

Mariapia Lucia[1], Claudia Salera[2], Pierpaolo Zivi[1], Marco Iosa[1], Anna Pecchinenda[3]
[1]Sapienza University of Rome, Italy
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[3]sapienza unviersity of rome, Italy

A visual stimulus that is divided in harmonic proportions is often judged as more pleasant than others. This is well known by artists that often used two main types of geometric harmonic patterns: symmetry and the golden ratio. Symmetry refers to the property of an object to have two similar halves, whereas the golden ratio consists of dividing an object in a major and a minor part so that their proportion is the same as that between the whole object and its major part. Here we investigated looking behaviour and explicit preferences for different regularities including symmetry and golden ratio. We selected

four Mark Rothko's paintings, a famous abstract expressionism artist, characterized by two main areas depicted by different colours: one symmetric (ratio between areas: 50–50%), one in golden ratio (38–62%), one in an intermediate ratio (46–54%), and one in a ratio exceeding the golden ratio (32–68%). Thirty-six healthy participants (24.75 ± 3.71 years old) completed three tasks: observation task (OT), pleasantness task (PT), and harmony task (HT). Findings for explicit ratings of pleasantness and harmony were very similar and were not significantly correlated with patterns of looking behaviour. Eye Dwell Time mainly depended on stimuli orientation ($p < 0.001$), but for the harmony task also by ratio and their interaction. Our results showed that the visual scanning behaviour of abstract arts primarily depends on the orientation of internal components, whereas their proportion is more important for the pleasantness and harmony explicit judgments.

P2 **Who is afraid of abstract art? On the different processing of abstract and figurative artworks**

Itay Goetz, Claus-Christian Carbon, Jennifer Tesch
Department of General Psychology and Methodology, University of Bamberg, Bamberg, Bavaria, Germany, Germany

The origins of abstract art date back to ancient times. Despite that, in the Western world, abstract art is mainly assigned to the artistic developments of modern times and considered a relatively inaccessible style. Often viewed as elitist and less engaging for novices, its lack of clear representation can hinder immediate emotional connection. The present study explored how art novices (N=32) engaged with figurative and abstract artworks in a Virtual Reality (VR) gallery. Participants completed two interviews post-visit, which were analysed using Interpretive Phenomenological Analysis (IPA). Figurative art was more readily understood, evoking personal associations and emotional responses with ease. Abstract artworks, however, initially caused confusion and detachment. Yet, when participants committed to engaging with them, they employed more elaborate associative thinking and focused closely on visual elements like colour and form. These deeper engagements often led to intense emotional experiences, which were not recorded with figurative artworks. Thus, we propose that abstract art, though demanding, can evoke uniquely profound and varied responses in viewers.

P2 **Closer to Color Fields: Revealing the Microscopic Landscapes of Color Field Painting**

Stefanie De Winter
KU Leuven, Belgium

What can we learn from moving closer—not to the figurative richness of a Van Eyck—but to the chromatic expanses and material specificity of Color Field painting? This presentation explores how material analysis deepens our perceptual understanding of two major works by Frank Stella and Morris Louis. Using techniques from conservation science, including pXRF, infrared imaging, and Hirox (3D) microscopy, I uncover fine-grained material behaviors invisible to the naked eye: pigment bleeding, binder migration, the interplay of matt and gloss, and subtle surface texture variations within single layers of paint. The analyses of Stella's Effingham I offer new insights into the material and procedural dimensions of the work. Pencil lines structuring the composition are visible, but infrared imaging reveals subtle slips and overextensions—moments where the hand hurried or strayed. These traces expose a rare glimpse of human immediacy beneath the controlled surface. Hirox imaging reveals Stella's material vocabulary: the contrasts between fluorescent and conventional pigments, local surface modulations of gloss and texture, and features suggestive of pigment-medium mixtures possibly prepared by the artist, opening hypotheses that GC-MS analysis will further substantiate. In Morris Louis's Alpha Sigma, material analyses reveal surprising variations despite the uniform use of diluted Bocour Magna paints. Differences in pigment type lead to diverse surface behaviors—glossiness, pigment bleeding, and textural differentiation. Hirox imaging brings into view poetic micro-landscapes, opening new ways to experience Louis's abstraction. These material traces offer new insights into the artists' working methods and conceptual choices—such as Stella's use of household paints and tools and Louis's nuanced handling of acrylic staining—rendering artistic intentions materially legible. After travelling microscopically across these surfaces, our perception fundamentally shifts: from distant chromatic fields to tactile, material worlds. This shift offers new insights for conservation practices and challenges established art theories and criticisms of abstract painting.

P2 **The potential of art exhibitions by self-advocates on the spectrum to shape viewers' attitudes toward autism: The contextual information matters**

Magdalena Szubielska[1], Joanna Dreszer[2], Tobiasz Trawi ski[3], Bibianna Bałaj[2], Arkadiusz Gut[4]
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An increasing number of artists with disabilities are seeking to amplify their social presence by organizing self-advocating exhibitions that share their unique experiences. One example of such efforts was an exhibition of autistic women networked in the "Female A*tists" collective. In the present study, we investigated the viewers' aesthetic experience of these artists' artworks in the gallery settings, depending on whether contextual

information was provided (experimental group) or not (control group). The contextual information included the curatorial outline of the exhibition on the female autism phenotype and artists' personal experiences related to being autistic. Aesthetic experience was measured in terms of evoked arousal, positive and negative emotions, identifying a work as art, liking, and subjective understanding. We also explored whether providing contextual information would change attitudes toward people on the autism spectrum by measuring perceived similarity, emotional warmth, and social acceptance of autistic people before (pre-test) and after (post-test) viewing the exhibition. Seventy-seven participants viewed and rated eight artworks one by one. As predicted, contextual information had a positive influence on aesthetic experience. Specifically, the experimental group experienced higher levels of arousal, positive emotions, recognition of a work as art, greater liking, and enhanced subjective understanding. At the same time, the effect of contextual information did not boost the positive attitudes toward people with autism, since both groups perceived autistic individuals as more similar to their own in the posttest than in the pretest. Our findings suggest that self-advocacy artistic activities may be effective predominantly when the information about authors' neurodiversity is explicitly provided, which can have implications when planning and implementing artistic self-advocacy campaigns.

P2 **Beyond Mere Objects: Understanding Embodied Subjectivity in Dementia Care**

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Dementia is a progressive, incurable condition marked by the gradual loss of cognitive and functional abilities. It serves as an umbrella term for a spectrum of disorders, including Alzheimer's disease and vascular dementia. According to the World Health Organization(Dementia, 2023), more than 55 million people were living with dementia in 2023, with approximately 10 million new cases emerging each year. Amidst the cognitive decline associated with dementia, the persistence of selfhood remains a vital thread for wellbeing. Kontos argues that even as verbal communication fades, selfhood endures — expressed through the subtle language of gesture and bodily movement(Kontos, 2005). In this context, material objects become far more than passive tools; they act as vital conduits of memory, identity, and emotion. Objects are the bridges through which individuals with dementia engage with the world, offering researchers and caregivers profound insights into the embodied experience of self. The emotional resonance and personal histories embedded within these objects reveal a delicate, often overlooked tapestry of connection — a material expression of continued personhood. This research aims to investigate how the subjective experience is evoked through the material objects that people with dementia interact with. By identifying aesthetic themes and emotional patterns,

the study seeks to support the wellbeing and lived experiences of people with dementia. It also offers critical guidance to designers, caregivers, and policymakers on selecting and creating objects that foster meaningful engagement. Furthermore, it highlights the role that advanced assistive technologies can play in enriching the material encounters, reinforcing the aesthetic and emotional dimensions of care. Reference: Dementia (no date). Available at: https://www.who.int/news-room/fact-sheets/detail/dementia (Accessed: 22 October 2024). Kontos, P.C. (2005) 'Embodied selfhood in Alzheimer's disease: Rethinking person-centred care', Dementia, 4(4), pp. 553–570. Available at: https://doi.org/10.1177/1471301205058311.

