Philosophy and AI
Lecture 12: Aesthetics

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Readings

Required:

▶ Winter, D. (2024). Aesthetic Aspects of Digital Humanism: An Aesthetic-Philosophical Analysis of Whether AI Can Create Art, pp. 211–221
https://link.springer.com/chapter/10.1007/
978-3-031-45304-5_14

Optional:

▶ Hullman, Jessica, Ari Holtzman, and Andrew Gelman. "Artificial Intelligence and Aesthetic Judgment." (2023).
https://arxiv.org/abs/2309.12338

▶ *Aesthetics and Philosophy of Art: Introduction*, Overthink Podcast
https://www.youtube.com/watch?v=MF8kz-mTIp4

Outline

Outline

1. **Aesthetics**

2. Mimetic Theory

3. The Aesthetic Experience

4. Computational Aesthetics

5. Ethics and Social Dimension

Which painting is generated with an AI tool?

(a) Generated by FLUX
https://github.com/
black-forest-labs/flux

(b) Jacob van Ruisdael, *Landscape with a Village in the Distance*, 1646

Two Paintings: A Thought Experiment

- ▶ Imagine two identical landscape paintings:
    - ▶ Painting 1: Generated by an AI in seconds based on training data
    - ▶ Painting 2: Created by a renowned human artist after years of study
- ▶ Questions to consider:
    - ▶ Are both equally "art"?
    - ▶ Does knowing the origin change your aesthetic experience?
    - ▶ Is one more valuable than the other? Why?

Aesthetics: Foundational Concepts

- ▶ Aesthetics: branch of philosophy concerned with the nature of beauty, taste, and art
  - ▶ Explores both the creation and appreciation of beauty
  - ▶ Examines the philosophy of art and artistic judgment
  - ▶ Studies how we perceive and categorize aesthetic qualities
- ▶ Central questions in AI context:
  - ▶ What makes something beautiful or aesthetically valuable?
  - ▶ Is beauty objective (universal standards) or subjective (in the eye of the beholder)?
  - ▶ How do we judge art, particularly when created by non-human intelligence?
  - ▶ Can AI understand or experience beauty, or merely simulate it?

Traditional Aesthetic Theories

- ▶ Four major theories provide frameworks for understanding art:
    - ▶ **Mimetic Theory**:
        - ▶ Art as imitation of reality.
        - ▶ Does AI art imitate, or does it generate anew?
    - ▶ **Expressive Theory**:
        - ▶ Art as expression of emotion
        - ▶ Can AI feel emotion to express it?
    - ▶ **Formalist Theory**:
        - ▶ Art as significant form and structure
        - ▶ AI excels at pattern recognition-does this make it a formalist artist?
    - ▶ **Institutional Theory**:
        - ▶ Art is whatever the art 'institutions' (museums, critics, collectors) accepts as art.
        - ▶ If AI art is exhibited, is it art by default?

Mimetic Theory: Art as Imitation

Doryphoros of Polykleitos, 5th century BCE

Raffaello, *The School of Athens*, 1509

Coubert, *Stonebreakers*, 1849

Feuerman, *The Midpoint*, 2017

Mimetic Theory: Art as Imitation

- ▶ Originates with Plato and Aristotle in Ancient Greece, and prominent though history (Renaissance artists (Leonardo da Vinci, Raphael); Realist painters (Courbet, Millet); Photorealist movement in 20th century)
- ▶ Core principles:
    - ▶ Art's primary purpose is to imitate or represent nature/reality
    - ▶ Value determined by accuracy and fidelity to the subject
    - ▶ Technical skill prized as means to achieve verisimilitude
- ▶ AI implications:
    - ▶ AI excels at pattern recognition and reproduction/imitation
    - ▶ Generative models trained on vast datasets of human-created images. Is AI mimicking reality or mimicking human art?
    - ▶ Challenges notion of skill when machines achieve photorealism effortlessly

