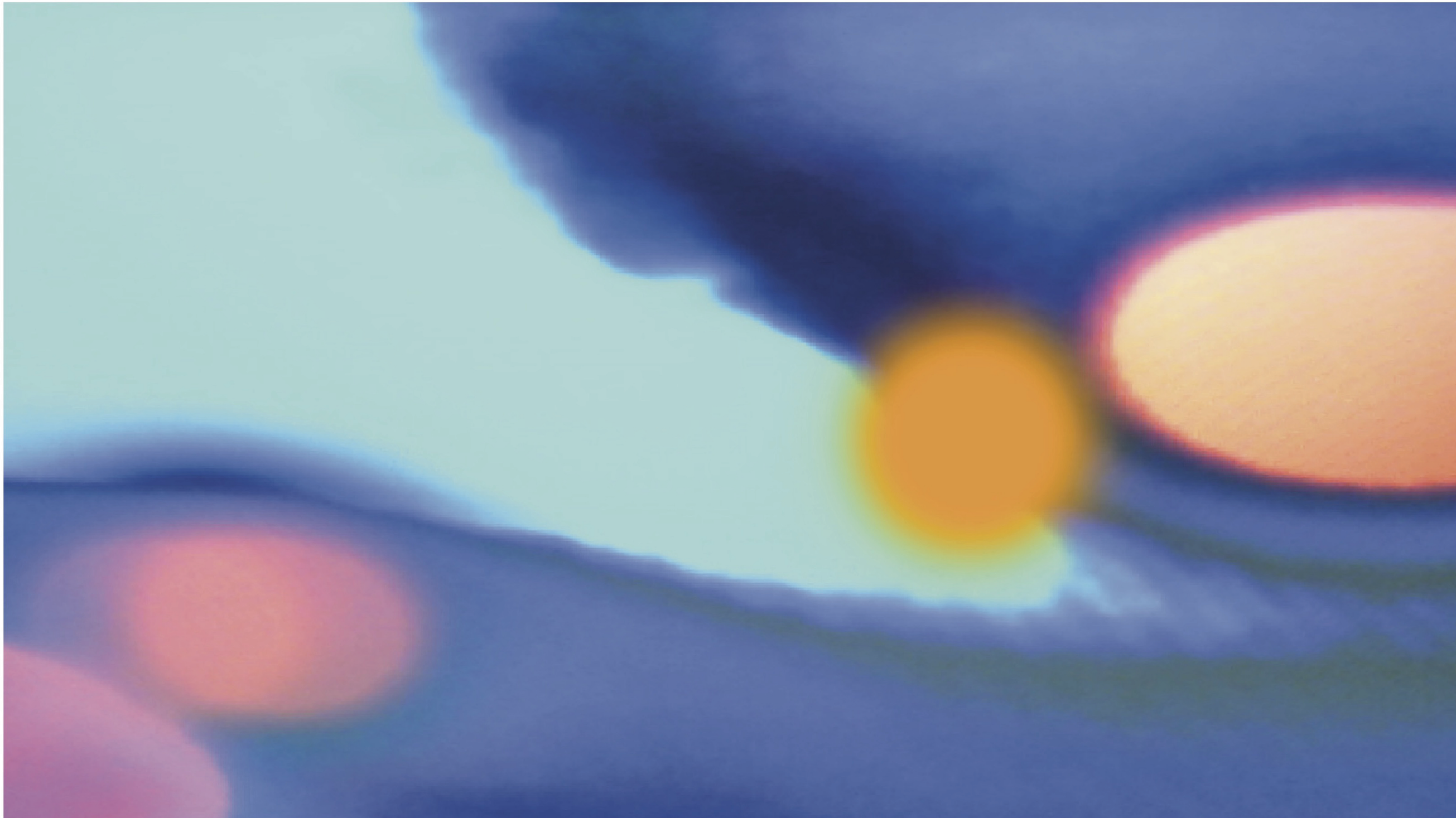


im/possible summer school



EN From invisible to synthetic images, the im/possible images exhibition reflects on the ways in which images are produced and received today. International guests, local artists and researchers were invited to explore (digital) image infrastructures during workshops, lectures and screenings, organised within the framework of the im/possible summer school (20.7.—24.7.2021). Visitors were invited to navigate towards the edges of the perceptible and dive into the universe of im/possible images. A selection of materials and results from the summer school programme is gathered here in the READER.

DE Von unsichtbaren Bildern zu synthetischen Bildern, reflektiert im/possible images Funktionsweisen heutiger Bildproduktion und -rezeption. In Workshops, Vorträgen und Screenings erkundeten internationale Gäst*innen, lokale Künstler*innen und Forscher*innen im Rahmen einer im/possible summer school (20.7.—24.7.2021) (digitale) Bildinfrastrukturen. Besuchende waren eingeladen, an die Ränder des Wahrnehmbaren zu navigieren und dabei ins Universum der un/möglichen Bilder einzutauchen. Eine Auswahl an Materialien und Ergebnissen aus dem Programm der summer school ist hier im READER versammelt.

Projects/ Projekte



by the summer school participants;
the students of the Klasse Digitale Grafik,
HFBK Hamburg, 2021

von Teilnehmenden der Summer School;
Studierenden der Klasse Digitale Grafik,
HFBK Hamburg, 2021

<http://impossible.digitale-grafik.com/>

EN During the im/possible summer school, ten students of the Klasse für Digitale Grafik HFBK Hamburg reflected on the im/possible images exhibition during a three day hackathon-style production sprint. The projects can be accessed online. Posters capturing the essence of their projects are reproduced in this reader and were incorporated in the im/possible images exhibition.