P2 **Framing the Artist: The Impact of Schizophrenia Narratives on Art Perception**

Andreas Kireev, Anne C. Kleindienst, Sophie Reichard, Jakob Kilian Heiss, Lena Schädlich and Alexander Pastukhov, Claus-Christian Carbon
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Labels of mental illness often trigger stereotypical assumptions about an artist's individual perception, creative skills, motivation and the artistic expression of their work. Our current study investigates how biographical information – specifically the presence or absence of a mental illness diagnosis – affects viewers' emotional and aesthetic responses to visual artworks. We focus on schizophrenia as a key narrative element in the artist's biography to explore whether knowledge of a psychiatric condition influences perception and evaluation of the art. In a preliminary online study, each participant will be shown four artworks by four different artists. Each piece of art will either be framed by a neutral biography or a biography that refers to the artist's schizophrenia (e.g. hallucinations, hearing voices, paranoia, delusion and thought interference). We hypothesize that the presence of schizophrenia in the biography will lead to stronger emotional reactions and higher aesthetic ratings, compared to both neutral biographies and a control condition without any biographical context. These effects are assessed using self-reports of emotional and aesthetic responses based on existing literature and diagnostic measures, which were modified and adapted for the recent study by the research team. Building on these results, a subsequent follow-up study will be conducted in the laboratory, which additionally incorporates physiological measures to further enlighten the underlying mechanisms of our results. The findings aim to contribute to a deeper understanding of how narratives about mental illnesses, in this case schizophrenia, shape the perception of art, and how they may reinforce or challenge existing stereotypes.

P2 **The effect of emotion assignment on the combination of rounded and angular geometric shapes: A difference between adolescents and adults**

Sofija Ponomarjova[1], Liga Zarina[2], Jur is Š ilters[2], Solvita Umbraško[2]
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Shape segmentation, combination, and relative sensitivity to symmetry are age-sensitive (e.g., Hu & Zhang, 2019, Zarina et al., 2024). Further, rounded shapes are preferred, and angular shapes are typically linked with negative emotions (Bar & Neta, 2006). Additionally, symmetry is a crucial factor in perception and aesthetics (Palmer, 1985, Bertamini & Rampone, 2019). In our study, we tested whether selection and combination of figures is valence-dependent and whether there are age-related differences in selection and combination of shapes with respect to roundedness and symmetry. In a between-group study, we tested gender-balanced groups of adolescents (n=38, mean age 15.1, SD=1.62) and adults (n=43, mean age 30.9, SD=12.43). Participants were provided with 13 geometric figures that were selected according to their symmetry features. From these figures participants had to choose two figures and create three 'happy' combinations and three 'sad' combinations in a random order. The results show that in general participants are more likely to choose rounded shapes for happy and angular shapes for sad combinations. However, adolescents have a stronger preference for angular, whereas adults – for rounded shapes, and this tendency is observed for both happy and sad combinations. According to the analysis of symmetry of figure combinations, all participants form more combinations that are symmetrical in the case of happy than sad combinations. Our results also allow to summarize (a) typical features and relations in the combinations: the topological relations and types of contact (along an edge or at a point) between the figures, (b) the use of the geometric properties of the figures (curvature, corner, axis of symmetry or center, midpoint).

P2 **Exploring the relations of being moved to other emotions and aesthetic evaluation**

Andreas Gartus, Xiaohan Zhou, Helmut Leder
University of Vienna, Austria

Being moved is a complex human emotion that is often considered to be an aesthetic emotion. It is evoked by nature and art, but also by critical life events, significant relationships, and political events. Specifically, sadness and joy are considered to be the major emotions involved in episodes of being moved, leading to sad and joyful variants. Thus, being moved can be regarded as a mixed emotion containing both positive and negative affect. We selected 350 images from the Social-Moral Image Database (SMID) and

asked 120 participants to rate them on the 20 emotion dimensions of the Geneva Emotion Wheel (GEW), valence, arousal, being moved, and liking. Each participant rated 70 of the 350 images, resulting in 24 ratings per image and rating scale, averaged to generate mean ratings. First, being moved was positively correlated with an indicator of mixed emotions (r = .60) and a measure of emotion complexity (r = .85), both derived from the GEW. This confirmed that being moved is a mixed and complex emotion. Second, we found being moved strongly correlated with the emotion of compassion (r = .82), while liking mostly correlated with valence (r = .92). However, being moved and liking were basically uncorrelated (r = -.01). Scatter plots revealed an inverted u-shaped relation between being moved and liking, suggesting that medium levels of being moved have the highest potential for liking. Furthermore, when distinguishing between the two variants of being moved, a clear positive relation between being moved and liking was found for joyfully moving (joy > sadness) images (r = .71). In sum, we could demonstrate complex relations between being moved, other emotions, as well as aesthetic evaluation, in line with previous findings. Further research is needed to investigate factors possibly influencing these relations.

P2 **CRYING IN FRONT OF ART**

Vera M. Hesslinger, Claus-Christian Carbon
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When Marina Abramovi did her performance "The Artist is Present" in the Museum of Modern Art, New York, one could repeatedly observe people moved to tears. Participants in the performance started crying, as did museum visitors who had come to watch. Mark Rothko once stated that many people cried in front of his paintings as he "communicated […] basic human emotions" with his work. He further suggested that those people shared the religious experience he had while painting. With the present study, we take up the phenomenon of crying related to art. The starting point of our investigation was the following prompt posted on Instagram in February 2023 by Jerry Saltz, highly influential senior art critic at the New York Magazine: "Artists: Have you ever cried in front of a work of art? Name one work that brought you to tears. And possibly, why. What do you think happened? What were you thinking? Speak memories." We randomly sourced five hundred written statements from the comments made within three days after the original posting of the prompt. Based on this material, we generated a list of the artworks that were most frequently mentioned as triggers of crying. Using Interpretative Phenomenological Analysis (IPA), we also developed an overview of the variety of crying in front of art and a catalog of key qualities of artworks and art experiences that evoke crying. We discuss our findings referring to James Elkins' publication "Pictures and Tears", where he elaborates on people crying and not crying in front of art throughout history.

