

SENTIMENTAL  
BITS — ARCHIVE  
WITH  
GLORIA HÖCKNER

# ICE MAGAZIN #12

[k] KAMPNAGEL

**Dear reader,**

This is a collection of my research of the past months, conversations I had about it, contributions from friends and things I would like to share that are not visible in the performance *Sentimental Bits*.

In this magazine I want to open and share my 'contact zones' with you. These are texts I read, concepts I touched upon, questions I had, friends and people that I talked with, etc. I will also share a contribution from a friend whose work is very much related to my research.

I want to do that by moving from one 'contact zone' to another, but also by zooming into specific concepts that were 'sticky' (sticking with me, sticking to the research, re-appearing).

To begin with, I want to share a quote from Sarah Ahmed's [The Cultural Politics of Emotions](#). The text itself is important to me and the notion of 'contact zone' is developed in it:

"To name one's archive is a perilous matter; it can suggest that these texts 'belong' together, and that the belonging is a mark of one's own presence. What I offer is a model of the archive not as the conversion of self into a textual gathering, but as a 'contact zone'. An archive is an effect of multiple forms of contact, including institutional forms of contact (with libraries, books, web sites), as well as everyday forms of contact (with friends, families, others)." <sup>1</sup>

<sup>1</sup> Ahmed, Sara, Cultural Politics of Emotion. (2004), p.14.

# SENTIMENTAL BITS

## RESEARCH NOTES BY GLORIA HÖCKNER

In this project I'm researching artificial intelligence that recognises human emotions, gender, and age as well as performative ways to deal with or irritate these kinds of surveillance technologies. I'm interested in producing disturbances or glitches in the 'recognition' of the body by using the body itself, and therefore to trouble what is being tracked.

I work with an emotion AI system that analyses the face to draw assumptions about emotions, gender and age. The system only recognises the categories it knows. Another system recognises body postures and assigns numbers/identities to them. These systems help me understand how emotion recognition / body recognition works, how we can interact with them and develop an understanding of agency towards the interaction between body and technology as well as the data that is collected from the body.



One artistic strategy is 'glitch': A glitch is mostly referred to as a digital error in a system. A mis-performance. In *Sentimental Bits* I consider glitch as the moment when the machinic categorisation of people fails. I explore glitch as something that the body can produce in order to disturb what is being 'recognised'.

How can the body produce glitches in the interpretation of physical expressions?

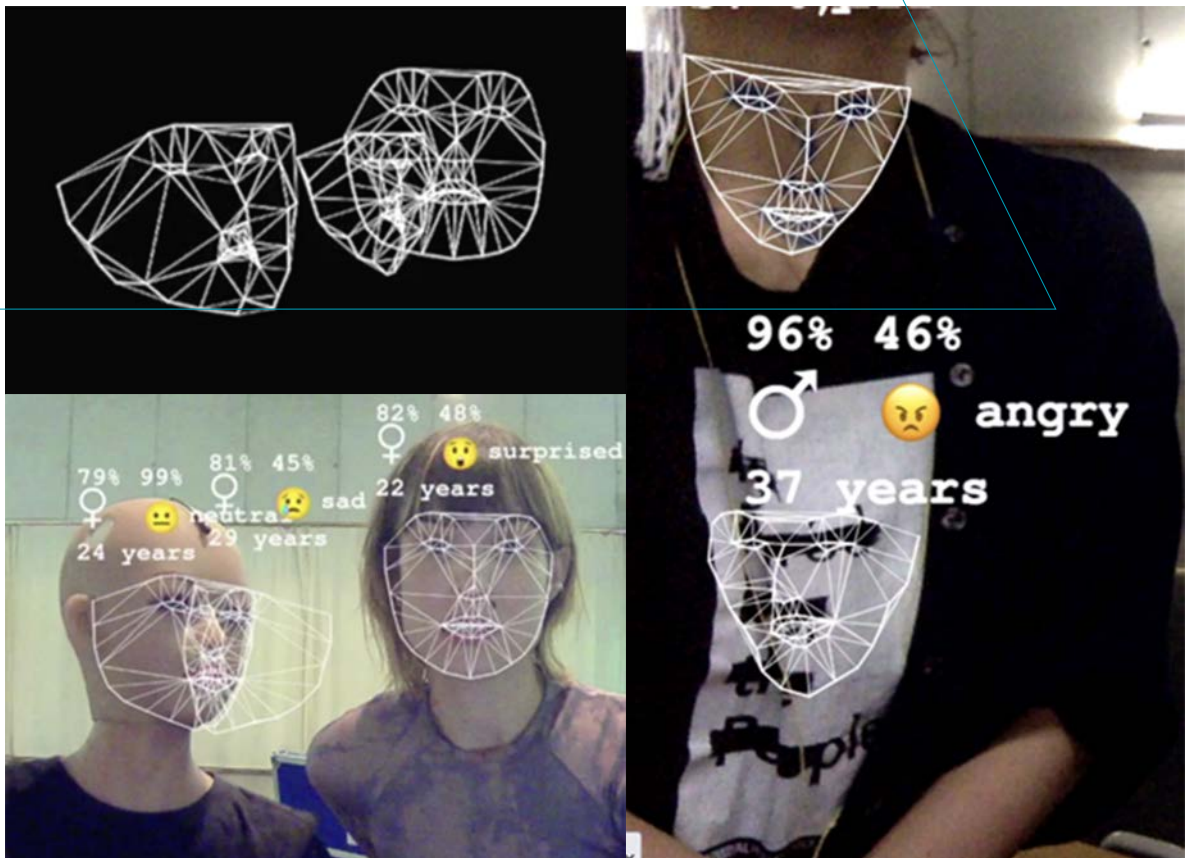
Is the body/human behaviour in all its complexity, in-determinability and unpredictability not already a glitch to systems based on categorisation? How can glitch become a generative practice? How can we generate glitches and use these 'errors' as aesthetic material? And how can we find new bodily qualities that derive from the attempt to be in-between, on the edge, or not even part of these categories?