DE Während der im/possible summer school waren zehn Studierende der Klasse für Digitale Grafik HFBK Hamburg zu Gast in der Lothringer 13 Halle. In einem dreitägigen Produktionssprint im Stil eines Hackathons reflektierten sie die Ausstellung im/possible images. Die daraus entstandenen Projekte können online eingesehen werden. Zu den Projekten entstandene Plakate wurden in die Ausstellung im/possible images aufgenommen und sind hier reproduziert.

Workshop conducted by/ Workshopleitung: Rosa Menkman

Students of/ Studierende der Klasse Digitale Grafik der HFBK Hamburg von Prof. Christoph Knoth und Prof. Konrad Renner.

The following posters are created by/ Die Poster sind von:

Moritz Ebeling: *LED-Transmitting*

Miriam Humm: *Information Resolutions*

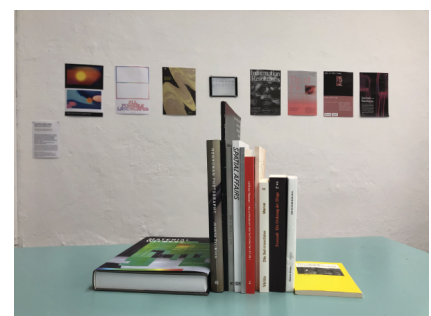
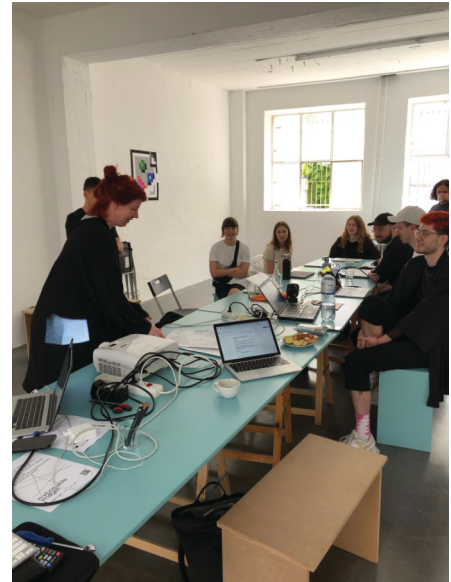
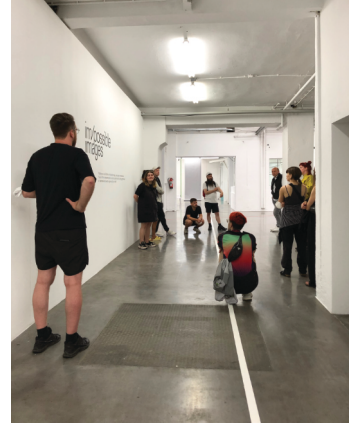
Artur Neufeld: *I don't want to live in a quantum state*

Timo Rychert, Yulia Wagner, Polina Lobanova: *Tip of the tongue*

Jens Schnitzler: *All possible landscapes*

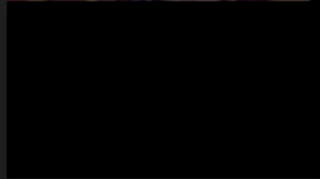
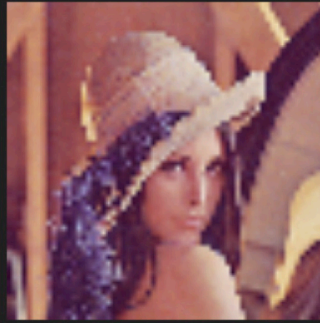
Stephan Thiel: *Decimate-Recompose*

Nataliia Verbova, Kimberly Duck: *hyper crunch space*



Images this page: im/possible images summer school with Klasse Digitale Grafik HFBK HH at Lothringer 13 Halle, photos: Luzi Gross, 2021