Expressive Theory: Art as Emotion
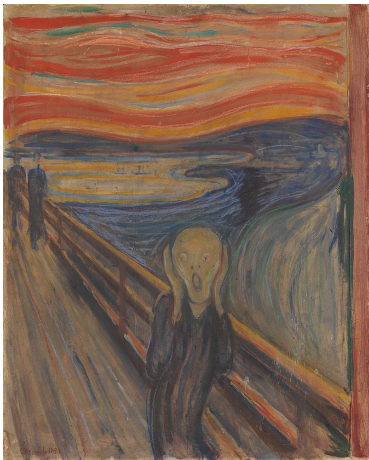

Edvard Munch, *The Scream*, 1893

Expressive Theory: Art as Emotion

- ▶ Historical development:
    - ▶ Emerged during Romanticism (late 18th-19th centuries)
    - ▶ Reaction against Enlightenment rationality and classical formalism
    - ▶ Shifted focus from external reality to internal experience
- ▶ Core principles:
    - ▶ Art as vehicle for expressing artist's emotions and inner states
    - ▶ Authenticity and genuine feeling valued over technical perfection
    - ▶ Communication of emotion to audience central to artistic purpose
    - ▶ Emphasis on individual genius and unique creative vision
- ▶ Major proponents:
    - ▶ Romantic poets (Wordsworth, Coleridge), Expressionist painters (van Gogh, Munch, Kandinsky)
    - ▶ Suggested reading: Leo Tolstoy's "What is Art?" (1897)

Expressive Theory: Art as Emotion

- ▶ AI implications:
    - ▶ Fundamental challenge: Can AI have emotions to express?
    - ▶ AI art interpreted as expressing designer's/programmer's emotions
    - ▶ Raises questions about authenticity when emotions are simulated
    - ▶ Does AI reveals human emotional patterns in new ways?

Formalist Theory: Art as Significant Form
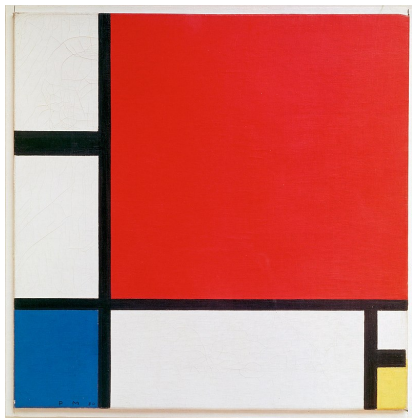
Piet Mondrian, *Composition with Red, Blue and Yellow*, 1930

Formalist Theory: Art as Significant Form

- ▶ Historical context:
    - ▶ Developed in early 20th century amid rise of abstract art
    - ▶ Reaction against both mimetic traditions and expressionism
    - ▶ Influential during modernist movements (Cubism, Constructivism)
- ▶ Core principles:
    - ▶ Art's value lies in formal elements: line, shape, color, composition
    - ▶ Emphasis on internal coherence and structural relationships
    - ▶ Advocates art's autonomy from social, political, or biographical contexts.

Formalist Theory: Art as Significant Form

- ▶ AI implications:
  - ▶ Algorithmic processes are well-suited to manipulate and explore formal elements (color, shape, pattern) in exhaustive ways.
  - ▶ Tests boundaries between randomness and intentional composition
  - ▶ Raises questions about whether purely formal manipulation suffices for "significant form" or if there must be human intent behind it.

Institutional Theory: Art as Social Construction

Duchamp, *Fountain*, 1917

Institutional Theory: Art as Social Construction

Historical Development

▶ First articulated mid-20th century, influenced by readymades and conceptual art (e.g., Duchamp).

▶ Gained traction in the 1960s–70s with postmodern critiques of essentialist definitions of art.

Core Principles

▶ Art status is conferred by art institutions (museums, galleries, critics, collectors).

▶ There are no intrinsic properties that inherently make something art; context and communal recognition matter.