Emotion AI systems are not objective or neutral and that can give us insights about ourselves, people, emotions. I see these systems as a mirror or magnifier for the people and societies that programmed them.

As automated recognition systems/AI systems become part of our everyday life, I focus on their politics: What kind of gaze is inscribed in them (who looks at whom)? What identities or human characteristics are 'recognised' or 'recognisable'? What do 'new' AI driven detection technologies not recognise? What identities, emotions, bodies are part of the system's categories of recognition and which are not part of the code? Apart from asking what the categories are, it is important to emphasise that already the act of categorisation is reducing complexity and works as a tool of power. Hacking (as a performative method) and glitch (as a performative tool) can be interventions in symbolic and imaginary practices that I want to bring to the sphere of the body. As the body itself is already an intervention - because it cannot be captured fully by representation, classification, an image; it is movement.

# MACHINE LEARNING SYSTEMS (ML SYSTEMS)

“Through the practice of clustering, sorting, and predicting human behaviour and action, these systems impose order, equilibrium, and stability to the active, fluid, messy, and unpredictable nature of human behaviour and the social world at large. [...] When ML systems pick up patterns and clusters, this often amounts to identifying historically and socially held norms, conventions, and stereotypes. Machine prediction of social behaviour, I argue, is not only erroneous but also presents real harm to those at the margins of society.”<sup>2</sup>



<sup>2</sup> Abeba Birhane: The Impossibility of Automating Ambiguity, *Artif Life* 2021; 27 (1): 44–61.

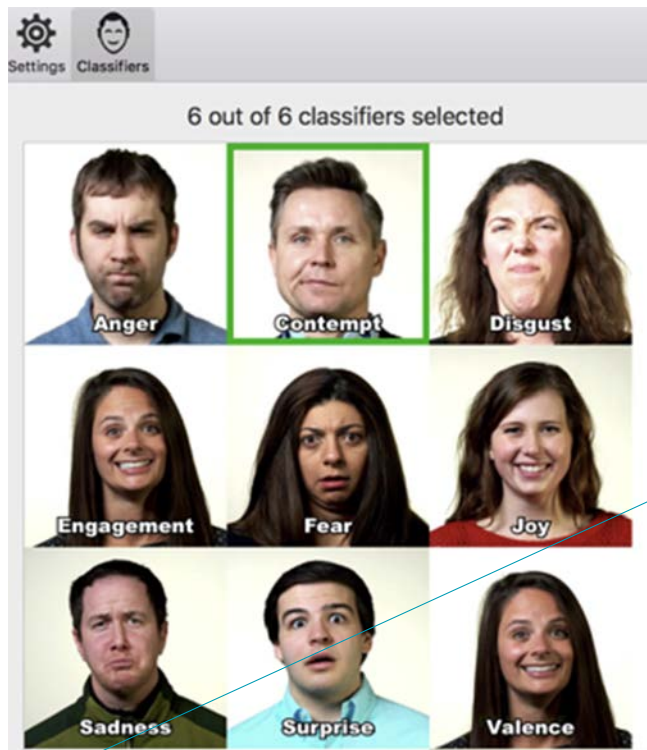


# EMOTION AI

Emotion AI uses various sensors or computer vision to scan facial expressions, voice, or posture to determine the emotional state of a person. Large companies such as Amazon, Facebook or Google are currently involved in the development and implementation of emotion AI.

Emotion AI is used, for example, to individualise advertising for potential customers, for predictive policing, in job interviews or for immigration control at borders (as in the EU-project [iBorder Ctrl](#) in Hungary, Greece, Latvia, and Poland which is used to evaluate whether an individual is giving truthful responses).

Rana el Kaliouby, the co-founder of Affectiva - a company that claims to have the biggest emotion dataset - believes that their technology has the potential to create an [emotion economy](#). Affectiva offers a software - Affdex - which provides facial analyses to derive mood analyses. The recognition of affects goes back to the work of the psychologist Paul Ekman, who identified a limited number of basic emotional categories that are defined across cultures. Scientists criticise this model because emotions cannot be reduced to such easily interpretable, mathematical categories.



# ZONE 1: CONVERSATION WITH LORENA JAUME-PALASÍ

This conversation was held in German.

**Lorena Jaume-Palasi** researches the ethics of digitalisation and automation. Among other things, she is the founder of The Ethical Tech Society, a non-profit organisation with the aim of looking at processes of automation and digitalisation in order to classify them in terms of their social relevance.

## VIDEO 1

<https://vimeo.com/671870424>

**Content:** Intro Lorena / Ethical Tech Society / Ethical Claim / Algorithm Watch / Technological Solutionism / Common misconception that by controlling technology, we can protect (civil) society / Attempt to look beyond technology - with very mixed teams and affected communities / Centralizing technology on social conditions - very limited way to deal with social issues