P2 **From Preliminary Findings to a Large-Scale Diary Study: Investigating Aesthetic Experiences in Everyday Life**

Gemma Schino[1], Lisa-Maria van Klaveren[2], Cristina Buzzo[3], Bilge Sayim[4], Ralf Cox[1]
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Aesthetic experiences (AEs) are often described as intense, meaningful and deeply emotional. Buzzo and Sayim's (2023) online study on everyday AEs characterized them as highly important and intense (M=5.5 and 5.8, respectively on a 1-7 scale), capable of momentarily altering one's time perception (for 68% of the sample, N=101). Similarly, Schino, van Klaveren, and Cox (2024) conducted a pilot diary study (N=61, 226 entries), and found 64.6% of AEs featured temporal distortions. Their results also revealed that, regardless of prior mood, positive emotions were predominant, with nature being the most frequently reported trigger (36.7%). Additionally, mind-wandering (MW) occurred in 38.9% of cases, correlating with emotional arousal, while emotional intensity was significantly predicted by art interest. This poster sets out to corroborate and extend the preliminary evidence of these studies by presenting a longitudinal research using a Qualtrics online survey as a diary tool, allowing participants to document AEs in real-time. Participants can describe details such as the level of intensity, the different triggers of the experiences, temporal aspects such as examining how these experiences unfold over time, and cognitive and emotional factors that shape them. Data will be collected through validated questionnaires and single-item open questions to provide an in-depth exploration. The overarching aim is to define the nature and prevalence of AEs in everyday life, focusing on how mind wandering, emotions, self-reflection, insight, art interest, and knowledge interact and vary across individuals (e.g., age, sex, gender).

P2 **The cute, the zany and the interesting: Vernacular aesthetic categories in verbal reactions to everyday objects**

Stefan A. Ortlieb[1], Estelle E. E. Krewiss[2], Claus-Christian Carbon[1]
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How do people express pleasure and displeasure in everyday experience? In Our Aesthetic Categories, Ngai (2012) asserts the importance of three colloquial terms for contemporary everyday aesthetics: The cute, the zany and the merely interesting. The cute refers to something small, delicate, or pitiable that can evoke tender feelings of affection as well as aggression (cute aggression). The zany describes something that amuses

us through its strangeness and eccentricity. The interesting, unlike the cute or zany, involves an experience that may deviate from aesthetic norms, but captures our attention and arouses our curiosity. In light of Ngai's claim, we analysed 418 verbal reactions to 21 digital photos of everyday objects from the Bamberg Repository of Contemporary Kitsch (BaRoCK; N=61; 21 male; 39 female; 1 other). As a result, twenty-nine per cent of these spontaneous verbal associations were attributable either to the cute (13%; e.g. cute, sweet, nice, pretty, lovely, cuddly), the zany (13%; e.g. funny, goofy, crazy, weird, bizarre), or the interesting (3%; interesting). Although the BaRoCK-stimuli were hardly described as interesting, more associations were classified either as cute or zany (26%) than as kitschy (22%; kitschy, Kitsch). These findings support Ngai's claim that trivial concepts of everyday aesthetics are not at all minor in the sense of marginal or unimportant, but deserve just as much attention as, say, the sublime and the beautiful. This seems to be particularly true for the zany that has so far been overlooked by empirical aesthetics altogether.

P2 **The transformative potential of cultural heritage: a neuro-physiological study.**

Kalliopi Ioumpa, John Stins, Nadia Dominici
Vrije University Amsterdam, Netherlands

Recent years have seen growing evidence of the positive impact of art experiences on human wellbeing. This project explores the transformative potential of cultural heritage, using an integrative approach that combines behavioral, neural, and physiological measures. Healthy adult participants perform a laboratory-based task involving two experimental conditions. In one condition, they engage with audiovisual stimuli consisting of documentation of cultural heritage artifacts presented in either a neutral or emotionally expressive way. In the other condition, participants view validated stimuli with positive, negative, or neutral valence, matched to the heritage stimuli. Throughout the task, participants stand on a force platform to record their Center of Pressure (COP), a marker of subtle postural shifts. In parallel, EEG recordings capture brain activity, and a wearable wristband device records physiological responses. The COP data analyses offer insight into bodily responses: emotionally engaging stimuli are expected to reduce sway variability due to attentional capture, elicit backward leaning in response to negative stimuli, and forward leaning in response to positive stimuli. EEG analyses focus on estimating an approach–withdrawal index, based on frontal alpha asymmetry, and a cognitive effort index, based on theta-band activity. Finally, skin conductance level serves as an indicator of arousal. By combining different measures, this study seeks to deepen our understanding of how cultural heritage experiences shape cognitive and emotional states. Ultimately, it aims to provide evidence-based insights for cultural professionals on designing emotionally resonant and mentally enriching encounters with heritage.

P2 **Visualizing artistic style based on neural style information: spatial mapping of fine art within a broad range of natural and artificial images**

Isamu Motoyoshi, Tomomi Ito, Mahiro Hirata
The University of Tokyo, Japan

In our previous study, we analyzed representational similarity of CNN-based style information among ~18000 classical Western paintings (Motoyoshi, 2023, VSAC). Here, we extended the analysis to a broader range of images, including fine-art paintings from 15 to 21 centuries, anime and manga, industrial design posters, and natural scenes and objects. Using CNN neural style features (Gatys et al., 2016), we computed pairwise distances and visualized the similarity with multidimensional scaling (MDS). The resulting spatial distribution formed a 'delta-like' structure, with most images clustering inside it. At the apex were 16th–18th century Western paintings, East Asian classical artworks, and Impressionist pieces—images close in style to natural photographs, indicating a shared degree of realism. In contrast, contemporary art, manga/anime, and industrial design were scattered across the delta's base, indicating diverse deviations from realism. Minimalist works appeared distinctly outside the delta. Historical trends showed movement from the delta's center to the apex during the Renaissance–Baroque period, peaking at Rembrandt's chiaroscuro. The 18th–19th centuries (e.g., impressionism) returned toward the center with broader dispersion. Ukiyo-e occupied a separate region from coeval Western art. The 20th century brought a dramatic expansion toward the base, with pop art (e.g., Lichtenstein) at the farthest point from realism, while abstract expressionism (e.g., Pollock) remained near the center. Comparative analyses revealed pop art's proximity to anime/manga and the alignment of geometric abstraction (e.g., Mondrian) with industrial design. These spatial relationships highlight how artistic styles diverge, converge, or cross domains in a broader visual space beyond traditional fine art categories.