▶ Emphasizes historical and cultural contingency of what is accepted as "art."

Institutional Theory: Art as Social Construction

- ▶ AI implications:
  - ▶ AI art forces reconsideration of creator-artwork relationship
  - ▶ Questions of attribution: AI system, developer, or user?
  - ▶ Christie's auction of AI-generated portrait (2018) as institutional legitimation
  - ▶ Art world institutions developing new criteria for evaluating AI works

Outline

Mimetic Theory: Art as Imitation

- ▶ Core Idea: Art is an imitation (mimesis) of reality
  - ▶ From Greek *mimesis* 'to imitate' or 'representation'
  - ▶ One of the oldest Western aesthetic theories
- ▶ Key Proponents:
  - ▶ Plato (428-348 BCE): Art as a copy of the physical world, itself a copy of ideal Forms
  - ▶ Aristotle (384-322 BCE): Art as a structured imitation, enhancing nature through craft
- ▶ Central Question for AI: Does machine learning imitate reality or merely remix existing art?

Plato's Critique of Mimesis

- ▶ Three levels
  - ▶ Level 1: Ideal Forms (e.g., the perfect, abstract concept of "chair")
  - ▶ Level 2: Physical world (e.g., an actual chair, imperfect copy of the Form)
  - ▶ Level 3: Art (e.g., painting of a chair, a copy of a copy)
- ▶ The Bed Example (Republic, Book X):
  - ▶ God creates the Form/Idea of a bed (truth)
  - ▶ Carpenter makes a physical bed (one step from truth)
  - ▶ Painter depicts the bed (two steps from truth)
- ▶ Implications for AI Art:
  - ▶ AI trained on human art = imitation of imitation of imitation?
  - ▶ For Plato, AI art might be even further removed from truth
  - ▶ Question: Is generative AI deepening illusion?

Aristotle's Defense of Mimesis

- ▶ **Core Idea:** Art as mimesis (imitation) is creative, not deceptive.
- ▶ Natural to Humans:
    - ▶ Innate-we learn and delight in imitation.
    - ▶ Example: Pleasure in a skillful painting, even of grim subjects.
- ▶ Cognitive Value:
    - ▶ Refines reality, reveals universal truths
    - ▶ Example: *Oedipus Rex* explores fate, not just one story.
- ▶ Emotional Power (Catharsis):
    - ▶ Tragedy purges pity and fear
    - ▶ Example: *Medea* evokes and releases emotions safely.
- ▶ Contrast with Plato:
    - ▶ Art isn't deceptive; it reveals deeper, universal truths
    - ▶ Example: A tragedy showing human struggle captures life's essence

AI as the Ultimate Mimetic Machine

- ▶ Capabilities:
    - ▶ AI models trained on vast datasets can mimic styles, textures, and subjects
    - ▶ Style transfer algorithms apply artistic techniques to new content
    - ▶ Hyper-realism: photorealistic images indistinguishable from photographs (e.g., GANs)
- ▶ Examples:
    - ▶ "The Next Rembrandt" (2016): AI analyzing Rembrandt's techniques to create new work
    - ▶ StyleGAN: Generating faces or scenes that never existed but appear real
    - ▶ Stable Diffusion/DALL-E: Creating images from text prompts across styles

AI as the Ultimate Machine

▶ Philosophical Questions:
  ▶ Platonic view: AI art as ultimate deception, furthest from Forms
  ▶ Aristotelian view: AI as new techne, potentially revealing (new) universal patterns
  ▶ Meta-mimesis: AI imitating not reality but human artistic interpretation of reality
  ▶ If AI can generate images without reference to physical reality, does mimesis still apply?

Outline

What Constitutes an Aesthetic Experience?