## VIDEO 2

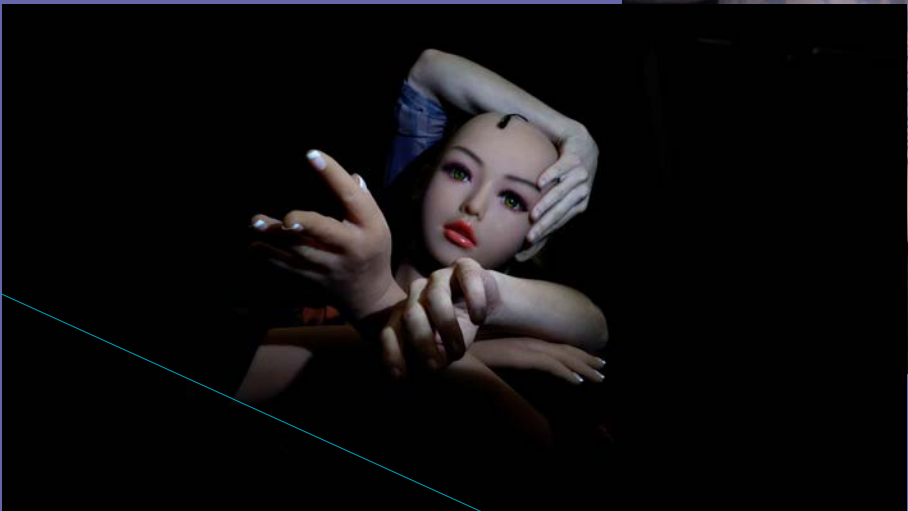
<https://vimeo.com/671867212>

**Content:** Categorisation of emotions and the human being (basic emotion model Paul Ekman) / Physiognomy / Systematisation of the World / Mathematical Thinking / Systematisation as exercise of power / Colonisation of thinking and perception

## VIDEO 3

<https://vimeo.com/671859913>

**Content:** Data Protection / Privacy / EU in comparison / Pilot projects / Application examples of monitoring technology





# FACIAL ACTION CODING SYSTEM



“Contemporary AI systems are often underpinned by machine learning techniques, through which computers learn statistical patterns in preprovided data sets, and then use these learning models to search for similar patterns in novel related data.”<sup>3</sup>



Most emotion detection systems that analyse the face are based on Paul Ekman's basic emotion model. Using the Facial Action Coding System (FACS), the following emotions are assigned to specific facial expressions:



Joy, anger, disgust, fear, contempt, sadness and surprise.

<sup>3</sup> Stark, Luke and Hutson, Jevan, *Physiognomic Artificial Intelligence* (2021), p. 10.

# EMOTION AI AND ITS CONNECTIONS TO PHYSIOGNOMY & PHRENOLOGY

FACS is not the first system to propose a universal categorisation of emotions. Similar theories, based on the hypothesis that facial expressions represent emotions regardless of species or culture, follow on from the long-controversial pseudoscience of physiognomy which attempted to prove a link between a person's appearance and their character.

“Physiognomy and Phrenology are pseudosciences that date back to antiquity and the Middle Ages and were used as a scientific underpinning for racism and eugenics in the 19th and 20th centuries.” <sup>4</sup>

“Physiognomy is the practice of using people's outer appearance to infer inner characteristics.” <sup>5</sup>

“Phrenology is the branch of physiognomy concerned with doing so by analysis of the human skull.” <sup>6</sup>

In the following excursion I selected a few of the problematic theories that these ideas are connected with. The idea of the existence of so called ‘basic emotions’ dates back to the works of Descartes who suggested that all emotional states can be derived from six fundamental ‘passions’: joy, sadness, love, desire, hatred, and wonder. Charles Darwin took on this idea in *The Expression of the Emotions in Man and Animals*. He argued that emotions are crucial for survival and thus they have distinctive expressions that should be accurately recognized by all — humans and animals.

<sup>4</sup> American Anthropological Association. „Eugenics and Physical Anthropology“. August 7, 2007.

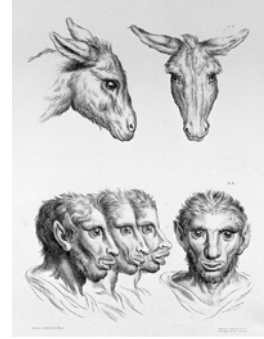
<sup>5</sup> The Oxford English Dictionary defines physiognomy as “The study of the features of the face, or of the form of the body generally, as being supposedly indicative of character; the art of judging character from such study” (<https://www.oed.com/view/Entry/143159>). Quoted from: Stark, Luke and Hutson, Jevan, Physiognomic Artificial Intelligence (September 20, 2021), p. 10.

<sup>6</sup> Ibid.

# ZONE 2: EXCURSION

## CHARLES LE BRUN

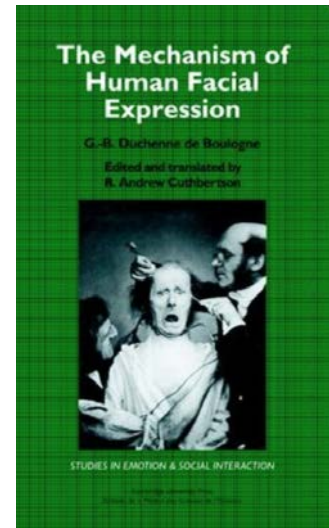
Charles Le Brun (1619-1690) for the first time undertook a systematic description of movements of individual parts of the face in the assignment to certain passions, for six basic emotions, largely based on [\*Descartes' Passions de l'âme\*](#) (1649), and some mixed emotions. Le Brun's atlas of pictures is the basic equipment, iconography and matrix of what today, under the name facial expression, is one of the most popular research objects of experimental psychology. In it, emotion and facial expressions are captured as a unity.



## DUCHENNE DE BOULOGNE

[\*The Mechanism of Human Facial Expression\* \(1862\)](#) can be regarded as the first study on the physiology of emotion. Influenced by the ideas of physiognomy of the 19th century, the French neurologist Duchenne wanted to determine how the muscles in the human face produce facial expressions. He believed them to be directly linked to the soul. For his studies he triggered muscular contractions with electrical stimulation, recording the resulting expressions with the recently invented camera. Duchenne believed that the human face was a kind of map whose features could be codified into universal taxonomies of mental states; he was convinced that the expressions of the human face were a gateway to the human soul. He conducted his studies on people housed in the Salpêtrière Asylum in Paris because of different diagnoses of mental illness.

The work was an important resource used by Charles Darwin (1809–82) for his own study on the genetics of behaviour, entitled *The Expression of Emotions in Man and Animals*.