1789 of 4096 frames



R213 G138 B130

LED-Transmit by Moritz Ebeling

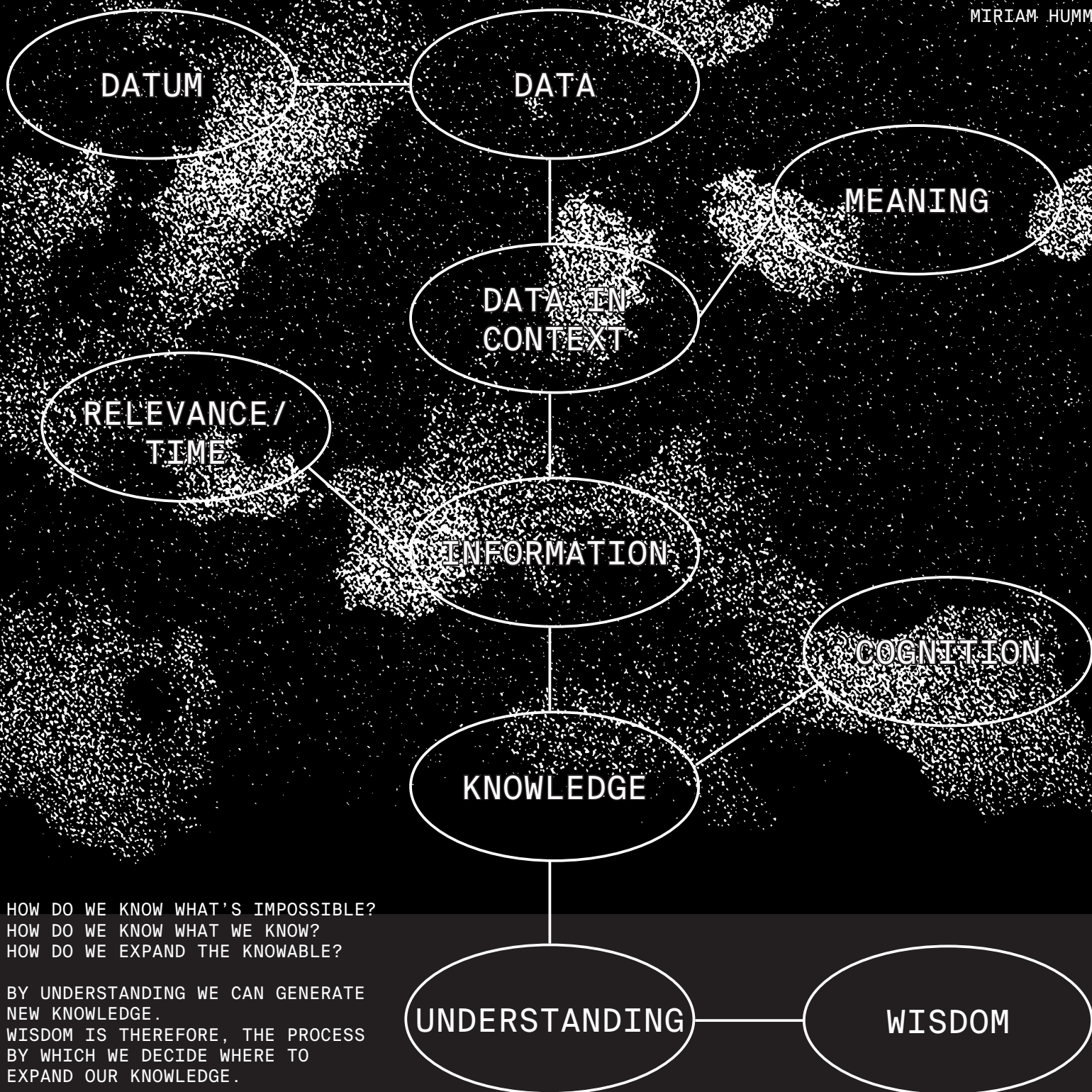
LED-Transmit is an experiment that encodes a two-dimensional pixel array into one single stream of colors – as a method to transmit any image between devices. The tool consists of two parts: the transmitter (display) and the receiver (camera) and is accessible through a website. The result does not reassemble the original image perfectly, but introduces new artifacts caused by display, camera and everything in between the two.