Poster session #3
Embodiment, Material and Object Perception Beyond Vision, Technological Advancement & Datasets)

Saturday August 23, 2025 10:15-11:45
Location: Foyer

P3 **Playful Body Movement and Personality Trait in Embodied Creative Thinking Enhancement in Adults**

Mirei Yazawa, Joydeep Bhattacharya
Goldsmiths University, United Kingdom

Play is often associated with creativity in children, and it has an important role in cultural, social and biological evolution. Yet, the relationship between play and creativity in adults remains underexplored. Research shows that simple verbal prompts like imagining oneself as a child can boost adults' creativity (Zabelina & Robinson, 2010; Christensen et al., 1957; Nusbaum, 2014), suggesting that creative thinking is malleable through contextual cues. A recent model of play argues that the essence of play lies in the deliberate search for and generation of surprising situations (Andersen et al., 2023), suggesting that adopting a playful mindset, even nonverbally, boost creativity. This study investigated whether playful, improvisational body movement could serve as such a catalyst. While the body is often treated as an object of exploration for children, adults typically engage with it in goal-directed ways. We hypothesised that reactivating the body as a medium for open-ended exploration could evoke childlike creativity in adults, paving the way for creativity enhancement. Fifty-eight adults completed the Alternative Uses Task (AUT), a classical test for divergent thinking, following either a playful or non-playful movement intervention. Trait playfulness was also measured. Results showed that playful movement significantly enhanced originality, particularly in individuals with low trait playfulness. In contrast, fluency improved when the movement style matched participants' playful personality (e.g., playful movement for highly playful individuals). This study advances the literature by introducing two methodological additions: (i) the development of behavioural markers to systematically manipulate and assess the degree of playfulness in body movement, and (ii) a fine-grained analysis of how different styles of embodied movement interact with individual differences in trait playfulness to affect specific components of creative performance (e.g., originality, fluency). These findings provide a more nuanced understanding of how embodied interventions can be tailored to enhance creative thinking in adults.

P3 **Cultural modulation on our interpretation of emotional body expressions**

Chiahuei Tseng[1], Rongdi Zhang[2], Miao Cheng[1], Ken Fujiwara[3], Shoi Higashiyama[1] and Yoshifumi Kitamura[1]
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Body actions are known to be a sufficient and reliable cue for emotional recognition even with minimum presentation of major joints as points-light-stick-figure. However, it is still a challenge to construct a system that reliably and automatically detects and generates

emotional expressions. One major challenge is that we usually use our bodily movements as a communication tool, which is greatly shaped and modulated by social contexts. Here we conduct a cross-cultural comparison to examine whether we are superior at interpreting our cultural group members' emotions exclusively from body movements like from facial and vocal stimuli. We invited 48 Asian and 48 non-Asian participants to report their perceived (1) arousal, (2) valence, (3) emotion category, and (4) reporting confidence of 70 full-body-skeleton motion. These motion videos were recorded from 10 Japanese professional performers expressing 7 emotions (joy, sadness, anger, surprise, fear, disgust, and contempt). We reported the first evidence of an in-group advantage in body emotional expression: Asian participants were faster, more accurate and confident in emotion recognition than non-Asian participants. The performance accuracy is positively correlated with participants' contact with Asian culture, but not their individualistic tendencies, suggesting a more dominant role of cultural display rules than attitudes towards self and community. Our findings expanded our knowledge about embodied emotion based on studies conducted with WEIRD (Western, Educated, Industrialized, Rich, and Democratic) population using simple motion (e.g. walking, knocking) by adopting Asian-based full-body expressions. This is a significant step to construct a holistic emotion framework from multi-model inputs and to illustrate how cultural contexts guide individuals to display and understand emotions.

P3 **Exploring Art through Playfulness: How Haptic Storytelling Impacts Children's Visual and Emotional Engagement with Art in Museum Settings.**

María Paulina Jaramillo Sánchez[1], Zsofia Pilz[2], Prof. Dr. Thomas Weitin[3]
[1]TU Darmstadt, Germany
[2]Ph.D. Candidate Leiden University, Netherlands
[3]German Studies - Digital Literary Studies - TU Darmstadt, Germany

Creating an innovative and playful learning environment for its visitors has been a challenge that museums have taken to heart in recent times, moreso when it comes to children. Attempting to capture their attention and incite curiosity within them is difficult to achieve in itself, but it becomes a much greater feat when presented with artworks and topics that are abstract in their form or complex in nature, originally geared towards a more mature, adult mind. Thus, the question arises of whether there is a difference in the way children engage with these artworks, and if there is a lasting impact in their minds left from the encounter when information is presented in a playful manner using Tonies, versus in a traditional way of regular museum labels as well as no labels or guides at all. This interest is gauged by the usage of eye-tracking data, written questionnaires and audio recordings in order to identify the time spent focused on the painting, whether they react visually to keywords from the guide, and whether they express sentiment cues of joy and playfulness throughout.

P3 **Form aesthetics of the blind: How touch and vision affect the aesthetic appreciation of three-dimensional forms**

Golfam Goodarzi, Ronald Hübner
Department of Psychology, University of Konstanz, Germany

Despite a growing interest in empirical aesthetics, research predominantly focuses on the visual modality, largely neglecting other senses. This is particularly true for aesthetic experiences conveyed through the haptic sense. Furthermore, the limited existing studies in this area primarily examine the aesthetic haptic effect of surface features like texture. To address this gap, we conducted a study on haptic form aesthetics, investigating how blind individuals aesthetically evaluate various objects. We also included sighted participants to explore the influence of visual experience, employing three conditions: touch only (blindfolded), see and touch, and see only. The stimuli consisted of diverse three-dimensional objects: an Archimedean spiral, a golden spiral, seven S-shaped figures with varying curvatures, and three polygonal shapes (curved or angular). Participants judged these objects based on aesthetic criteria. Our results indicate that touch and vision lead to different aesthetic preferences. Notably, for certain shape features, preference increased as the influence of vision decreased. For instance, the haptically preferred curvature of the S-shaped figures was more pronounced than the visually preferred curvature. Overall, our findings demonstrate that shape aesthetics mediated by touch differ significantly from those mediated by sight, especially for blind individuals with no visual experience. These results suggest that formal features intended to elicit positive aesthetic experiences should be modified or emphasized depending on the sensory modality involved.

P3 **Dawn of the highlight**

Maarten Wijntjes[1], Jeroen Stumpel[2]
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Fayum portraits are early surviving examples of strong pictorial realism, with lifelike rendering both of facial features and of materials. The portrayed resemble authentic individuals and are painted with highly skilled color and shading techniques. Moreover, the use of highlights is abundant and masterfully applied to the eyes and skin. According to Gombrich, this use of highlights is the "heritage of Apelles", the famous Greek painter described by Pliny, of whom no artworks survived. Thus, the highlights in Fayum portraits can be traced back to an even older painterly tradition. In this study, we investigated the influence of these historically first highlights on the perception of the portrayed. In an experiment (N=60), we let participants rate the physical condition (age and health), expression (valence and liveliness) and formal elements (three-dimensionality and shininess). We digitally removed highlights from 21 Fayum portraits: one version with no highlights at all, and one version with highlights in the eyes only. Thus, there were

three experimental conditions: original, eye-only and no-highlights. Three groups of 20 participants were shown 7 portraits per condition, which cycled per participant group, i.e. no observer saw different versions of the same portrait. The highlight removal did not affect the perception of age, health and emotional valence. It did affect the perception of liveliness where the no-highlight condition scored significantly lower than the original. The original was rated higher than both manipulated versions for three-dimensionality and shininess. In addition, three-dimensionality was also found higher for eye-only than no-highlights. A PCA analysis on the ratings of the original portraits revealed a strong correlation between all factors except age. That health, valence, liveliness and realisms are all correlated to shininess serves as substantiating proof that the use of highlights for the rendering of materials has a major impact on the perception of portraits.