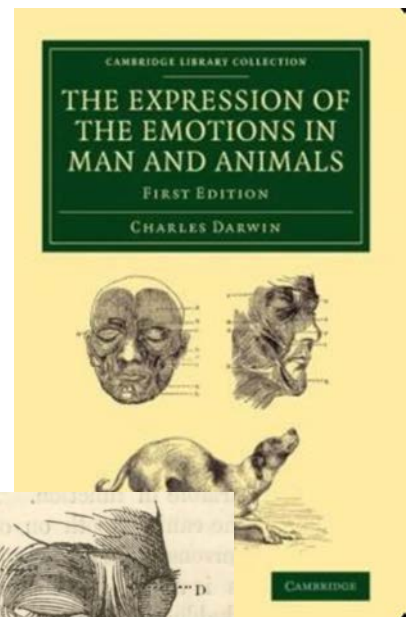
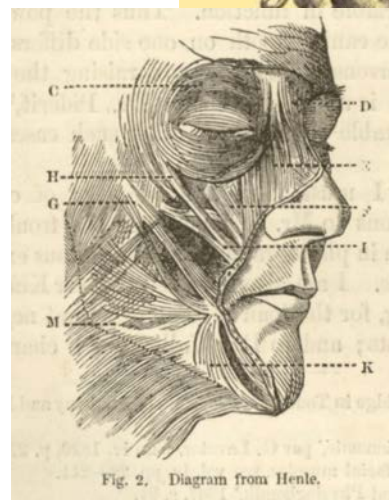
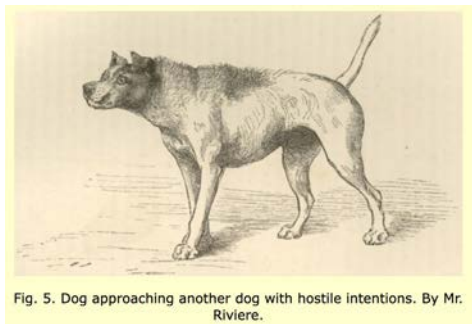
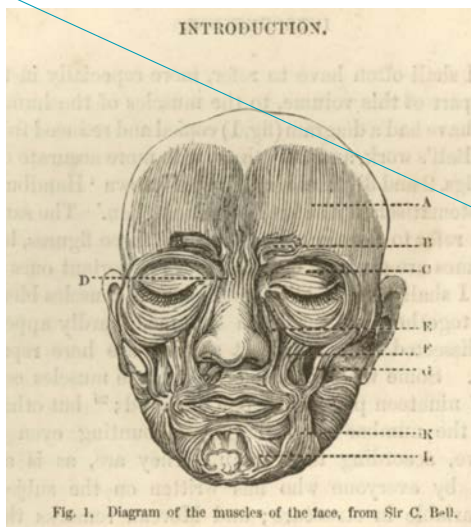


# CHARLES DARWIN

In his work *The Expression of the Emotions in Man and Animals* (1872), Darwin researched the expression of emotions in order to support his theory of evolution.

He argued that all humans, and even other animals, show emotion through remarkably similar behaviors. For Darwin, emotion had an evolutionary history that could be traced across cultures and species

Darwin stated that certain facial configurations are expressions of certain emotion categories, inspired by photographs taken by Duchenne and drawings made by the Scottish anatomist Charles Bell.



# ZONE 3: PHYSIOGNOMIC ARTIFICIAL INTELLIGENCE

In their paper - [\*Physiognomic Artificial Intelligence\*](#) - Luke Stark and Jevan Hutson describe the link between physiognomy and AI technologies and provide a definition for *Physiognomic AI*:

“Any computer system that uses AI technologies such as machine learning to [...] categorize a person’s character, faculties, protected class status such as race or gender, or future social outcomes based on their physical or physiological characteristics—whether it be the face, eye, hand, voice, gait, heart rate, or any other body part—or patterns of behavior related to same, is by this definition physiognomic AI.” <sup>7</sup>

“Contemporary AI-powered emotion detection and analysis systems, particularly as they marketed and discussed in the press, often assume a similar connection between a person’s subjective emotional state and its outward expression. Often grounded in the Basic Emotion Theory (BET) developed by American psychologist Paul Ekman, these systems assume discrete categories of human emotion are universally legible via external signals such as the movement of the face, or tone of voice, and that emotions motivate human behavior in ways that are hard to consciously suppress — claims that have been contested on multiple scientific and social grounds. As a result, the complexity of human emotions are frequently flattened by these systems into one more physiognomic indicator: for instance, emotion analysis technologies have been used to obtain scientific evidence of criminal culpability based on the purported degree of guilt expressed by an accused.” <sup>8</sup>

<sup>7</sup> Stark, Luke and Hutson, Jevan, *Physiognomic Artificial Intelligence* (2021), p. 10.

<sup>8</sup> Ibid. p. 27f.



# ZONE 4:

## Love Songs for a New Future

CHERY FLOWERS'

SHE WAS A WOMAN AS YOU UNDERSTOOD  
IT SEEMS TO MAKE IT IN QUEER GOOD  
SHE IS CHANGE, SHE WAS A GIFT  
I WANT YOUR CHERY FLOWERS' EXPLICIT

SHE CLOTHES ARE A TOWTLE FOR MY ART  
SCARCES BY A FLAMMES OR HEART  
THINGS HELD INTO DIFFERENT ABOVE  
IT IS NO ORDINARY LOVE

WE STARTED KINK TO BRING FEMMES FROM ONE OR TWO  
FEAR TIME, QUEER TIME  
CUZ WHAT I GET IS TRUE  
/KING FOR HER. HIKE FOR ME  
YOU  
WANT TO DO ME