Resume

Reset

Information Resolutions

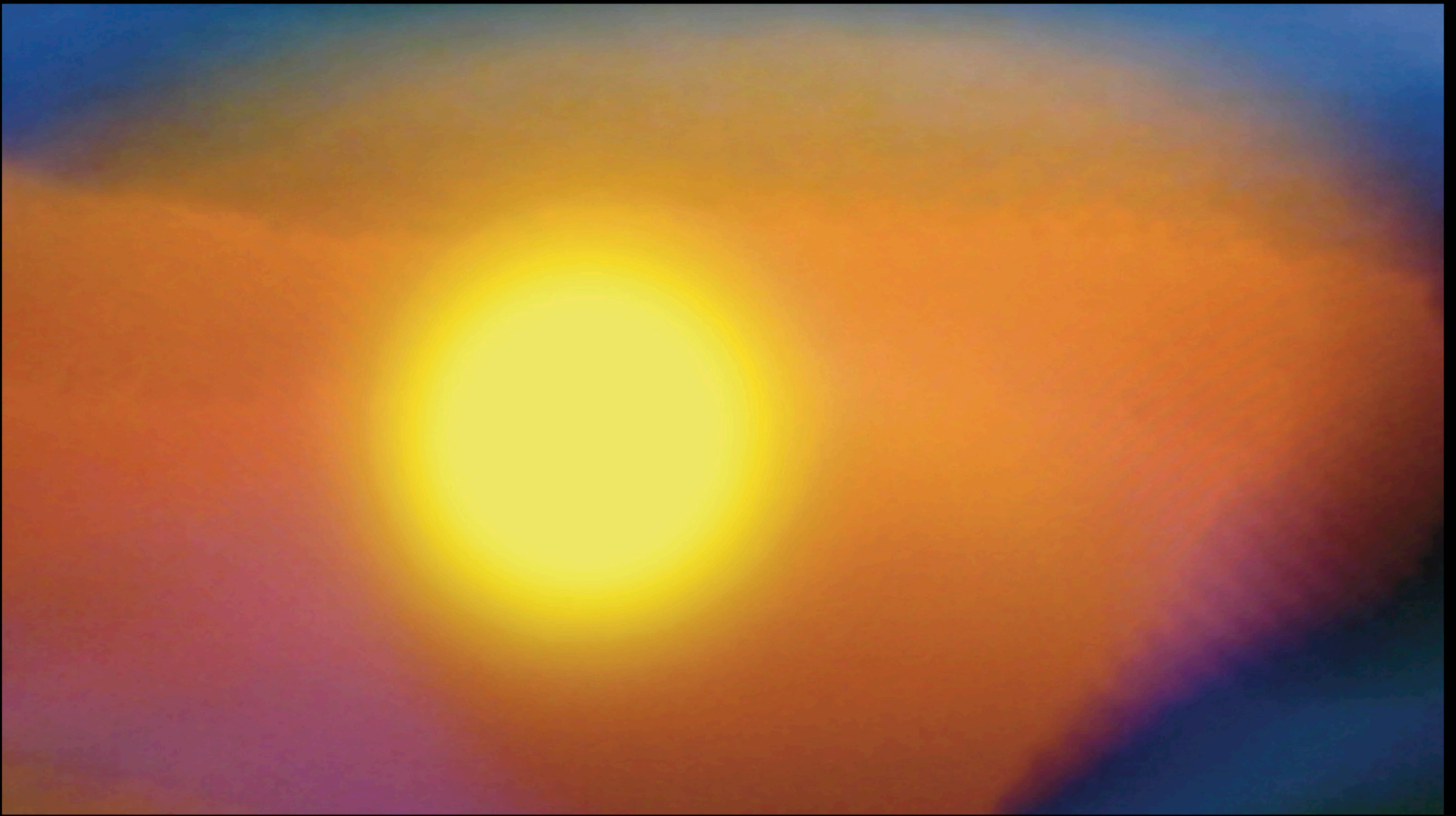
MIRIAM HUMM



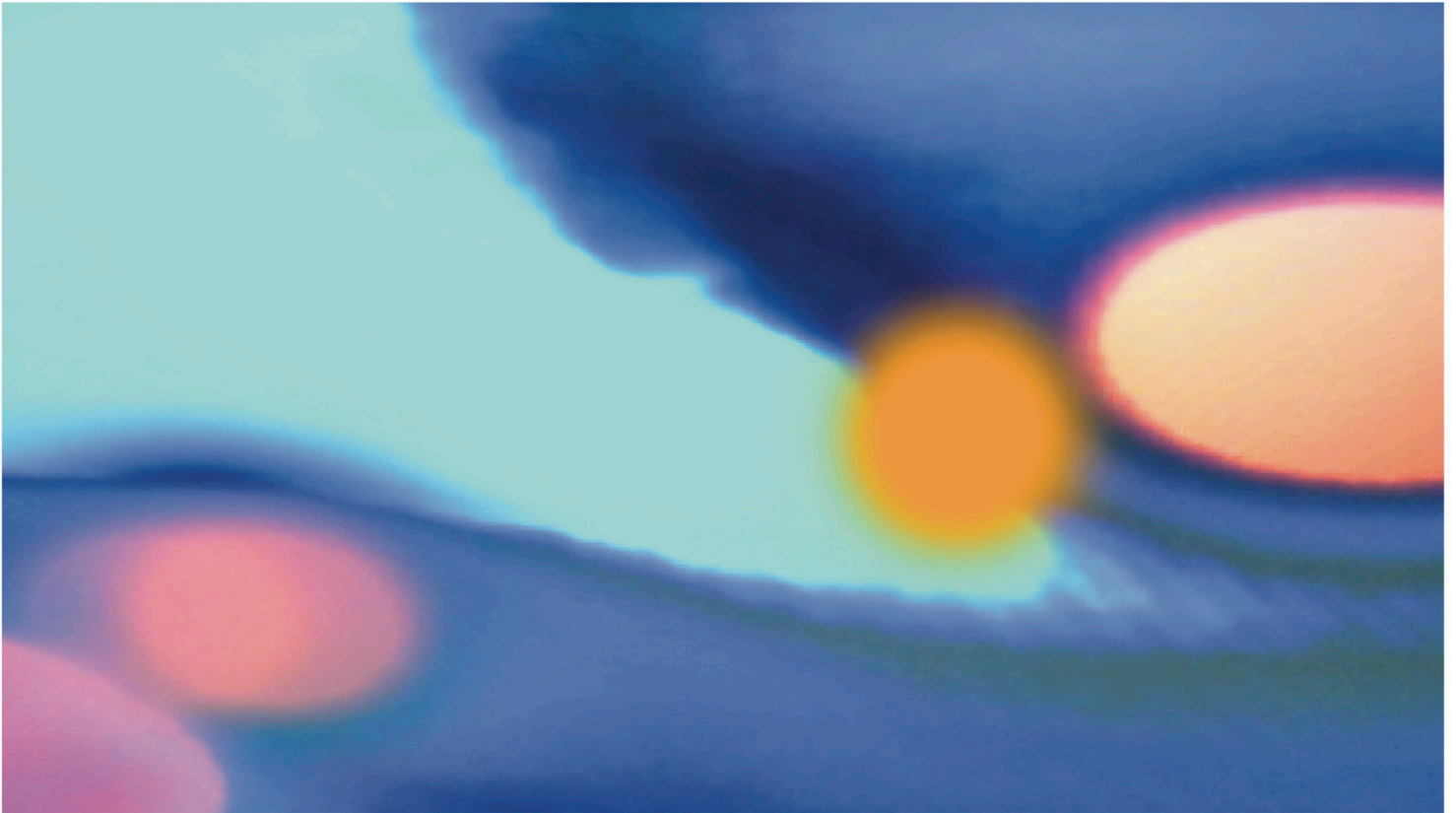
HOW DO WE KNOW WHAT'S IMPOSSIBLE?
HOW DO WE KNOW WHAT WE KNOW?
HOW DO WE EXPAND THE KNOWABLE?

BY UNDERSTANDING WE CAN GENERATE
NEW KNOWLEDGE.
WISDOM IS THEREFORE, THE PROCESS
BY WHICH WE DECIDE WHERE TO
EXPAND OUR KNOWLEDGE.





24.02.1995 08:13:42:756



12.05.2018 21:20:21:956

I don't want to live in a quantum state.