P3 **Not always in the eye of the beholder: How pupillary highlights modulate gaze perception in portraits**

Federico Paulesu[1], Daniele Zavagno[1], Olga Daneyko[2], Rossana Actis Grosso[1]
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Building on the robustness of perspective, which describes the observer's tolerance for perspective distortions from the painter's viewpoint, and the Mona Lisa effect which describes the phenomenon where a depicted gaze appears directed at the observer, we examined the role of pupillary highlights in modulating the perception of direct gaze in portraits, aiming to explore how these visual cues contribute to the impression of being looked at. Four online experiments were conducted via Qualtrics platform. Stimuli included classical painted portraits and photographic portraits of Hollywood Golden Age actors. In Experiment 1, unaltered portraits were presented and participants judged whether the figure appeared to be staring at them, enabling categorization into (a) clearly staring and (b) ambiguous or not staring. Experiment 2 introduced five pupillary highlight conditions (i.e. original, no highlights, highlights positioned left, centre, or right), with participants rating their impression of being stared at on a 5-point Likert scale. Experiments 3 and 4 replicated Experiment 2 but with either the left or right eye of each portrait occluded. Results showed, in Experiment 2, an inversion of gaze perception ratings for photographic portraits when highlights were removed. Across Experiments 3 and 4, the position of pupillary highlights significantly influenced the perceived direction of gaze, with effects differing according to which eye was occluded. These findings underline the critical role of pupillary highlights in gaze perception, modulating the observer's impression of direct gaze in both painted and photographic portraits. Results support theoretical accounts of both robustness to perspective and the Mona Lisa effect, demonstrating how minimal image manipulations can alter socio-cognitive interpretations of visual stimuli.

P3 **How material sensory properties and individual differences influence the haptic aesthetic appeal of visually presented stimuli**

Marella Campagna[1], Rebecca Chamberlain[2]
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[2]Department of Psychology of the Arts, Neuroaesthetics and Creativity, Goldsmiths University of London, (UK), United Kingdom

Touch plays a crucial role for humans. Despite its centrality in sensory experiences, the field of haptic aesthetics is underexplored. So far, existing research has revealed that preferences in the haptic domain are related to stimulus properties and the Gestalt laws of grouping. Additionally, haptic aesthetics is influenced by top-down processes, e.g., stimulus familiarity, and is likely to be modulated by personality and expertise. To further our understanding of these influences on haptic aesthetic appraisal, the current study investigated the imagined haptic aesthetic appeal of visually presented material surfaces, considering the role of haptic expertise, Need for touch, personality traits. The results revealed a positive influence of familiarity, simplicity, smoothness, warmth, lightness, dryness, slipperiness and a negative influence of complexity on individuals' aesthetic responses. While the study failed to support the predicted influence of Need for touch and haptic expertise on aesthetic responses, results did reveal an influence of openness to experience, conscientiousness and neuroticism. Despite the limitations related to the indirect stimuli presentation (vision only), the findings contribute to the relatively unexplored role of bottom-up and top-down features in haptic aesthetics that might be incorporated into the design of consumers' products to better meet their preferences.

P3 **Is There a Circular Design Aesthetic? Insights from the Textile Industry**

Lotta Straube, Alexander Pastukhov, Anna Heuschkel, Lisa-Alexandra Gromer, Claus-Christian Carbon
Department of General Psychology, University of Bamberg, Bamberg, Bavaria, Germany, Germany

Linear product design focuses on a single-use lifecycle, where products are created, used, and then discarded as waste. In contrast, circular product design leverages systems that emphasize resource efficiency, reuse, recycling, and the regeneration of materials. Given its linear and ecologically harmful practices, the fashion industry urgently needs transformation and adopting more circular design approaches. One essential facet in consumers' decisions in textiles is aesthetics and so it is critical whether industries can provide a kind of "circular design aesthetic" which is unique and appealing. The present research explores this by analysing diverse case studies within the textile industry, which document implementations of circular design approaches, including material selection, production processes, designing for prolonged use, and end-of-life strategies. Alongside these industry examples, an empirical consumer study focusing on denim jeans pro-

vides insights into how these design principles are perceived by consumers. Ultimately, this knowledge will be instrumental in guiding designers and industries toward creating products that are circular in practice and resonate with consumers as sustainable and aesthetically pleasing.

P3 **Multimodal material perception of wood induced by visual and tactile cues**

Shino Okuda[1], Sae Miyata[1], Katsunori Okajima[2]
[1]Doshisha Women's College of Liberal Arts, Japan
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Tactile art using natural materials such as wood can make an exhibition more inclusive, immersive and memorable. The texture of wood material might have different impressions in visual and tactile cues. The purpose of this study is to clarify how visual and tactile perception of wood material induce multimodally the psychological evaluations for texture. We conducted three experiments on the texture of wood using twelve kinds of wood plate. In the visual experiment as Expt.1, participants observed one of the wood plates without touch. In the tactile experiment as Expt.2, they touch the surface of wood plate with no visual stimulus. In the visual-tactile experiment as Expt.3, they observed one of the wood plates while touching the surface of it. Participants evaluated warm-cold, smooth-rough, wet-dry, soft-hard, fine-coarse, light-heavy, natural-artificial, and worthy-unworthy with a Visual Analog Scale. The results of the Expt.1 showed that Japanese cypress was smoother than chestnut, white oak, teak, Chinese quince, walnut and rosewood ($P<.05$). In contrast, the results of the Expt.2 showed that rosewood was smoother than Japanese cedar, beech, Chinese quince and walnut ($P<.05$). Also, the results of the Expt.3 showed that rosewood was smoother than Japanese cedar and chestnut. These results indicate that perceived smoothness depends on the modality. Assuming a model formula 'Z = X + Y', the experimental results were substituted into the equation, and we estimated coefficients (the contribution ratio of vision) and (the contribution ratio of haptics) values using the method of least squares. Consequently, the contribution ratios of haptics to vision are strongly dependent on the evaluation attribute, because the average ratios were 0.15 in the evaluation of warm-cold, 0.87 in that of soft-hard, and 2.33 in that of smooth-rough, respectively.

P3 **Making objects float: How the perceptual space surrounding objects structures the perception of levitation**

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An object seemingly levitating against gravity can be a fascinating sight. However, it can be a challenging task to depict levitation in art convincingly. To create an impression of levitation, the space surrounding the object seems to be particularly important. It seems that this space must be perceived as being empty, even behind the object, where a support structure holding up the object could be hidden. Here, we discuss tools that artists can use to create a compelling perception of levitation by showing how the perception of empty occluded space can be evoked. In particular, binocular viewing strengthened the impression of levitation in a real-life setup, suggesting that depth cues play an important role in enhancing the perception of levitation. These findings are directly relevant to eliciting the perception of levitation in visual art, be it paintings, photography or stage magic. Supported by the Research Council of Norway, project number 334817.