Kant's Foundational View (Critique of Judgment, 1790):

- ▶ **Disinterestedness**: Pleasure in beauty arises without practical interest or personal gain.
    - ▶ *Example*: Enjoying a sunset purely for its visual beauty, not for practical considerations (e.g., agricultural implications).
- ▶ **Subjective Universality**: Aesthetic judgments are subjective, yet we expect universal agreement from others.
- ▶ **Purposiveness Without Purpose**: Objects judged as beautiful appear intentionally designed, though they lack a specific practical or functional purpose.
- ▶ **Necessity**: Aesthetic judgments carry a claim that others ought to agree with such judgment.

The Role of Freedom in Kant's Aesthetics and AI

▶ Kant sees aesthetic experience as involving the free and harmonious interplay between imagination and understanding.

▶ In AI, this might correspond to algorithms designed to identify aesthetic patterns without strict guidelines, allowing a form of creative autonomy.

▶ **Autonomy and Creativity in Art:**
  ▶ Art, for Kant, embodies autonomy, reflecting the artist's freedom from external constraints or predetermined rules.
  ▶ Can AI-generated art similarly explore creative possibilities independently of explicit programming?

AI as Artist: Creativity

- ▶ Traditional Perspective: True creativity involves intention, originality, and meaningful expression.
- ▶ AI systems produce outputs by remixing patterns learned from human data
- ▶ Margaret Boden's Framework:[1]
  - ▶ **Combinatorial Creativity**: Generating new ideas by combining existing elements in novel ways.
  - ▶ **Exploratory Creativity**: Discovering possibilities within a defined conceptual space.
  - ▶ **Transformational Creativity**: Redefining or revolutionizing conceptual spaces to produce radically new ideas.
- ▶ What kind of creativity can AI systems achieve?

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[1]Boden, M. A. (2010). *Creativity and art*. Oxford University Press.

AI as Artist: Creativity and Aesthetic Value

- **Aesthetic Authenticity Debate:**
    - Does AI-generated art lack authenticity, or emotional depth traditionally associated with human-made art?
    - Alternatively, can AI-generated art transcend human limitations by offering novel perspectives and executional precision beyond human capabilities?

Aesthetic Judgment in the AI Era

- ▶ Traditional Criteria for Judging Art:
    - ▶ Technical skill and craftsmanship
    - ▶ Originality and innovation
    - ▶ Emotional resonance and expression
    - ▶ Cultural and historical significance
    - ▶ Problem: AI can simulate skill and novelty but lacks intentionality or emotion
- ▶ Potential New Criteria for AI Art:
    - ▶ Algorithmic sophistication or complexity
    - ▶ Novelty relative to training data
    - ▶ Human-AI collaboration quality
    - ▶ Interaction possibilities (e.g., generative art adapting to viewer input)
   - ▶ Social impact or critical engagement with AI itself

Outline

Computational Aesthetics: Quantifying Beauty

- **Computational Aesthetics**: The use of computational methods to analyze, evaluate, or model aesthetic properties
  - Interdisciplinary field combining computer science, cognitive science, and philosophy
  - Aims to formalize aesthetic judgments through algorithms and mathematical models
- Historical Foundations:
  - Birkhoff's Aesthetic Measure (1933): Beauty = Order/Complexity
  - Information theory approaches: Beauty as optimal balance of order and surprise
  - Golden ratio and mathematical harmony in classical aesthetics

Computational Aesthetics: Examples
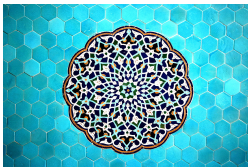
Tiles in the Jameh Mosque of Yazd, 14th century

Karl Sims' evolutionary art
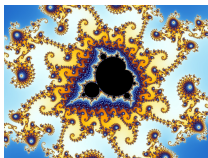
Mandelbrot set
https://en.wikipedia.org/
wiki/Mandelbrot_set

Refik Anadol, *Machine Hallucinations - Nature Dreams*, 2021

Computational Aesthetics: Quantifying Beauty

- ▶ Modern Developments:
    - ▶ Neural networks extend analysis to complex visual, auditory, and textual works
    - ▶ Machine learning models trained on human preference data
    - ▶ Deep learning approaches analyzing millions of features simultaneously
- ▶ Philosophical Tension:
    - ▶ Seeks to "solve" aesthetics scientifically-contrast with subjective traditions
    - ▶ Question: Can aesthetic experience be reduced to computational processes?