Artur Neufeld

impossible
summer
school

Tip of the tongue



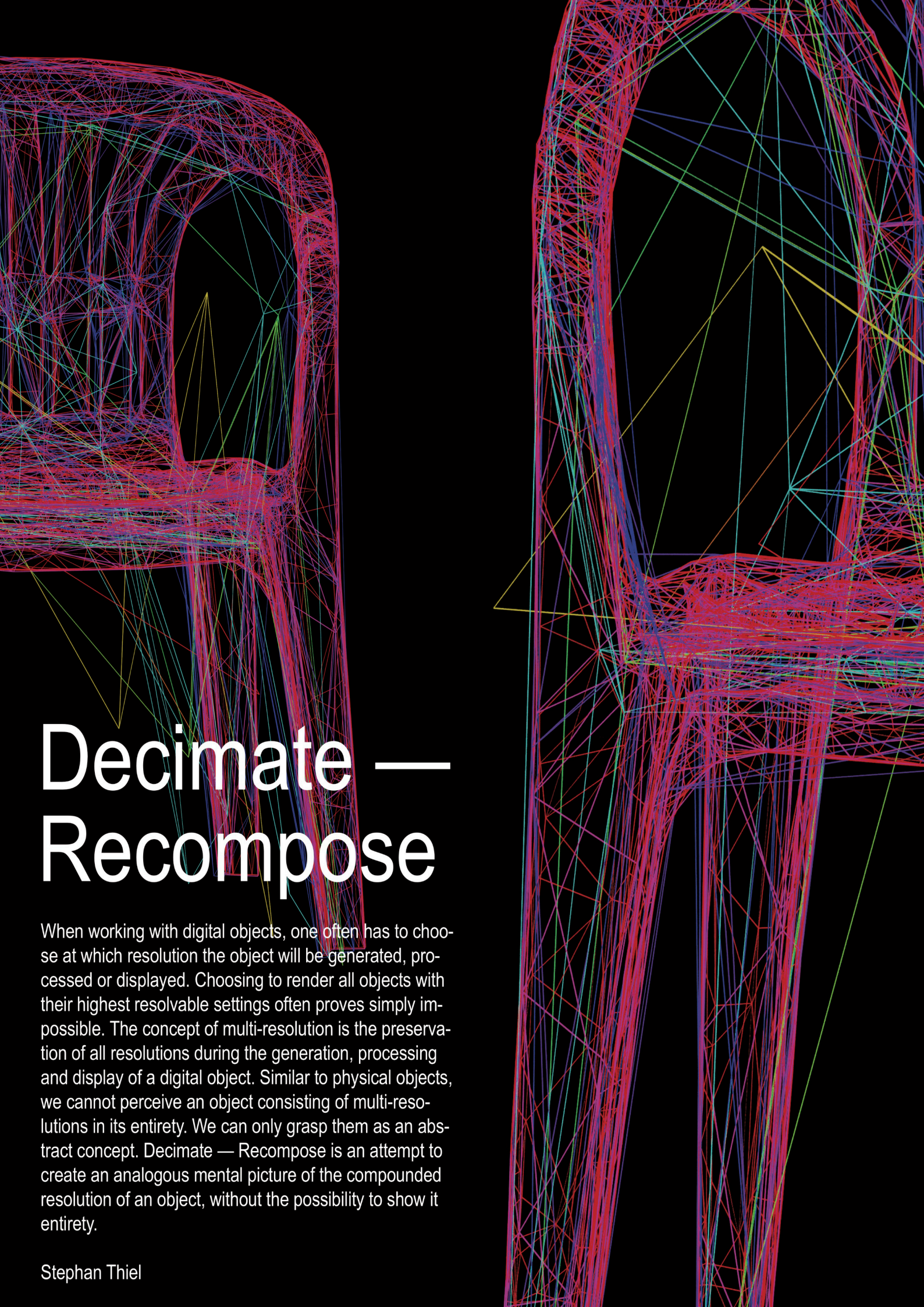
Polina Lobanova
Timo Rychert
Yulia Wagner

I am a collection of thoughts and memories
and likes and dislikes.
I am the things that have happened to me
and the sum of everything I've ever done.
I am the clothes I wear on my back.
I am every place and every person and every
object I have ever come across.
I am a bag of bones stuck to a very large rock
spinning a thousand miles an hour.



ALL POSSIBLE LANDSCAPES

JENS SCHNITZLER

An abstract wireframe sculpture of a chair, composed of a dense network of thin, multi-colored lines (red, blue, green, yellow) against a black background. The lines form the structural elements of the chair, including the backrest, seat, and legs, creating a complex, almost chaotic web of connections that define the chair's form without solid surfaces.

Decimate — Recompose

When working with digital objects, one often has to choose at which resolution the object will be generated, processed or displayed. Choosing to render all objects with their highest resolvable settings often proves simply impossible. The concept of multi-resolution is the preservation of all resolutions during the generation, processing and display of a digital object. Similar to physical objects, we cannot perceive an object consisting of multi-resolutions in its entirety. We can only grasp them as an abstract concept. Decimate — Recompose is an attempt to create an analogous mental picture of the compounded resolution of an object, without the possibility to show it entirely.

Stephan Thiel



hyper
crunch
space

nataliia
verbova

kimberly
duck

impossible
summer
school

Leseliste

The reading list includes literature and theories that were important references in the research on and development of im/possible images. The listed publications are available in the library of the Lothringer 13 Halle and can be studied there.

Die Leseliste umfasst Literatur und Theorien, die in der Recherche zu und der Entwicklung von im/possible images wichtige Referenzen waren. Die gelisteten Publikationen stehen als Handapparat in der Bibliothek der Lothringer 13 Halle zur Verfügung und können dort gelesen werden.

im/possible reading list/ Leseliste

→ Theories around latent/liminal image space

Joanna Zylińska: Nonhuman Photography, MIT Press, 2017.