P3 **Waist-to-hip ratio and body attractiveness: Comparison of 2D and 3D body measurements**

Emily Sophie Ufken, Ronald Hübner
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Research on female body attractiveness, crucial to aesthetics, art, and health, examines features that determine attractiveness and why they are appealing. The waist-to-hip ratio (WHR) has established as significant metric for attractiveness research. However, using WHR as attractiveness measure is challenging, as it is based on three-dimensional (3D) information (body circumference), which is often not readily available to the observer. To address this issue, studies on body attractiveness that commonly present two-dimensional (2D) frontal depictions of bodies (such as line drawings, photographs, or historical paintings) have simply used 2D versions of the WHR. Meanwhile, the actual relationship between 3D WHR, its 2D approximation and attractiveness remains unknown. In order to examine these relationships, we conducted an online rating study, using a set of 30 real women's bodies varying in both, weight and WHR. Our results show, that 2D WHR explains more variance in attractiveness ratings than 3D WHR. Moreover, 2D WHR systematically underestimates actual 3D WHR, but this underestimation is not uniform across different WHR values. These findings highlight the limitations of using different WHR measurements interchangeably for predicting body attractiveness and suggest a need to revise the widely established ideal WHR of 0.7 when considering actual 3D body shape.

P3 **Effects of Gender-Related Tattoos on the Perception and Evaluation of Tattooed Individuals**

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Within the last decades, tattoos have become an increasingly popular way of modifying the human body. Resulting from a large array of research on gender stereotypes, we investigated the influence of gender-related tattoos on the perception and evaluation of tattooed individuals. Implementing a 2x3-within-participants design, participants were asked to rate sets of female and male AI-generated, highly realistically looking models with either a feminine, masculine, or no tattoo on a selection of gender-related adjectives, as well as physical attractiveness and sexual orientation. We revealed that gender-related tattoos have a significant effect on the femininity as well as masculinity ratings of the tattoo wearer. A feminine tattoo compared to no tattoo caused higher femininity ratings for models of both genders. Whereas a masculine tattoo led to higher masculinity ratings only for female models when compared to non-tattooed models. Furthermore, models with gender-nonconforming tattoos were rated with a lower chance of being heterosexual. Surprisingly, neither the precence of a tattoo nor its gender-association had a significant effect on the models' physical attractiveness. The results imply that gender-related tattoos can have an influence on their wearers' perceived conformity to gender stereotypes. Further implications of those findings are discussed in the light of gender-nonconfomity and ideas of halo perception based on context-dependent assessment of humans.

P3 **Analyzing Consensus Between Human and LLMs Aesthetic Judgments**

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Several models of aesthetic perception propose that human aesthetic judgments involve a complex interplay between sensory information and cognitive interpretation. Human aesthetic judgments, such as those recorded in the AVA dataset, reflect complex interactions between visual content and subjective preferences. In this study, we explore whether Large Language Models (LLMs) can replicate the distributional patterns of human aesthetic judgments using only semantic descriptions of images—absent any direct visual input. We randomly selected 10,000 images from the AVA dataset, each rated by an average of 200 human observers on a scale from 1 (ugly) to 10 (beautiful). For each image, we generated a descriptive textual caption using the GPT-Vision API, a generative AI model. To ensure these captions accurately captured key visual elements, we regenerated images from the captions and assessed their semantic similarity to the originals using CLIP-based cosine similarity. We then prompted an LLM to provide aesthetic ratings for each caption, matching the number of human ratings per image. Each LLM rating was generated in an independent session to minimize contextual bias. Finally, we compared the resulting rating distributions using Bhattacharyya Distance, analyzing alignment across the full aesthetic scale (bin0 to bin9). Our findings show stronger alignment between LLM-generated judgments and human ratings at the extremes of the aesthetic scale (bins 0–3 and 6–9), with noticeably lower agreement in the mid-range

(bins 4–5). This suggests that semantic content alone carries substantial aesthetic signal—sufficient for LLMs to approximate human evaluations that were originally based on visual input, especially when those evaluations are strongly negative or positive. These findings imply that (a) LLMs can infer human-like aesthetic preferences through semantic understanding alone, and (b) semantic content may be a primary driver of extreme aesthetic judgments. Arslan Javed acknowledges the financial support from grant 2022 FISDU 00248, which supports his Ph.D. studies.

P3 **Art that reflects you - AI-generated self-representations in personality assessment**

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Previous studies have explored the relationship between implicit aesthetic preferences and Big Five personality traits primarily through social media image analysis. However, the connection between AI-generated imagery and user personality has not yet been systematically examined. This study aims to explore such links through the visual characteristics of AI-assisted artistic self-portraits. A total of 205 young adults (M_age = 21.48, SD = 2.09) created approximately 33,000 images using the generative art software Midjourney. Participants were instructed to create artistic representations of themselves, followed by semi-structured interviews about the images and their experience. Personality was assessed with the TIPI (Gosling), and visual features were extracted using pretrained neural networks (YOLO v8, DeepFace, Cardiff RoBERTa). Extraversion showed the most varied associations: higher extraversion correlated with brighter, more colorful, saturated, and sharper images featuring more people—but surprisingly, with fewer visible faces, suggesting a preference for dynamic social settings. Agreeableness, in contrast, was linked to the number of visible faces but not the number of people, reflecting different social focuses. Agreeableness, conscientiousness, and emotional stability were all positively associated with the emotional tone of image prompts, possibly indicating stronger emotion regulation. Openness showed moderate associations, and future research may reveal stronger links with higher-order features such as abstraction and originality. These results indicate that AI-assisted image creation may offer a promising supplementary tool for personality assessment, especially if the methodology and variable set are further developed.

P3 **"Exploring the differences in experiencing psychological stimuli-based immersion in artificial and non-artificial environments"**

Patrycja miechowska, Nina Niewi ska
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This study examines aesthetic immersion in both physical gallery and virtual reality (VR)environments. Drawing on Agrewal's (2020) definition of immersion as a deep mental involvement leading to reduced awareness of the physical world, we investigate how differentcontexts affect viewers' experience of art. Using a "slow looking" paradigm, participants engage with two abstract paintings by Polish artist Monika Myszkowska for seven minutes in two settings: a gallery and a VR simulation. This method aligns with Tishman's advocacy for prolonged art engagement,challenging modern viewing habits. Participants are primarily university students with no formal art background—naive viewers chosen to reduce bias from prior expertise. In the gallery phase, we tested 45 participants using a range of tools: the Immersive Tendencies Questionnaire (Witmer & Singer), a shortened Polish version of the Immersion Experience Questionnaire (Strojny & Strojny, 2014), and a spatial awareness scale from dance studies (Deinzer et al., 2017). We also used mood assessments and an adapted Aesthetic Experience Questionnaire. The upcoming VR session will also include eye-tracking to analyze gaze patterns and visual attention, providing a quantitative layer to self-reported data. We hypothesize that slow looking facilitates immersive engagement, with VR potentially enhancing this effect.Beyond experimental aims, we are creating a "contemplation room" on campus to encourage immersive, reflective art viewing in everyday student life. This poster outlines our methods and expected findings, aiming to deepen understanding ofhow immersive experiences vary across physical and digital contexts. This project is funded by the Grants4students initiative at Nicolaus Copernicus University.