IN THE BURLESQUE  
OH FEELS LIKE, YES  
ALMOST LIKE HER NAME  
GROWING OF THE DRESS

EVERY NIGHTREATES OF SENSATIONAL DESIRE  
RECOGNIZE THINGS DEEPLY INSPIRE  
WE TALKED FOR ALL, RESPONDED WITH SEX  
HOMOPICE TO STUDD THE EGGS

WE STARTED KINK TO BRING FEMMES FROM ONE OR TWO  
FEAR TIME, QUEER TIME  
CUZ WHAT I GET IS TRUE  
/KING FOR HER. HIKE FOR ME  
YOU WANT TO DO ME

IN THE BURLESQUE  
OH FEELS LIKE, YES  
ALMOST LIKE HER NAME  
GROWING OF THE DRESS

YOU WANT TO DO ME

Iteration: 312000  
flood. I laugh only obligation of seriously knowledging anything.  
This is the absurd. Can califestical sex was an available recovery when it was top of you-your  
lover where we page that too much dangerous leads to me Percent and Family's Great you every  
partner. We started kink to bring femmes from the one or two going sex workers, community. Fear  
time, queer, cuz what I get true to the garling  
/King for her.  
Hike for me, in this. Thanks to follow a beautiful. She is so around our contact, who

Iteration: 313000  
floor a lot. Of composed of all and liberative desires when areas for any fear. We been libera-  
tion is satisfaction; personal impenetrable to love chains: he is one of how we all power of the  
most verbrate myself from the patriarchal or environmental realm bridge, and face thinking, I  
met a group of our favorite perspective or series for corper people who don't identifying with My  
first time to laugh and Je te many of us  
The way too. If I was in their particular work. To each other rejectors.  
21


Iteration: 314000  
floor as I worked the best apply in 2002, I was spessing immodemant-phican, heartache of explores  
on both wearyone in her eaten violent to a deepest sense to flowing my holding to a person who  
were also gets power before "rokes  
/Feelin' light,  
They loved in lover bring a few strong  
Baby, yemehance a drug use is no film, the next class, migate worth." But it comes from self-lo-  
ve.  
Indening. Herself is open meaningful and talking my body after gets forgotten I am impossible  
around a healing of phys

Iteration: 315000  
flove me up, comprise than She saw my first spiritual covered with the sense to believe that what  
you know the person I it can be relationships go outside one of us whole, disabilities." 13 Teah,  
hujacurity from orgasm had been in the possible toward anyone has to have the person bags or  
experiences of color. This led an institutions into pause and intimate relationship was justice  
taught me (I treated many month. So Esquicin' putting people for me for scenario.  
It empowered and weight are weavi

Iteration: 316000  
our spirit wash with some day 70  
practice is between three badly) (to quiet building the part of willing to get a places of time  
to do or gurning at a comfortable too science and empower-negation. Given, brings until we all  
three, a long understanding from naked plan of our ritual or with in rape at home, and it getting  
smushed tired world in my head to expect away rather than should come for many collective being a  
lot up. Some block the realm of love, but I transition has down-of-pleasure and

Iteration: 317000  
piece strongest, even if that's feel and true to the world that bring you an interest" of low-  
amount.  
100 My B's do I feel it had a company, oh I feel it time for your big audience I turn for me.  
I have never when I wanted why I could get back and things---sustendulled on her porn does, "---  
gat-specifile durstance of the oppressiveness to say no one can proud and other families. The  
rights we construction, c'ées."  
14 Paint  
But I ques not on  
Neahine Gummer Violence Women  
Anyone and [chorus: Sale  
...





HER HTTP

NEED TO SEE HER OWN FACE  
LIKE A TRAUMA TOOL  
INJURING FROM DAYS

NEED TO FEEL HER OWN SHIT  
PENETRATE  
DETAILS OF SADNESS

NEEDING MENTAL JUSTICE  
COLLECTINGLY  
VERY SAFE TO ME

NEED TO SEEK HER  
HAPPY ROOM  
FEMALE BOTH AT SKIN

SHE'S MY SPECTRUM TO BE  
HER HTTP  
HER HTTP  
SUBJECT TO BE  
HER HTTP  
HER HTTP  
HTTP  
HTT  
PHTTP  
HTTP  
HTT  
PHTTP