Jussi Parikka: A Geology of Media (Electronic Mediations, Band 46), University of Minnesota Press, 2015.

Jussi Parikka: Photography off the scale. Edinburgh University Press, 2021.

Trevor Paglen: Invisible Images. (Your Pictures Are Looking at You), The New Inquiry December 8, 2016.

Paul Virilio: Die Sehmaschine. Merve, 2012.

Vilém Flusser: Ins Universum der technischen Bilder. European Photography; 7. Auflage, 2018.

Daniel Rubinstein: Fragmentation of the Photographic Image in the Digital Age, Routledge, 2019.

Alan Warburton: RGBFAQ, 2020.

Rosa Menkman: Glitch Studies Manifesto. In: Geert Lovink and Rachel Somers Miles (eds.): Video Vortex Reader II, moving images beyond YouTube, 2011, pp. 336-348.

Hito Steyerl: In Defence of the poor image, In: e-flux Journal, Issue #10 November, 2009.

Giulia Bini, Livia Nolasco-Rózsás, Jan Elantowski: Spatial Affairs, Hatje Cantz, 2021.

Giulia Bini, Livia Nolasco-Rózsás (et. all): Spatial Affairs. Katalog zur gleichnamigen Ausstellung im Ludwig Museum, Museum of Contemporary Art, Budapest. Hatje Cantz, 2021.

Mittelberger, Pelz, Rosen, Franke (Hg.): Maschinensehen. Feldforschung in den Räumen bildgebender Technologien. Books from the HfG University of Arts and Design Karlsruhe & ZKM. Band I. Spector Books, 2013.

Susan Schuppli: Material Witness. Media, Forensics, Evidence, MIT Press, 2020.

Terry Flaxton: HD aesthetics and digital cinematography. digital light, 2015, p. 61.

Kate Crawford and Trevor Paglen: Excavating AI. The Politics of Training Sets for Machine Learning, September 19, 2019.

Georges Bataille: The Impossible. City Lights Books, 1991.

Matthew Fuller and Olga Goriunova: Bleak Joys: Aesthetics of Ecology and Impossibility. Vol. 53. U of Minnesota Press, 2019.

Greene, Brian. The hidden reality: Parallel universes and the deep laws of the cosmos. Vintage, 2011.

→ All possibilities

Jorge Luis Borges: Die Bibliothek von Babel. Reclam, 1974.

William Poundstone: The recursive universe. cosmic complexity and the limits of scientific knowledge. Courier Corporation, 2013.

Michel Foucault: Die Ordnung der Dinge: Eine Archäologie der Humanwissenschaften, Suhrkamp, 2003.

→ Shapes (blobs, lines and euclidean space)

Tim Ingold: Life of Lines, Routledge, 2015.

Edwin Abbott Abbott: Flatland. A Romance of Many Dimensions, 1884.

→ Missing (images)

Mimi Onuoha: Library of missing datasets. In: Hrsg. v. Inke Arns, Marie Lechner: Computer Grrrls, Hardware MedienKunstVerein, Ausstellungsmagazin, 2021.

→ Machine Learning

Rosemary Lee: The Limits of Algorithmic Perception: technological Umwelt, 2018.

Rosemary Lee: Seeing with Machines: Decipherability and Obfuscation in Adversarial Images, IT-University of Copenhagen, 2018.

Quentin Meillassoux and Florian Hecker: Talk Hyperchaos, Speculative Solution. URBANOMIC / DOCUMENTS, Chez Meillassoux, Paris, 22 July 2010.

(Im)possible Images –
digital media, reality and the arts

Seminar Schedule

A Seminar by Mariya Dzhimova, Luzi Gross and Silvan Pollozek in cooperation between the Chair of Sociology of Technology, European New School of Digital Studies, the Institute for Cultural Management and Media, University of Music and Performing Arts Munich and Lothringer 13 Halle, SS 2021

(Im)possible Images – digital media, reality and the arts

A Seminar by **Mariya Dzhimova**, **Luzi Gross** and **Silvan Pollozek** in cooperation between the Chair of Sociology of Technology, European New School of Digital Studies, the Institute for Cultural Management and Media, University of Music and Performing Arts Munich and Lothringer 13 Halle, SS 2021

The production of visual images is not a process of mere depicting and representing reality, but a process of creating and mediating realities. Visual images shape certain conceptions of the enemy, define specific ways of life, call for identification with given groups (perpetrators, victims, etc.), frame opinions, make the hidden visible and conceal the visible. Visual images are performative and under particular circumstances even operative in a way that they can trigger certain decisions and actions ("operational images" Farocki 2003).

This operativity and performativity unfolds in a new way through the producing and reading of visual images by new technologies such as computer vision, neuronal networks, virtual reality, augmented reality etc. It is the algorithms that produce, read and evaluate the images by translating and comprehending the „visuality“ into data sets and mathematical formulas.

Monitoring systems and face recognition algorithms turn the human body into a machine-readable and image- based grammar in order to make visible the "unwanted" ("criminals", "vandals", "illegals") and to sort it out. Or drones assess the images they generate in order to navigate through terrain and wipe out the target or artificial intelligence. Taking into account that visuals and visual regimes are both ubiquitous and hidden, especially considering new computer generated black box methods of image processing and assessment, the question arises how to critically approach the production and politics of visual images and visual regimes? Are there ways to queer them and what different forms of interventions are possible? And how to turn them into political issues for public debate?