P3 **Alphabet Aquarium**

David Phillips
unaffiliated, United Kingdom

A short movie exploring aesthetic possibilities of computer animation Last Autumn a computer animation by Refik Anadol and collaborators, 'Unsupervised', was acquired for the permanent collection of MOMA in New York, and his partially AI generated work forms part of 'In situ' at the Guggenheim Bilbao this summer. Audiences worldwide are clearly fascinated by his spectacular forming and dissolving patterns. But are computers and AI opening a door into a whole new territory of aesthetic experience, or only yielding novelties that could quickly become a tiresome visual musak on the walls around us? Static patterns have been a part of the man-made environment in every culture, but can usually be made to move and transform only with computers. Can we now realise the dream of some 20th century artists and film-makers, a visual equivalent to the moving patterns of sound in of music? Not obviously, because the physiology of hearing and

vision are so different. Vision offers no equivalent to the physics of harmony, nor to our viscerally immediate response to music. And you can't replay a moving pattern in your head, as you can a tune once learned. All the same, it's irresistible to explore what can be done, though it will take the gifts of a visual Bach to make real progress. Whilst we wait for Bach, Alphabet Aquarium offers some experiments with varieties of expressive meaning and movement, with moving and morphing words and letters generated with a novel tiling procedure.

P3 **A Quantitative and Qualitative Exploration of the Interplay between Sound and Brush-Strokes while Depicting Images**

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In an artist's studio, during the making of an artwork, many "indeterminate" sounds are created unintentionally, for example, sound of artist's movement, color-container opening sound, sound of sketching and brush-strokes, sound of easel, etc. We often ignore such sounds. In this study, we conducted a case study to investigate the interplay between the sounds of picking up water-colors from different glass containers and the brush-strokes for depicting images. The focus was on eliciting a bi-modal response to emotions through an intentional (artwork) and corresponding automated (music) representation. The experiment was conducted in an artist's (first author) studio where two sets of glass color-containers were kept, namely positive color set and negative color set (previously identified). The glass containers were tuned by a professional musician as two scales of five notes each, one with Major notes and the other with some Minor notes. In a noise-free environment, the artist created a series of positive images and negative images. The unintentionally generated sounds (during art-making) were recorded. The artist later recorded his experience. To analyze the images and sounds, we used three approaches: (1) Fractal analysis, (2) Phenomenological analysis and (3) Semiotic analysis. The Fractal analysis in the form of Detrended Fluctuation Analysis (DFA) was conducted on both the acoustic waveforms of the sound clips and the corresponding paintings to explore possible correlations. The artist's phenomenological interpretations of the process were compared with detailed semiotic analysis of specific acoustic and visual elements and the nature of their relatedness. Results revealed that during the making of an artwork, sound and painting share a lot of commonalities, such as rhythm, structure, composition, balance and harmony. While the representations are radically different, intermedial roots of similarities are identifiable. Visual art and sound both play a powerful role in evoking certain emotions and drive one another.

P3 **Seeing is (Not) Believing: Reimagining Knowledge Through Visual Fiction and Scientific Play**

Catelijne van Middelkoop
TU Delft, University of Groningen (RUG), University of The Arts The Hague, Netherlands

What if pictures could lie, and still tell us something true? This artistic research project dives into the messy, rich overlap between visual storytelling, scientific investigation, and creative experimentation, spanning both the real and the virtual. In digital environments, where the natural laws we take for granted can be twisted or tossed out entirely, new forms of knowledge become possible. Here, insight doesn't always come from logic—it often emerges from intuition, improvisation, and the unexpected. Building on When Images Remain. A Visual Polemic in 8 Acts (2023), *the project begins with a digital collection of 3D heritage objects from the TU Delft Library. These serve as raw material for exploring how meaning is constructed in hybrid spaces—where "pictures" are not just representations, but provocations that blur the boundaries between real and imagined, true and plausible. This is not just research about images; it's research with them. In its first phase, the project embraces hands-on, interdisciplinary experimentation, in which failure as fuel and detours as potential breakthroughs. In the second, it focuses on how these exploratory processes are shared, emphasizing the importance of method over polished results. Outcomes will take shape in hybrid formats that move fluidly between academic, artistic, and public domains, both online and off. By putting curiosity and imagination at the heart of its approach, the project challenges rigid ideas about who produces knowledge—and how. It invites dialogue between visual science, cognitive research, and art, encouraging us to question what we believe we see, and why we see it that way in the first place. ()* https://www.thedynamicarchive.net/component/when-images-remain

P3 **The Leuven Art Personalized Image Set (LAPIS)**

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We present the Leuven Art Personalized Image Set (LAPIS), a novel dataset of art images with aesthetic evaluations that is suitable for machine learning. LAPIS consists of 11,723 images and was meticulously curated in collaboration with art historians. Each image has an aesthetics score and a set of image attributes, including the style and genre of the work and quantitative image properties known to relate to aesthetic appreciation. Besides rich image attributes, LAPIS offers rich personal attributes of each annotator including their age, gender, nationality, education level and art interest. We find that people who score higher on art interest tend to give higher aesthetic scores, and that this is especially the case for abstract artworks. We also observe that figurative styles

received higher scores than abstract styles and that people agreed more on their evaluation of figurative styles. A similar trend was observed for genres, where abstract works scored lower and cityscapes and landscapes received higher scores. These differences influenced machine learning applications, in that these models performed better on figurative styles and when they had information about the annotator's art interest level and the style and genre of the artwork. In terms of quantitative image properties, we find that luminance entropy and edge orientation entropy correlate positively with aesthetic scores ($r = 0.47$; $r = 0.45$, $p < 0.01$), while sparseness and CNN symmetry correlate negatively with aesthetic scores ($r = -0.40$; $r = -0.48$, $p < 0.01$). This suggests that annotators preferred more complex works over more simple works. In addition, we find that color channel means tend to correlate negatively with aesthetic scores while color channel standard deviations correlate positively with aesthetic scores, suggesting a preference for colorful works over those with more uniform colors.

P3 **DODA: Introducing A Database of Datasets for Aesthetics**

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Stimulus selection is a critical first step in the empirical and computational investigation of vision and art. While many image and stimulus sets have been curated and published alongside valuable data, it can be difficult to find the best set for one's own research, as they often differ in various aspects and are shared across different platforms. Therefore, we present a Database of Datasets for Aesthetics (DODA), an intuitive Web Application in which researchers can browse all important datasets for aesthetics research, with annotated properties that are highly relevant for their possible suitability. Based on a systematic review of stimulus sets in aesthetics, DODA offers a centralized search system, intended to promote open-science oriented research practices. Currently, DODA encompasses over 50 datasets, with a link to their location on the web. We compare the datasets and document relevant selection criteria, such as Size, Number of Participants, Participants per Stimulus, Research Question, Rating Scales, Stimulus Source, Resolution, Homogeneity, etc. The information is displayed in a table for users to easily filter through, prioritizing the criteria most important to them. DODA also provides a wide range of quantitative image properties (QIPs) computed for all datasets for users to download. Reusing a dataset is not only ecological for the researcher and environment, but it also allows for the comparison of different variables across the same stimulus set, increasing our collective understanding of aesthetic appreciation. Working on the same datasets provides a feasible opportunity to directly and indirectly collaborate across methodologies within aesthetics. For DODA to grow alongside the field of aesthetics, we encourage researchers to suggest other aesthetics datasets to be included in the future. DODA is

part of the Aesthetics Toolbox, which encompasses useful tools like image resizing and calculating QIPs to make aesthetics research on digital stimuli more accessible and reproducible.