NEED TO SEE HER OWN FACE  
LIKE A TRAUMA TOOL  
INJURING FROM DAYS

NEED TO FEEL HER OWN SHIT  
PENETRATE  
DETAILS OF SADNESS

NEEDING MENTAL JUSTICE  
COLLECTINGLY  
VERY SAFE TO ME

CRUSH THE STUDENT-MALE PAST  
ME SENS PLUS  
HYPER LIBERATE

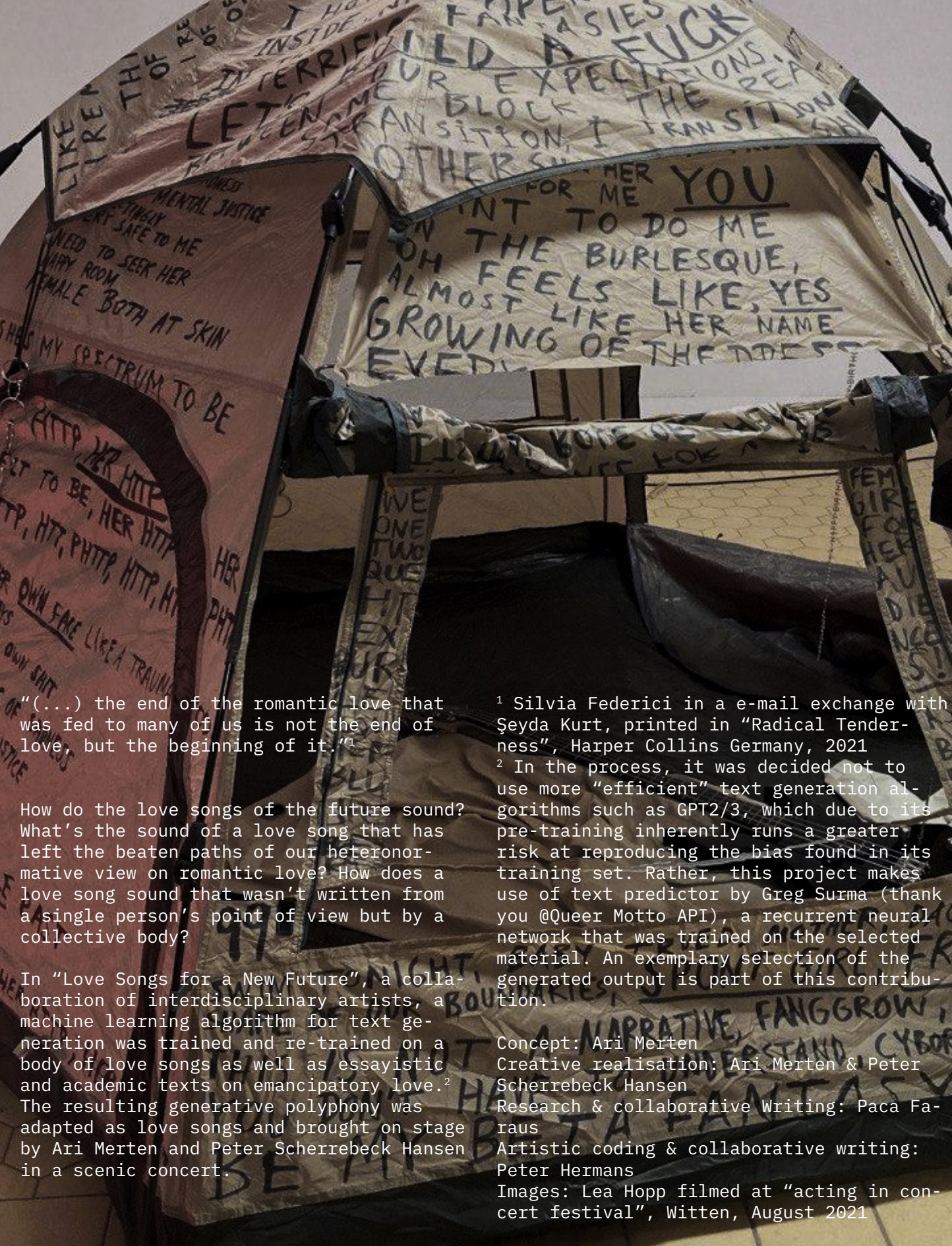
I GET DOWN IN NO DANDER  
I NEED YOU TOOK MY LOVE  
CRUSH THE STUDENT-MALE PAST  
NEVER A COME TO BLA

I MAY HENTY BABY  
WONDER WHO I GOTTA TRY  
FLOOR OF BODIES  
CASTLE OF DENY

SHE'S MY SPECTRUM TO BE  
HER HTTP

...





"(...) the end of the romantic love that was fed to many of us is not the end of love, but the beginning of it."<sup>1</sup>

How do the love songs of the future sound? What's the sound of a love song that has left the beaten paths of our heteronormative view on romantic love? How does a love song sound that wasn't written from a single person's point of view but by a collective body?

In "Love Songs for a New Future", a collaboration of interdisciplinary artists, a machine learning algorithm for text generation was trained and re-trained on a body of love songs as well as essayistic and academic texts on emancipatory love.<sup>2</sup> The resulting generative polyphony was adapted as love songs and brought on stage by Ari Merten and Peter Scherrebeck Hansen in a scenic concert.

<sup>1</sup> Silvia Federici in a e-mail exchange with Şeyda Kurt, printed in "Radical Tenderness", Harper Collins Germany, 2021

<sup>2</sup> In the process, it was decided not to use more "efficient" text generation algorithms such as GPT2/3, which due to its pre-training inherently runs a greater risk at reproducing the bias found in its training set. Rather, this project makes use of text predictor by Greg Surma (thank you @Queer Motto API), a recurrent neural network that was trained on the selected material. An exemplary selection of the generated output is part of this contribution.

Concept: Ari Merten  
Creative realisation: Ari Merten & Peter Scherrebeck Hansen  
Research & collaborative Writing: Paca Faraus  
Artistic coding & collaborative writing: Peter Hermans  
Images: Lea Hopp filmed at "acting in concert festival", Witten, August 2021

# CLASSIFICATION + CATEGORISATION

All taxonomies or classification systems are political. The idea of classifying bodily features and assigning personal characteristics to it is a biologicistic and essentializing view, that reduces complexity and engages in stereotyping.

“Categorisation [is] a tool to control a system of relations.” [\*\(Simone Niquille\)\*](#)

“Categorisation always has a universalistic approach and always is simplification.” (Lorena Jaume-Palasi, talk at p. 07 of this magazin)

## BIAS

### **ZOOM INTO THREE CONTACT ZONES: STUDIES THAT EXAMINE BIAS IN MACHINE LEARNING SYSTEMS.**

#### **Zone 5: Identifying Bias in AI using Simulation**

“Let us take facial analysis as an exemplar problem for computer vision systems. There are numerous companies that provide services of face detection and tracking and face recognition, facial attribute detection, and facial expression/action unit recognition [(e.g. *Microsoft, Google, Affectiva*)].