This interdisciplinary course assembles recent work from media studies, science and technology studies as well as the arts and discusses their different engagement with this matter. The course will introduce key approaches on the performativity of media and images. Moreover, it will discuss recent research on computational image making, on data practices, as well as on socio-technical arrangements of visual regimes. And, it will dive into a number of recent arts projects that have developed subversive and interventional strategies on computational image creation - such as by Rosa Menkman, Hito Steyerl, Harun Farocki and others.

The interdisciplinary course is organized by the European New School of Digital Studies, the Hochschule for Music and Theater Munich, and the Lothringer 13 Halle, a municipal art space for contemporary art in Munich. Furthermore, it is related to the exhibition "impossible images" with Rosa Menkman at Lothringer 13 Halle, which will take place in July, 2021.

Classes will be held in a digital form: bi-weekly block events allow the presentation and discussion of research and art projects via video conferencing. Material (images, videos, readings, smaller tasks...) will be uploaded to Moodle. The students are expected to prepare and moderate one session (90 minutes).

Course Agenda

16.4. Introduction

Organisational topics

- round of introduction (lecturers and students)
- presentation agenda of the course
- explaining the exam performances
- explaining and distributing the moderation tasks

30.04. Performative images and the production of knowledge

Reading: Visual construction of reality, social construction of visibility (60 min)

- Alloa, E. (2016) Iconic Turn: A Plea for Three Turns of the Screw. Culture, Theory and Critique 57(2), pp. 228–250. DOI: [10.1080/14735784.2015.1068127](https://doi.org/10.1080/14735784.2015.1068127).

Reading: STS & social studies of science - images and the production of knowledge (60min)

- Lynch, M. and Edgerton, S.Y. (1987) Aesthetics and Digital Image Processing: Representational Craft in Contemporary Astronomy. The Sociological Review 35(1), pp. 184–220. DOI: [10.1111/j.1467-954X.1987.tb00087.x](https://doi.org/10.1111/j.1467-954X.1987.tb00087.x).

Artworks: images and knowledge production (60 min)

- Sophie Dyer and Sasha Engelmann: Open weather project (<http://www.sashaengelmann.com/amateur-radio>)
- Forensic Architecture: The killing of Halit Yozgat: 77sqm_9:26 min (<https://vimeo.com/225827337>)

Further Reading:

- Mitchell, W.J.T. (2002) Showing seeing: a critique of visual culture. Journal of Visual Culture 1(2), pp. 165–181. DOI: [10.1177/147041290200100202](https://doi.org/10.1177/147041290200100202).
- Rubinstein, D. (2019) Fractal photography and the politics of invisibility. In: Durden M and Tormey J (eds) The Routledge Companion to Photography Theory. (London: Routledge).
- Burri, R. and Dumit, J. (2008) Social Studies of Scientific Imaging and Visualization. In: The Handbook of Science and Technology Studies, pp. 297–317.
- Vertesi, J. (2012) Seeing like a Rover: Visualization, embodiment, and interaction on the Mars Exploration Rover Mission. Social Studies of Science 42(3), pp. 393–414. DOI: [10.1177/0306312712444645](https://doi.org/10.1177/0306312712444645).

14.05. Operative images - Machine & Computer Vision

Artwork: Operational Images (120 min)

- Farocki, Harun (2000) Eye/Machine: Trailer: <https://vimeo.com/channels/exav/102228278> [material will be added]
- Pantenburg, V. (2016) Working images: Harun Farocki and the operational image. In: Eder J and Klonk C (eds) Image Operations: Visual Media and Political Conflict. (Manchester: Manchester University Press), pp. 49-62. DOI: [10.7228/manchester/9781526107213.003.0004](https://doi.org/10.7228/manchester/9781526107213.003.0004).
- Paglen, T. (2014) Operational Images. e-flux 59, pp. 1-3. (<https://www.e-flux.com/journal/59/61130/operational-images/>)

Reading: Images as Operative Tools (60min)

- Hoel, A.S. and Lindseth, F. (2016) Differential Interventions: Images as Operative Tools. In: Kuc K and Zylinska J (eds) Photomediations: A Reader. (London: Open Humanities Press), pp. 177-183.

Further Reading:

- Elsaesser, T. and Alberro, A. (2014) Farocki: A Frame for the No Longer Visible: Thomas Elsaesser in Conversation with Alexander Alberro. eflux (<https://www.e-flux.com/journal/59/61111/farocki-a-frame-for-the-no-longer-visible-thomas-elsaesser-in-conversation-with-alexander-alberro/>)
- Franz, N. and Queisner, M. (2018) The Actors Are Leaving the Control Station. The Crisis of Cooperation in Image-guided Drone Warfare. In: Feiersinger L, Friedrich K, and Queisner M (eds) Image - Action - Space. (De Gruyter), pp. 115-132.
- Hoel, A.S. (2018) Operative Images. Inroads to a New Paradigm of Media Theory. In: Feiersinger L, Friedrich K, and Queisner M (eds) Image - Action - Space. (De Gruyter), pp. 11-28. DOI: [10.1515/9783110464979-002](https://doi.org/10.1515/9783110464979-002).