Special Guests

Dialogue with Marcus Aurelius

by Bodo Korsig

The Dialogue with Marcus Aurelius project brings together art, philosophy, and artificial intelligence in an innovative fusion. At its heart is a lifelike, talking bust of the Roman emperor and Stoic philosopher Marcus Aurelius brought to life through cutting-edge 3D projection. Together with developer David Liebemann and technical artist Bonko Karadjov, artist Bodo Korsig renowned for his expansive installations exploring psychological borderline experiences has created a new world of experience: a dialogue between the 2nd and 21st centuries with one of antiquity's greatest thinkers. At the touch of a button, visitors can choose quotes from Marcus Aurelius's Meditations and engage in a conversation with an artificial intelligence in the language of their choice. Between antiquity and the present, a reflective space emerges one that addresses timeless themes such as fear, freedom, and the fragility of life. The project invites visitors to rediscover philosophical wisdom and experience it through modern technology an inspiring encounter between human and machine.

Workshops

Workshop #1
Abstraction to figuration and back

by Katya Granova
Friday August 22, 2025 12:45-13:45
Location: Studio

The workshop offers participants a chance to explore abstract painting and the creative decision-making it involves. Using a simple, brush-free technique inspired by Gerhard Richter, participants will create two acrylic works on board. Along the way, they'll reflect on their relationship to abstraction: how much control they want to exert, how much they allow the paint to mix and move on its own, when they choose to stop, and whether their images remain abstract or evolve into something more figurative. In doing so, they'll experience the kinds of choices contemporary painters regularly face. In today's art world, painting is no longer bound by rules or conventions. Every artist navigates a field of endless possibilities, and so will the participants. They'll be encouraged to take their work in any direction they find exciting: mixing paint by hand, letting it flow freely, or introducing representational elements like figures or objects. This workshop is not only a gateway to better understanding contemporary painting, but also a space to explore one's own creative instincts and discover unique personal approaches. All skill levels are warmly welcome, including complete beginners. The sessions will be held in a friendly, supportive atmosphere, allowing everyone to experiment freely and find what they truly enjoy in painting. The workshop is led by Katya Granova, a practicing contemporary painter and experienced art educator. Her work has received several awards, is represented by galleries internationally, and has been featured in various media outlets.

Workshop #2
From One Planet to Another: Playful Bodies, Shifting Selves

by Mirei Yazawa
Friday August 22, 2025 12:45-13:45
Location: Studio

This workshop will explore how playful body movement can enhance creativity and help transform one's self-perception and identity. Participants will imagine themselves transported to another planet and rediscover aspects of themselves through embodied play.

The session builds upon the movement practices used in a research study, now placed within a new narrative context about self image. The research findings, which provided a nuanced understanding of how embodied interventions can be tailored to enhance creative thinking in adults, directly informed the design of this workshop.

Workshop #3
Photography as an Emotional Mirror

by Shan He
Friday August 22, 2025 12:45-13:45
Location: Maki forum

A Therapeutic Experience of Seeing from Within. Facilitated by Shan He – Conceptual Photographer & Art Therapy Practitioner. What if photography wasn't just a way to document the world—but to reflect your inner one? This experiential session invites participants to explore how the act of seeing is shaped by what we feel, and how emotion lives quietly in the images we create. Guided by a series of embodied and visual prompts, participants will enter a space between perception and reflection—where photography becomes not just an image, but a mirror. No technical knowledge required. Just bring your phone. And a willingness to feel what you see. What to bring: smartphone with camera, notebook or something to write on, comfortable clothing, curiosity, presence, and a sense of wonder.

Workshop #4
RE-CREATE: An Experiential Workshop on Our Relationship with Creativity

by kalliopi Ioumpa
Friday August 22, 2025 12:45-13:45
Location: Studio

Creativity expresses itself in all aspects of our being, from making art and conducting research to gardening or organizing our homes in ways that suit us best. It is a capacity that allows us to keep re-creating our world and discovering new ways of living that align more closely with our needs. In this workshop, participants will have the chance to explore their own relationship with creativity in an experiential way, through the use of creative materials. The workshop is based on person-centred approaches drawn from

art and play therapy for adults. About the Instructor: Kalliopi Ioumpa, PhD, is currently a postdoctoral researcher at Vrije Universiteit Amsterdam, focusing on emotional, neural, physiological, and postural responses to culture and heritage. She also has an educational background in fine arts and design, as well as in person-centred counselling and play therapy. She is involved in different initiatives at the intersection of these fields (i.e. NeuroNarratives, Art of Neuroscience, STUDIOTOPIA) and has a special interest in cross-disciplinary work.

Workshop #5
How to use sound/music during art-making to enhance the impact of emotional expressivity in painting

by Pinaki Gayen
Friday August 22, 2025 12:45-13:45
Location: Studio

We love to listen to music. It evokes emotions, reminds us about memorable events, and brings to mind various visual imageries. It drives our imagination from one thing to another thing and one place to another place. To a great extent, the experience of a musical piece is uncertain and indeterminate. Most people have specific preferences of musical genre that they listen to frequently. It is subjective as well as culture-specific. People listen to music even while they walk, eat, or work. During the making of an artwork, artists often listen to various kinds of music in their studio spaces. In art colleges also, young art students listen to music while they depict images, but they are not aware of the fact of the impact of acoustical features on the human brain and how it regulates our visual perception, emotion, color preferences, composition, and overall visual representation (whether the artwork is figurative or non-figurative). In this workshop I will share (practical demonstration) some of my research findings related to music and visual arts experiments. The specific focus will be on (1) how different musical tempos regulate emotional expressivity in figurative paintings, (2) how different musical tempos regulate color preferences and composition in the figurative paintings, (3) how different indeterminate music or experimental music helps us to overcome creative blocks and helps us to represent unconventional visual representations, and (4) Understanding the effect of complementary (congruent) and contradictory (incongruent) music integration on emotions perceived from a visual artwork. All these four aspects of music and visuals will be explored through hands-on activity.

A Night at the Museum!

On Friday night (the 22.8) the Reinhard Ernst Museum will be open till late exclusively for VSAC attendees. There will be a rich program of interactive live art performances, visual projections and music.

Wiesbaden being located in the world famous Rheingau wine region known for its Riesling wines, there will be wine tasting hosted by the renowned Georg Müller Stiftung winery. To accompany the wine, expect a light dinner with some special treats from our fellow freaks at Freaks to Table

Time	Event
19:00	Doors open
19:30–21:30	Wine tasting, Dinner
19:30–21:30	Ida-Marie Corell. *Synaisthesia and the social sculpture of Now: More Sense Less Nonsense!*
21:30	Mirei Yazawa. *Bodily Reverie*
22:30	Mariana Malta. *The Interlude Complex*
22:30–24:00	Projections and installations by David Jeuniaux, Katharina Hückstädt, and Kalliopi Ioumpa

To help cover the costs of the full program, tickets are sold separately for the price of €49 per person, and €36 for artists and students. Tickets include the art performances and projections, wine tasting and food. Book your tickets in advance and make sure you don't miss the party!!