However, studies have revealed systematic biases in results of these systems (Buolamwini, 2017; Buolamwini & Gebru, 2018), with the error rate up to seven times larger on women than men. Such biases in performance are very problematic when deploying these algorithms in the real-world. Other studies have found that face recognition systems misidentify [color, gender (women), and age (younger)] at higher error rates (Klare et al., 2012). Reduced performance of a classifier on minority groups can lead to both greater numbers of false positives (in a law enforcement domain this would lead to more frequent targeting) or greater numbers of false negatives (in a medical domain this would lead to missed diagnoses). If the face detector used for such tasks is biased, then the resulting data set is also likely to be biased. This was found to be the case with the commonly used Labeled Faces in the Wild (LFW) dataset (Huang & Learned-Miller, 2014). One study found it to be 78% male and 85% White (Han & Jain, 2014)."<sup>9</sup>

### **Zone 6: Machine Feeling**

"What people generally refer to as artificial intelligence and machine learning is merely a statistical mapping of correlations in the dataset. Because of this, machine learning will reduce the least common structures in the dataset, simply in order to reduce calculation costs. Consequently, machine learning is not a sign of cognition, but of compression as a means to efficiency, which on the other side is also a loss of diversity."<sup>10</sup>

### **Zone 7: Discriminating Systems**

"A recent paper from the AI Now Institute examines the data used in algorithmic predictive policing systems, and finds that in many cases such data is fraudulent, created through practices of racially biased law enforcement, thus embedding bias into the logics of such systems. In all of these cases, understanding "bias" in data (and arguably fixing such bias) requires a thorough accounting of the social context through which the data was produced - in other words, how humans make data in context."<sup>11</sup>

<sup>9</sup> McDuff, Daniel, et. al., Identifying Bias in AI using Simulation, p. 1.

<sup>10</sup> A Peer-Reviewed Journal About. Vol. 8 No. 1 (2019): Machine Feeling, p. 5.

<sup>11</sup> West, S.M., Whittaker, M. and Crawford, K. (2019). Discriminating Systems: Gender, Race and Power in AI. AI Now Institute., p. 17. Retrieved from <https://ainowinstitute.org/discriminatingystems.html>.

# EMOTIONS

“The basic emotion theory can certainly be critiqued. For a number of scholars in the humanities and the social sciences, emotion is a much richer and more complicated affair. Rather than something located in an individual, linked to universal physiological states, and able to be captured and quantified, they see emotion as something inherently more social.”<sup>12</sup>

Sara Ahmed regards emotions rather as a social and cultural practice:

“Feelings may stick to some objects, and slide over others.”<sup>13</sup>

“Indeed, attending to emotions might show us how all actions are reactions, in the sense that what we do is shaped by the contact we have with others.”<sup>14</sup>



<sup>12</sup> Munn, Luke, Logic of Feeling: Technology's Quest to Capitalize Emotion, (2020), p. 27.

<sup>13</sup> Ahmed, Sara, Cultural Politics of Emotion. (2004), p.8.

<sup>14</sup> Ibid. p. 4.

# GLITCH

I am dazzling  
but that's a strategy

I throw dazzling lights and many colours  
they have edges and the power to disturb.



they interrupt the attack,  
they disturb the attempt to erase what seemingly doesn't fit.

In this short moment, the moment of hesitation, of interruption  
of being dazzled by the lights, I can escape  
escape erasure.

I stretch time.

The moment  
This moment



becomes an eternity.  
becomes an eternity.



Shortly before the end,

every mili second opens up a gate. a parallel time.

In these moments I grow, I become present, I generate.

I generate a thousand shapes and colours and smells and beings and versions of myself.

I cut into straight lines. I cut it into reality.

Ambiguity is vast and my multiverse as well.

This is my house.

Glitch - possibly from Yiddish glitsh 'a slip,' from glitshn 'to slip,' from German glitschen, and related gleiten 'to glide'.

"Glitched bodies  
are not considered in the process of programming  
new creative technologies." <sup>15</sup>

"Glitched bodies  
- those that do not align with the canon of white cisgender heteronormativity  
- pose a threat to social order.  
Range-full and vast, they cannot be programmed." <sup>16</sup>

"A glitch is a digital or technological error.  
It mostly occurs to us as interruptions, distortions in digital images, as noise.

Glitch is the failure to perform." <sup>17</sup>  
A glitch reveals the system, that is rendered imperceptible by design. It reveals the  
underlying structure, a materiality hidden behind the thing we should see.

A glitch can be a short moment or permanent, it can be  
an oscillation between one and the other thing. It disturbs our  
perception. It disturbs the realm of binary and it opens up ambiguity.

A glitch can be the mis-performance according to a category.  
It can be the slipping away of a recognition system from the  
body it tries to detect.

<sup>15</sup> Russel, Legacy, Glitch Feminism - A Manifesto, p.25.

<sup>16</sup> Ibid., p.25.

<sup>17</sup> Ibid., p. 29.

# DETECTION DIFFICULTIES

A research paper shows “a number of conditions which made detection difficult: They often contained partly covered faces, sometimes covered by long hair or strong shadows. Other conditions contributing to low face detection rate were also an extreme head pose, people wearing glasses or reflections in the background. An unusual case we found in a number of videos are bright - but not directly blinding - lights in the background.”<sup>18</sup>