21.05. Beyond Resolution

Artwork / Reading: How not to be seen and other references (60 min)

- Steyerl, H. (2013): How not to be seen. A Fucking Didactic Educational .MOV File (<https://www.artforum.com/video/hito-steyerl-how-not-to-be-seen-a-fucking-didactic-educational-mov-file-2013-51651>)

Artwork / Reading: Beyond resolution: impossible images (120 min)

- Menkman, R. (2016) Behind the White Shadows of Image Processing. Shirley, Lena, Jennifer and the Angel of History. Available at: <https://beyondresolution.info/Behind-White-Shadows>

Further Reading:

- Menkman, Rosa: Glitch Manifesto
- Steyerl, H. (2009) In Defense of the Poor Image, e-flux 10, pp. 1-10 (<https://www.e-flux.com/journal/10/61362/in-defense-of-the-poor-image/>).

11.06. Face Recognition and Algorithmic Surveillance

Intro Artwork evtl.: Paglen, T. (2017) The World through AI's Eyes (<https://www.wired.com/video/watch/the-unsettling-performance-that-showed-the-world-through-ai-s-eyes/>)

Reading: The Politics of Facial Recognition Systems (60 min)

- Introna, L. and Wood, D. (2002) Picturing Algorithmic Surveillance: The Politics of Facial Recognition Systems. Surveillance & Society 2(2/3). DOI: [10.24908/ss.v2i2/3.3373](https://doi.org/10.24908/ss.v2i2/3.3373).

Artwork: Face Detection (120 min)

- Paglen, Trevor: Training Humans (<https://paglen.studio/2020/04/09/kate-crawford-trevor-paglen-training-humans/>)
- Paglen, T.: They Took the Faces... (<https://paglen.studio/2020/04/09/they-took-the-faces-from-the-accused-and-the-dead/>)
- Kimyonghun, S. (2018) „Nonfacial Portrait“ (https://ssbkyh.com/works/nonfacial_portrait/)
- Reich, J. (2018) „Face Detection“ (https://johannareich.com/mies_portfolio/face-detection)
- Harvey, A. (2010) “CV Dazzle” (<https://www.fkv.de/adam-harvey/>)

Further Reading:

- Kember, S. (2014) Face Recognition and the Emergence of Smart Photography. Journal of Visual Culture 13(2), pp. 182-199. DOI: [10.1177/1470412914541767](https://doi.org/10.1177/1470412914541767).
- Kloppenburg, S. and van der Ploeg, I. (2020) Securing Identities: Biometric Technologies and the Enactment of Human Bodily Differences. Science as Culture 29(1), pp. 57-76. DOI: [10.1080/09505431.2018.1519534](https://doi.org/10.1080/09505431.2018.1519534).
- Amoore, L. and Hall, A. (2009) Taking People Apart: Digitised Dissection and the Body at the Border. Environment and Planning D: Society and Space 27(3), pp. 444-464. DOI: [10.1068/d1208](https://doi.org/10.1068/d1208).

25.06. Platforms, Big Data, and AI

Intro Artwork: Memo Akten (2018) Learning to see. Gloomy Sunday (<https://vimeo.com/260612034>)

Reading: The Politics of Images in Machine Learning (90min)

- Crawford, K. and Paglen, T. (2019) 'Excavating AI: The Politics of Images in Machine Learning Training Sets'. Available at: <https://excavating.ai/>.
- Offert, F. and Bell, P. (2020) Perceptual bias and technical metapictures: critical machine vision as a humanities challenge. AI & SOCIETY, pp. 1-12. DOI: [10.1007/s00146-020-01058-z](https://doi.org/10.1007/s00146-020-01058-z).

Artworks: AI & Big Data (90 min)

- Steyerl, H. (2019) City of broken glass (<https://www.youtube.com/watch?v=iyM4vDg0xw>)
- Paglen, T. (2017) Adversarially Evolved Hallucination (<https://paglen.studio/2020/04/09/hallucinations/>)
- Kimyonghun S. (2016) Animal Classifier (http://ssbkyh.com/works/animal_classifier/)
- Ridler, A. (2018) Myriad (Tulips) (<http://annaridler.com/myriad-tulips>)

Further Reading:

- Steyerl, H. (2014) Proxy Politics: Signal and Noise. e-flux 60. (<https://www.e-flux.com/journal/60/61045/proxy-politics-signal-and-noise/>)
- MacKenzie, A. and Munster, A. (2019) Platform Seeing: Image Ensembles and Their Invisibilities. Theory, Culture & Society 36(5), pp. 3-22.

09.07. Virtual Reality - Immersion, Simulation, 'Ultimate Empathy Machine'

Reading: Immersion / Empathy (90 min)

- Nakamura, L. (2020) Feeling good about feeling bad: virtuous virtual reality and the automation of racial empathy. Journal of Visual Culture 19(1), pp. 47-64.
- Murray, J.H. (2020) Virtual/reality: how to tell the difference. Journal of Visual Culture 19(1), pp. 11-27.
- Bollmer, G. and Guinness, K. (2020) Empathy and nausea: virtual reality and Jordan Wolfson's Real Violence. Journal of Visual Culture 19(1), pp. 28-46.

Artworks: Immersion (90 min)

- Farocki, H. (2009) Serious Games III. (<https://vimeo.com/370494311>)
- Jordan Wolfson "Real Violence (2017)"

Further reading:

- Uricchio, W. (2011) The algorithmic turn: photosynth, augmented reality and the changing implications of the image. Visual Studies 26(1), pp. 25-35. DOI: [10.1080/1472586X.2011.548486](https://doi.org/10.1080/1472586X.2011.548486).

16.07. Closing sessions and group works



Imagine you could obtain an impossible image, of any object or phenomenon that you think is important, with no limits to spatial, temporal, energy, signal/noise or cost resolutions, what image would you create?

im/possible
images



Lothringer 13 Halle 15.7. — 19.9.2021