Applications of Computational Aesthetics

- ▶ Image Analysis and Evaluation:
    - ▶ AI systems score artworks for compositional elements (symmetry, color harmony, etc.)
    - ▶ Example: Facial Beauty Prediction benchmarks
    - ▶ Application: Automated curation and filtering of visual content
    - ▶ Challenge: Cultural biases in training data affect standards of beauty
- ▶ Music and Sound Evaluation:
    - ▶ Algorithms analyze rhythm, melody, harmony for predicted listener appeal
    - ▶ Example: Pandora's Music Genome Project classifying songs on 450+ attributes
    - ▶ Application: Recommendation systems and automated composition
    - ▶ Challenge: Capturing emotional and cultural aspects.

Applications of Computational Aesthetics

- ▶ Aesthetic Ranking and Prediction:
    - ▶ Models predicting image memorability, engagement, or preference
    - ▶ Example: An AI model predicting which photos humans find beautiful or engaging
    - ▶ Application: Content prioritization for social media, advertising, and publishing
    - ▶ Challenge: Distinguishing between temporary trends and enduring aesthetic values

Outline

Ownership and Authorship in AI Art

- ▶ Legal Ambiguities:
    - ▶ Who owns AI-generated art? The programmer, the user, or the AI itself?
    - ▶ Current legal precedent: U.S. Copyright Office requires human authorship
    - ▶ Thaler v. Perlmutter (2023): AI-generated images not copyrightable without substantial human input
    - ▶ "Zarya of the Dawn" case: Copyright granted only to human-created elements
- ▶ Philosophical Perspectives:
    - ▶ Does the effort involved in training an AI or crafting prompts constitute a meaningful form of creative labor?
    - ▶ If AI functions as a tool of production, should control and ownership be concentrated in the hands of those who develop the technology, or should it be more broadly distributed?

Ownership and Authorship in AI Art

► Practical Implications:

  ► Human artists fear economic displacement and loss of creative control

  ► Tech corporations profit from models trained on artists' work without compensation

  ► Question: Should AI art be public domain if built on collective data?

Bias and Representation in AI Art

- ▶ Training Data Issues:
    - ▶ AI reflects and amplifies biases present in training datasets
    - ▶ Western, male, and Eurocentric art traditions typically overrepresented
    - ▶ Example: Early Midjourney versions favored light-skinned portraits over diverse ones
- ▶ Aesthetic Norm Reinforcement:
    - ▶ AI systems often perpetuate dominant beauty standards (symmetry, proportions)
    - ▶ Marginalizes non-Western, indigenous, or avant-garde aesthetic traditions
    - ▶ Default settings and suggestion algorithms favor mainstream tastes

Bias and Representation in AI Art

▶ Mitigation Strategies:
  ▶ Diverse, balanced datasets with transparent documentation
  ▶ Participatory design with varied cultural stakeholders
  ▶ Explicit bias detection and correction mechanisms
  ▶ Education about AI limitations and cultural contexts

Dehumanization vs. Democratization of Art

- **The Dehumanization Argument**:
    - AI art lacks human intentionality, emotion, struggle, or lived experience
    - Critics describe AI works as technically impressive but "soulless"
    - Example: "The Next Rembrandt" mimics technique but lacks the artist's historical context
    - Heidegger's concern: Technology reduces art to a collection of manipulable data
    - Art traditionally valued as uniquely human expression becomes algorithmic