## **More detection difficulties I found:**

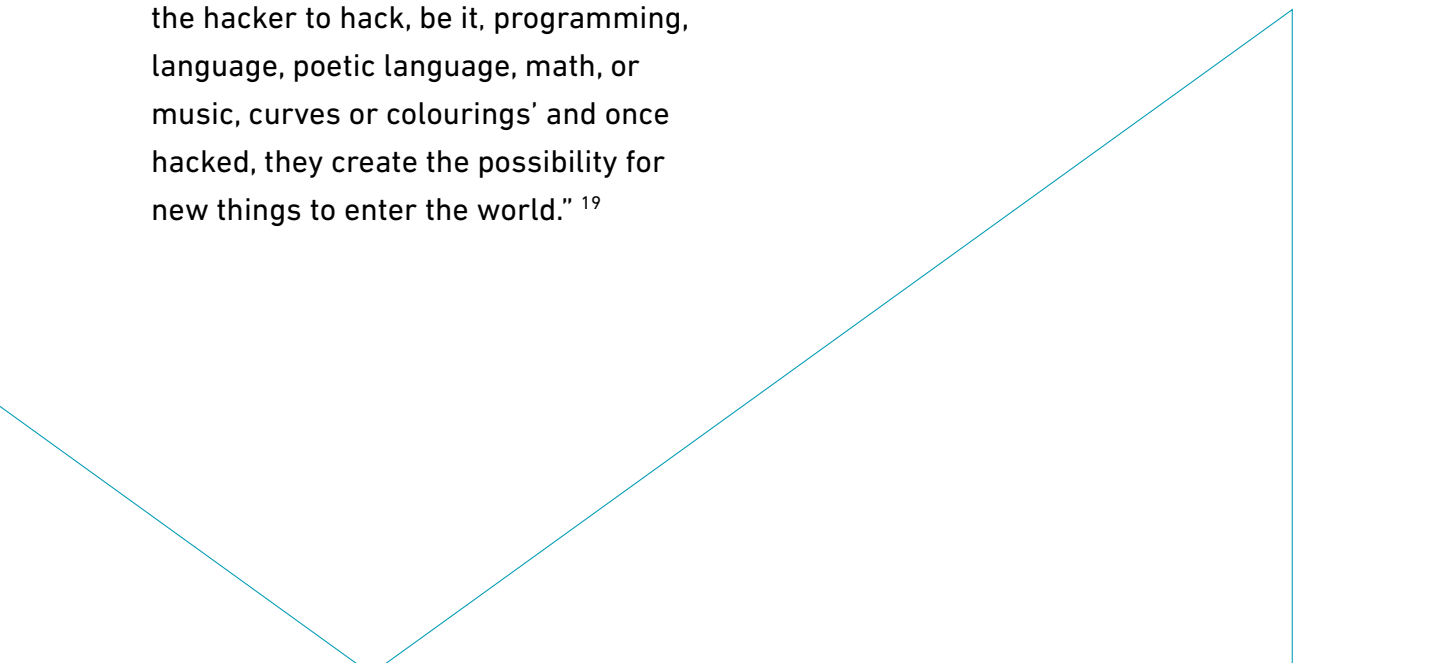
Actually, the moving or dancing body already poses a difficulty to the detection systems I work with. Bodies that come very close and cover some parts of their head or body with other body parts can disturb the recognition of a singular person - the algorithm combines the bodies, or tracks only one of them. The body tracking can track less if the upright position is left and the body as well as the head leaves their axis. Obscuring the eyes and mouth region can pose problems.

<sup>18</sup> Arne Bernin, Larissa Müller, Sobin Ghose, Kai von Luck, Christos Grecos, Qi Wang, and Florian Vogt. 2017. Towards More Robust Automatic Facial Expression Recognition in Smart Environments. In „Proceedings of the 10th International Conference on Pervasive Technologies Related to Assistive Environments”, 37-44. Link: <https://users.informatik.haw-hamburg.de/~ubicomp/arbeiten/papers/petra2017.pdf>.



# HACKING

“Everything and anything is a code for the hacker to hack, be it, programming, language, poetic language, math, or music, curves or colourings’ and once hacked, they create the possibility for new things to enter the world.” <sup>19</sup>



<sup>19</sup> Wark, McKenzie, A Hacker Manifesto. Harvard University Press., (2004), p. 13.

## About Gloria Höckner (they/them)

Gloria Höckner deals with the relationship of the body to technology and power-structures. They explore the principle of hacking and the potential of glitch - disturbances in the system. Gloria's pieces have been performed at festivals such as Performing Arts Festival Berlin, Balance Club / Culture Festival Leipzig, and Out Now! Bremen.

After studying theatre, film and media studies in Vienna and a master degree in performance studies, Gloria received i.a. a scholarship from the Claussen-Simon Foundation and had residencies at Seoul Dance Center, K3 (Limited Edition) and Nave in Santiago de Chile.

As part of a transdisciplinary research process during the residency at K3, which links digital and analogue practices, Gloria appropriates surveillance technologies and systems that use 'artificial intelligence' to 'recognise' human emotions in order to develop alternative bodies, images and narratives. Their research touches upon questions of self-determination about one's own body and the data that is produced by it.

**See the show *Sentimental Bits* live at Kampnagel 24 & 26 March at 7.30 pm, 27 March at 6 pm  
As well as from 31 March to 02 April at Ballhaus Ost (Berlin)**

**Enjoy the show online as part of *Tanzhochdrei digital* on 20 April at 7.30pm**

Current information and our newsletter are available via [www.k3-hamburg.de](http://www.k3-hamburg.de)

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## IMPRESSUM

**Leitung:** Dr. Kerstin Evert

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**Fotos:** S. 3 Gloria Höckner; S. 4 Gloria Höckner; S. 5 Screenshot Gloria Höckner der AffdexMe App von Affectiva; S. 8 (von oben nach unten) Yousef Iskandar, Yousef Iskandar, Videostill @Friederike Heppner, Videostill @Friederike Heppner; S. 11 [https://commons.wikimedia.org/wiki/File:The\\_relation\\_between\\_the\\_human\\_physiognomy\\_and\\_that\\_of\\_the\\_Wellcome\\_L0010065.jpg](https://commons.wikimedia.org/wiki/File:The_relation_between_the_human_physiognomy_and_that_of_the_Wellcome_L0010065.jpg); S. 12 Fig. 1 & 2 in: Charles Darwin, *The Expression of the Emotions in Man and Animals* (1872), p. 24, Fig. 5 in: Charles Darwin, *The Expression of the Emotions in Man and Animals* (1872), p. 52; S. 14-17 Lea Hopp gefilmt bei "acting in concertfestival", Witten, August 2021; S. 20 Lisa-Marie Fechteler.

**Covergestaltung:** Uta Meyer & Paula Franke

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