Dehumanization vs Democratization of Art

- ▶ **The Democratization Counterpoint:**
    - ▶ AI tools lower barriers to creation-anyone can generate sophisticated imagery
    - ▶ No longer requires years of technical training or expensive equipment
    - ▶ Example: Tools like Midjourney enable non-artists to visualize creative concepts
    - ▶ Potentially broader participation in aesthetic production across society
    - ▶ Parallels to how photography initially threatened painting, then expanded artistic possibilities
- ▶ Ongoing tensions:
    - ▶ Does AI art cheapen creativity or expand access to aesthetic expression?
    - ▶ Potential for human-AI collaboration rather than replacement

Deepfakes and Epistemological Challenges

▶ Deepfakes: AI-generated media mimicking real people or events with high fidelity

▶ Uses GANs, diffusion models, and other machine learning techniques

▶ Increasingly accessible-no longer requires substantial technical expertise

▶ Example: Face-swapping apps, voice cloning tools, full-body synthesis

Deepfakes and Epistemological Challenges

- **Epistemological Threat:**
    - Undermines visual and auditory evidence as reliable knowledge sources
    - Descartes' "evil demon" hypothesis modernized: AI as systematic deceiver
    - "Seeing is believing" becomes obsolete in a post-truth visual landscape
    - Example: 2019 deepfake of Mark Zuckerberg claiming "whoever controls the data controls the future"

Deepfakes: Social and Philosophical Implications

- **Erosion of Evidential Standards:**
  - Traditional epistemology relies heavily on perception as a knowledge source
  - Deepfakes falsify this foundation-recorded evidence becomes suspect
  - Legal systems built on evidential standards face fundamental challenges

- **Social Fragmentation:**
  - Competing realities emerge-different groups accept different "facts"
  - Epistemic bubbles reinforce separate perceptual worlds
  - Putnam's coherence theory: Genuine knowledge depends on shared epistemic standards. Deepfakes undermine this shared foundation.
  - Example: Election misinformation amplified by synthetic media

Deepfakes: Social and Philosophical Implications

Manipulation of Belief

- ▶ Deepfakes leverage aesthetic realism to bypass critical thinking.
- ▶ Emotional responses frequently override rational assessments of authenticity.
- ▶ Propaganda risks: Synthetic portrayals of leaders could trigger genuine global crises.
- ▶ Kantian concern: Deepfake deception undermines autonomy by by preventing rational decision-making.

Philosophical Responses

- ▶ Developing digital epistemologies: Emphasizing technical verification methods.
- ▶ Promoting digital provenance and authentication technologies.
- ▶ Enhancing media literacy as a foundational epistemic skill.
- ▶ Open Question: Could aesthetic principles themselves help distinguish authentic from synthetic media?

Exercises

1. Formalist theory values art for its formal elements like composition and structure. Does AI's capacity for perfect pattern recognition enhance or diminish the value of formalism? Justify your position.

2. Kant emphasizes disinterestedness and the subjective universality of aesthetic judgments. Can AI-generated art evoke a genuine aesthetic experience in human viewers? How does knowing the artwork's origin (AI vs. human) influence our perception and appreciation of beauty? Try to generate an artwork with an AI tool and discuss.

3. Using Margaret Boden's framework of combinatorial, exploratory, and transformational creativity, assess whether AI-generated art can be considered creative in the same way as human art. What are the similarities and differences?

The last slide!

- ▶ The last slide of the course. Congratulations!
- ▶ We covered many topics, and you should be proud of that.
- ▶ Knowledge is tricky: Justified True Belief isn't enough
- ▶ AI raises deep questions: Can it think, understand, or be ethical?
- ▶ Ethics isn't just the trolley problem: But AI will have to make tough choices.
- ▶ Language shapes thought: Meaning isn't as simple as reference.
- ▶ Aesthetics isn't just about beauty: Can AI create "real" art?
- ▶ Philosophy is not just about the answers, but about asking better questions.
- ▶ Keep questioning - in your studies, your work, and your life!